Mothers Mood Study: women's and midwives' experiences of perinatal mental health and service provision

Thesis submitted for the degree of

Doctor of Philosophy

by

Nicola Savory

February 2020

School of Healthcare Sciences

College of Biomedical and Life Sciences, Cardiff University

Statements and Declarations

Statement 1

This thesis is being submitted in partial fulfilment of the requirements for the degree of PhD.

Signed _____

Date   _____

Statement 2

This work has not been submitted in substance for any other degree or award at this or any other university or place of learning, nor is it being submitted concurrently for any other degree or award (outside of any formal collaboration agreement between the University and a partner organisation).

Signed _____

Date   _____

Statement 3

I hereby give consent for my thesis, if accepted, to be available in the University's Open Access repository (or, where approved, to be available in the University's library and for inter-library loan), and for the title and summary to be made available to outside organisations, subject to the expiry of a University-approved bar on access if applicable.

Signed _____

Date   _____

Declaration

This thesis is the result of my own independent work, except where otherwise stated, and the views expressed are my own. Other sources are acknowledged by explicit references. The thesis has not been edited by a third party beyond what is permitted by Cardiff University's Use of Third Party Editors by Research Degree Students Procedure.

Signed _____

Date   _____

Abstract

Background: Existing research on poor perinatal mental health largely focuses on recognition and treatment of postnatal depression. Consequently, there is a need to explore antenatal mental health.

Aim: To assess poor mental health prevalence in pregnancy, its relationship to sociodemographic characteristics, self-efficacy and perceived support networks. To understand experiences and barriers preventing women with mental health problems from receiving help and explore midwives' understanding of their role.

Method: Questionnaires were completed by women in early pregnancy. A subset identified to have mental health problems, were interviewed in late pregnancy to explore their experiences and barriers to receiving care. Midwives completed questionnaires exploring their experiences of supporting women with mental health problems and focus groups further discussed the issues raised.

Results: Amongst participants (n=302), the Edinburgh Postnatal Depression Scale (EPDS) identified 8.6%, and the Generalised Anxiety Disorder Assessment (GAD-7) 8.3%, with symptoms of depression or anxiety respectively. Low self-efficacy (p=0.01) and history of previous mental health problems (p<0.01) were most strongly associated with anxiety or depression. Thematic analysis of interviews with women (n=20) identified three themes: 'past present and future'; 'expectations and control'; and 'knowledge and conversations'.

Questionnaires were completed by 145 midwives. The three themes identified from the focus groups with midwives were: 'conversations'; 'it's immensely complex'; and 'there's another gap in their care'.

Conclusion: Prevalence rates of anxiety and depression amongst women in early pregnancy were found to be similar to those reported in the literature. Low self-efficacy and previous poor mental health were significant predictors of anxiety and depression. Continuity and more time at appointments were suggested by midwives and women to improve discussions regarding mental health. Midwives were keen to support women but lacked knowledge and confidence. Consistent reference was made to the need for training regarding the practical aspects of supporting women's mental health.

Table of Contents

Table of Figures

Table of Tables

Abbreviations

ACEs	Adverse childhood experiences
ADHD	Attention deficit hyperactivity disorder
aOR	Adjusted odds ratio
BDI	Beck Depression Inventory
CBT	Cognitive behavioural therapy
CI	Confidence interval
DSM	Diagnostic and Statistical Manual of Mental Disorders
ECV	External cephalic version
EPDS	Edinburgh Postnatal Depression Scale
EPDS-3A	Edinburgh Postnatal Depression Scale 3A
GAD	Generalised Anxiety Disorder
GBS	Group B streptococcus
HADS	Hospital Anxiety and Depression Scale
ICD	International Classification of Diseases
IRAS	Integrated Research Application System
IV	Intravenous
MBRRACE	Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK
MLU	Midwifery led unit
MSPSS	Multidimensional Scale of Perceived Social Support
NCT	National Childbirth Trust
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
NIHR	National Institute for Health Research
NMC	Nursing and Midwifery Council
NSPCC	National Society for the Prevention of Cruelty to Children
NQM	Newly qualified midwives
NVivo 11	Qualitative data analysis computer software package Version 11
OCD	Obsessive compulsive disorder
ONS	Office for National Statistics

OR	Odds ratio	
PASS	Perinatal Anxiety Screening Scale	
PHQ	Patent Health Questionnaire	
PNMHT	Perinatal mental health team	
PPI	Patient and public involvement	
PTSD	Posttraumatic stress disorder	
RCM	Royal College of Midwives	
RCT	Randomised control trial	
R&D	Research and development	
REC	Research ethics committee	
RR	Relative ratio	
SCT	Specialist community team	
SPSS	Statistical Package for the Social Sciences	
STAI	State-Trait Anxiety Inventory	
USS	Ultrasound scan	
WIMD	Welsh Index of Multiple Deprivation	

Acknowledgements

This PhD would not have been possible without the support and encouragement of many people.

First I would like to thank Anna Janssen and Professor Ros John from Biosciences who have supported, guided and encouraged me to fulfil my dream by applying for a PhD.

I would also like to thank the Research Capacity Building Collaboration (RCBC) Wales team not only for the funding for the study but also the support through the Community of Scholars. The training and opportunity to learn alongside other clinical practitioners has been immensely helpful on my journey.

I have been fortunate to be supervised by two experienced and supportive supervisors: Professor Ben Hannigan, who provided countless cups of tea at our supervision sessions, as well as his research experience and encouraging comments on the countless drafts. A particular thanks goes to Professor Julia Sanders whom I have had the pleasure of working alongside since I qualified as a midwife. Without her persistence in developing a research culture in the maternity unit I would not have had the opportunity to work on research studies as a midwife. The wealth of knowledge about midwifery and research, and patience when explaining statistics has been much appreciated. They have both guided, encouraged and helped me grow as a researcher.

I also extend my thanks to staff in the antenatal clinic who helped and supported me during the six weeks of data collection. Also to the women and midwives who took the time to fill out the questionnaires and attend the interviews and focus groups; the study would not have been possible without them.

I need to thank my friends and family who may have wondered what I have been doing for the past three years. My father who has been patient and checked each week how I was progressing. Particular thanks to my friend Margaret for the years spent correcting my spelling and grammar, first in my undergraduate degree and now my PhD. Finally, to my husband and daughters who have taken on the household tasks to enable me to spend more time studying and calmed me down when technical computer issues caused frequent frustrations.

Chapter one – Background

1.1 Introduction

Pregnancy signals a time of change for a woman both physically and emotionally and has wider implications for her partner, family and friends with a further need to adjust to financial and social changes. The perinatal period is defined as the time from conception to a year after the birth of a baby. It is often perceived as an exciting period in the life of a woman and her family. The public view is not always translated into reality; women suffering from pre-existing mental health problems can find it a challenging time and some women experience difficulties with their mental health for the first time. Publicity regarding mental health in the general population in the UK has increased over the last few years and campaigns to raise awareness around perinatal mental health have grown.

Chapter one provides a brief outline of the researcher, the rationale for choice of topic and a brief overview of the history of women, midwives and mental health, followed by a brief review of why perinatal mental health is an important topic. Rates of mental health disorders during the perinatal period are reported to understand the extent of the issue. Services for women with mental health problems during the perinatal period in the UK are discussed, including a brief review of the midwives' role. The chapter concludes by providing an overview of the thesis structure.

1.2 The researcher

During my general nurse training placement on the maternity unit in a small general hospital in South Wales, I became fascinated by the art and science of midwifery, particularly the antenatal period and the care taken to assess the health of women and babies, and the complications that can occur in an otherwise 'natural' episode of a woman's life. After qualifying I moved to Cardiff to study midwifery where my tutor Margretta Miles instilled in us her love of midwifery and care of women, plus many anecdotes of her time as a district midwife. She was passionate about the profession and went above and beyond to support and train us to become competent midwives ready for any eventuality. I especially remember the consistent reflection on Midwives' Rules and Code of Practice and emergency situations, the principles of which remain the same today.

Since qualifying as a midwife, I have worked mainly in the consultant-led unit at a large teaching hospital in Wales. The physical care provided to women in the perinatal period has changed little over the years, although the women we see are older and some have underlying medical conditions which would have precluded them from pregnancy

in the past. Furthermore I have witnessed an increase in the number of women attending the maternity unit with pre-existing or new onset mental health problems ranging from anxiety, posttraumatic stress disorder (PTSD), to bipolar disorders. At the same time I have noticed an increase in the number of women attending the assessment unit, many have varying degrees of mental health problems, presenting repeatedly with minor disorders of pregnancy. My interest has grown around this group of women and the care they receive. During the past six years I have been involved in research studies within the maternity unit, the last explored epigenetic changes in the placenta and its relationship to mental health problems in pregnancy. It is with these experiences in mind that I undertook research regarding perinatal mental health.

1.3 A short history of women, midwives and perinatal mental health care

Traditionally as midwives we were taught in depth about caring for the physical needs of mother and baby, however I have little recollection of being taught anything formal about mental health problems in pregnancy and had minimal teaching on the 'third day blues', postnatal depression and puerperal psychosis. This led me to think about midwifery training and the preparation for looking after women's mental health.

During the initial search of literature for my doctoral studies I reviewed the main textbook used by midwives. 'A Textbook for Midwives' has been used for decades by students, myself included. The first edition was published in 1953, written by a midwife teacher Margaret Myles (1953), the latest edition was published in 2014 (Marshall and Raynor 2014).

I was interested to see if there was any recognition of mental health problems during the perinatal period. I was surprised to find there was mention of psychological care, as I did not recall reading much about mental health in the later textbooks during my training. In fact from the beginning of edition one and in several of its chapters, psychological care of women was mentioned prior to discussing physical care. The author stated psychological aspects of perinatal care were within the scope of a practising midwife and one of the aims of midwifery care was 'to promote good physical and mental health during pregnancy' (Myles 1955). Furthermore Myles stated:

> *It is now accepted that, for the successful practice of obstetrics, knowledge of the psychological aspect of child-bearing is as essential as knowledge of the physical aspect. (Myles 1955, p. 92)*

Descriptions and word use may have changed but the implications appeared the same. The words insanity and mania were used in the early editions, these were later

changed to psychiatric disorders by edition four (Myles 1962). There was no mention of psychiatric disorders in the antenatal period, though pregnant women were asked about a family history of insanity at their booking visit, a question still asked today. By the 6th edition published in 1968, mania and melancholia were changed to depression, and postpartum blues were noted on the third or fourth day (Myles 1968). Rates of insanity, now known as puerperal psychosis, were the same then as they are now, around 1 in 1,000 births affected.

Although I was unable to find mention of psychiatric disorders or mental health problems in pregnancy as we know them today in the early editions, there was an overriding importance placed around supporting the emotions of women during pregnancy, labour and postnatally. An awareness of mental wellbeing was evident, and it was not seen as a condition rather an evolving change in circumstance:

> Conflicts and fears that can be so disturbing to the expectant mother's peace of mind. (Myles 1955, p. 92)

The midwives' role in supporting women's psychological or emotional state was also emphasised throughout the books. Comments such as:

> A good midwife adapts her approach to the personality of the woman.

> The midwife should have patience, tact and be sympathetic, with words of praise. (Myles 1955, p. 442)

These words could be echoed by words used today where health care staff are encouraged to provide individualised patient care with dignity and respect. Conversely I would argue that some of the comments are no longer true:

> A woman who dissolves into tears should be considered to have been mismanaged. (Myles 1962, p. 465)

I would rather a woman express her concerns to enable conversations and reassurance. Furthermore the comment:

> She [midwife] should be kindly and helpful rather than brisk and efficient. (Myles 1955, p. 442)

Although the former is true, today being brisk and efficient is encouraged.

Understanding the ambiance that surrounded women was emphasised and its importance to a woman's psychological care. In the postnatal period suggestions were that there should be a 'tranquil atmosphere' (Myles 1955, p. 252) quiet and relaxed, free from worry or excitement; reducing visitors and encouraging sleep was important, something which is very difficult today in busy postnatal wards where women are being admitted and discharged day and night.

Providing information to 'allay fears' was also emphasised throughout the text, containing plenty of guidance for midwives on the education of mothers (Myles 1964, p. 693). Antenatal education including the psychological as well as the physical aspect of care was covered over several chapters (Myles 1964).

Although the wording of later additions changed to a more medicalised text, all supported by research, the content remained much the same. Emotional care by midwives had become a separate chapter rather than intertwined within the text. This is now discussed as communication with women and families. Antenatal education and providing information were still seen as an important role of the midwife. By 2009 a chapter had been written around the subject of perinatal mental health which acknowledged the changes in circumstances which may challenge a woman's mental health, providing information on assessing normal mood changes in pregnancy (Fraser et al. 2009). Throughout the text the word anxiety was used in conjunction with fear or stress, which appeared to be used as a descriptive word rather than an ongoing mental health problem. Anxiety and stress were briefly mentioned alongside third day blues and traumatic births, along with a brief mention of pharmacology or psychosocial management of mild anxiety and depression. Although it was recognising that poor mental health can occur in the antenatal period, the majority of discussion still related to conditions in the postnatal period.

There were many quotes some of which still ring true today. Here is one contentious note describing the temperament of women and its bearing on their reaction:

> *The "happy-go-lucky" women of average intelligence is usually a successful mother; the highly-strung, the imaginative, or the ultra-intelligent types are more likely to encounter or create difficulties.*
> *(Myles 1955, p. 442)*

1.4   Evolution of perinatal mental health in the literature

It has long been known that a small minority of women develop difficulties in adjusting to parenthood. In 1858 psychological symptoms during the perinatal period were described in the book, *Treatise on Insanity in Pregnant, Postpartum, and Lactating*

Women (Trede et al. 2009). This poster from the early 20th century appeared to understand that the mothers' mental health and wellbeing were important to the unborn baby (Figure 1.1).
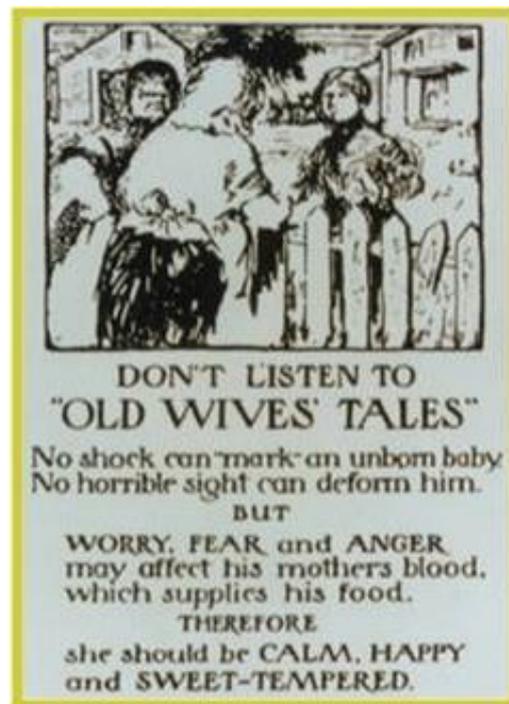
Figure 1.1 USA Public Health Education
Poster 1919.

Research pertaining to perinatal mental health has grown over the years from around 10 articles a year in 1920 to more than 110 per annum from 1995. The majority originated from USA, Britain, Canada and Australia but have now been undertaken in over 99 countries (Brüggmann et al. 2017).

A study in the USA in 1955 reviewed anxiety in pregnancy, stating the need for emotional support during the first trimester due to worries around pregnancy and birth (Pleshette et al. 1956). A later study in the UK reviewed mothers who became depressed in the postnatal period to determine if those with anxiety before giving birth were more likely to suffer from postnatal depression, but they did not find any relationship. They were assessed at the beginning of the third trimester and at six to eight weeks postnatally they state good test retest reliability and validity at detecting postnatal depression (Pitt 1968).

There has been a gradual change in the studies conducted relating to perinatal mental health. Initial research concentrated on postnatal depression and its negative effect on mother and infant bonding and the detrimental effect on the child. Up to the 1970s and 1980s postnatal depression was thought to be a western phenomenon (Cox and

Holden 2003). Research then turned its attention to factors that might predict which women were at risk of developing postnatal mental health problems (Appleby et al. 1994; Stamp et al. 1996; Cooper and Murray 1997) and assessed interventions aimed at reducing the risk (Alderdice et al. 2013; Lieberman et al. 2014). More recently there has been an acknowledgment of the effects of depression during pregnancy on the growing baby (Grote et al. 2010; Fineberg et al. 2016; Simcock et al. 2017; Wieckowski et al. 2017).

Recognition then turned to other mental health disorders such as anxiety during pregnancy which have also shown to have a negative effect on the baby (Martini et al. 2010; Staneva et al. 2018) and studies reporting that stress and daily hassles have similar outcomes (DeSocio 2019). This has arisen as a new slant on perinatal mental health, even though there was a brief interest in anxiety during pregnancy in 1956 including questions about body image (Pleshette et al. 1956). Recently there has been publicity on the poor mental health of fathers during the postnatal period and an expansion in research to understand this issue. Thus a large amount of research has now been generated around the subject of perinatal mental health and how women can best be supported to reduce the negative consequences not only for the child but the mother, family and society at large (Granville et al. 2016).

1.5   Consequences of poor perinatal mental health

A full review of negative consequences of poor perinatal mental health can be found in chapter two. Mental health difficulties in pregnancy are significant because of the negative impact it has on women, their babies and families. The Confidential Enquiry into Maternal Deaths, 2015 reported mental health problems as the leading cause of death in the perinatal period and stated almost a quarter of women who died between six weeks and one year after pregnancy died from mental health related causes (Knight et al. 2016). Women with severe mental health problems such as schizophrenia have been shown to have obstetric complications such as placental abruption (Jablensky et al. 2005). More recently evidence has shown that stress, anxiety and depression during pregnancy are associated with maternal and child health problems (Talge et al. 2007; Schetter and Tanner 2012). These include short and long term complications for the child, such as increased risk of pre term birth and fetal growth restriction (Jablensky et al. 2005), neurodevelopment impairment during childhood (Muzik and Borovska 2010), attention deficit hyperactivity disorder (ADHD) and conduct disorder (Glover and Barlow 2014).

In addition to the health implications it was recently estimated the cost to UK society of not treating perinatal mental health problems is £8.1 billion per year, with the majority

of this cost incurred in treating the long-term adverse consequences for the child (Bauer et al. 2014). Furthermore an increase in utilisation of antenatal services by women with moderate to severe depression puts pressure on an already stretched National Health Service (NHS) (Grajkowski et al. 2017).

1.6   Prevalence of perinatal mental health problems

Reported rates of mental illness in the general population have increased from below 10%-15% between 2003 and 2015 and are higher in women (16%) (Welsh Government 2016a). In England approximately one in five women experience common mental health disorders and there has been a steady increase (McManus et al. 2016). Between 2007 and 2014 generalised anxiety disorder (GAD), depression, self-harm and phobias rose and women were reported to be twice as likely as men to be diagnosed with anxiety disorders (Mental Health Foundation 2016; Russell 2016).

Rates of mental health problems during the perinatal period vary between 10–30% (Priest et al. 2008; Ayers and Shakespeare 2015; Kingston et al. 2015a; Marcano-Belisario et al. 2016). In Wales of 33,000 women who gave birth in 2015 almost 27% (n=9000) reported mental health problems (Welsh Government 2016a). The most common disorders were anxiety, depression and PTSD (Ayers and Shakespeare 2015). Rallis et al. (2014a) stated that literature for anxiety and depression were far more prevalent in the postnatal period.

Over 14% of women experience a new depressive episode (Gavin et al. 2005) during the perinatal period. Symptoms of depression during pregnancy of 15%-26% (Marcano-Belisario et al. 2016; Truijens et al. 2017) have been reported, peaking at 32 weeks gestation (Evans et al. 2001). A review of longitudinal studies with large cohorts (n=525-8323) produced varied results, but some patterns showed higher depression in pregnancy (17%) than after birth (13%) (Underwood et al. 2016). Results from a US study suggested 33% of postnatal depression begins in pregnancy and 27% in pre-pregnancy (Howard et al. 2017).

A longitudinal cohort study in the UK showed second generation young pregnant women had higher depressive symptoms than their mothers' generation 25 years previously, based on the Edinburgh Postnatal Depression Scale. From the original cohort of 2390 pregnant women only 180 fitted the eligibility criteria for the second cohort, of these some were partners of the women's offspring. High depression symptom scores were observed in the second cohort (RR 1.51, 95% CI 1.15-1.97) when restricted to the 66 mother daughter pairs, maternal antenatal depression was associated with daughter antenatal depression (RR 3.33, 95% CI 1.65-6.67). Limitations were noted of the small sample due to increase in age of first pregnancy,

many of the offspring were not within the inclusion criteria of age 19-24 years at the time. Due to the narrow age range generalisation across age groups could not be shown. The faster pace of modern life, sedentary lifestyle and more mothers working were suggested as the reasons for the increase in depression symptoms (Pearson et al. 2018).

Compared to the general population pregnant women have a higher prevalence of minor depression (17%) but the same prevalence of major depression (6%-10%) (Evans et al. 2001; Ashley et al. 2016; Mental Health Foundation 2016; Welsh Government 2016a). A systematic review of articles (n=24) reported prevalence of anxiety disorders in the perinatal period. General population rates were reported based on the Diagnostic and Statistical Manual of Mental Disorders (DSM) IV (American Psychiatric Association 2013) one year prevalence rates. Panic disorders were similar in the perinatal period (1.3%-2.0%) and general population (1.0%-2.0%). Rates of obsessive compulsive disorder (OCD) were reported to be lower in pregnancy (0.2%-1.2%) than in the postnatal period (2.7%-3.9%), with the general population rate of 2.5%. Generalised anxiety disorder rates were reported in only one study, during the third trimester of pregnancy of 8.5%. Higher than the postnatal period (4.4%-8.2%) and lower than rates in the general population of (3%) (Ross and McLean 2006).

Anxiety covers a range of conditions and may therefore be more difficult to assess. Rates during pregnancy of 15% (Robertson et al. 2004; Fairbrother et al. 2015; Dennis et al. 2017) and between 4.7% and 33% during the postnatal period (Leach et al. 2017), when it is often at its highest (Swalm et al. 2010), have been reported. A large systematic review of self-reported anxiety symptoms revealed rates of 18% in the first trimester, 19% in the second and 24% in the third. Diagnosed rates of anxiety were reported as 18%, 15.2% and 15.4% respectively (Dennis et al. 2017) which matched other studies suggesting anxiety is higher in the first and third trimester (Rallis et al. 2014b). Peaks at these times could be due to early pregnancy worries around miscarrying and physical symptoms such as nausea and in late pregnancy due to physical changes of a growing uterus and concerns around birth and childcare (Rallis et al. 2014b). Pregnancy specific anxiety has been acknowledged and reported to be different from general anxiety, concerns with body image, development of the baby, birth and caring for a newborn, women with this form of anxiety require different support from those with general anxiety (Bayrampour et al. 2016).

1.7 Current recommendations

There is agreement from UK governments about detrimental effects of mental health problems during the perinatal period. In the last few years the governments in Wales,

Scotland and England have pledged money to provide services to improve perinatal mental health care (National Health Service 2015; Scottish Government 2017a; Maternal Mental Health Alliance 2018).

Until recently Northern Ireland was behind in their pledge to support perinatal mental health. All political parties in Northern Ireland have recently agreed to work together to improve access to services (Slainte and Poustie 2017). They have a pathway which suggests a 'five stepped care model', depending on severity of mental health problems. Advice for stress and emotional difficulties using self-care, problem solving and coping strategies at step one through to intensive recovery support at home or in hospital for those with severe mental health conditions. Better services for women with severe perinatal mental health conditions and inpatient services were mentioned briefly (Betts and Thompson 2017).

In Scotland, the mental health strategy report 2017-2027 (Scottish Government 2017a) stated funding would be provided to develop a Managed Clinical Network for perinatal mental health, which was implemented in 2017. Providing a place for professionals and families who have experienced perinatal mental health problems to discuss service provision. The network carried out an assessment of needs which has made recommendations to the Scottish Government and NHS Scotland. These included more mother and baby unit beds, peer support for women with severe mental health problems, specialist perinatal mental health teams (PNMHT) and midwives, access to treatment such as psychological care and digital self-help resources and training for staff working with women in the perinatal period (Scottish Government 2019). Scotland is the only devolved nation to have a perinatal mental health training package aimed at all staff who work in this area. The framework focuses on five areas; health and wellbeing, family support, parent infant relationship, stigma and interventions, with four levels of competence that depend upon the level of support health care practitioners provide.

In February 2016 the National Maternity Review published the policy document *Better Births*, which set out a vision of how maternity services in England should be developed to reduce the rates of stillbirths, neonatal and maternal deaths. Nine recommendations were made, including increasing choice and personalised care for women, continuity of carer and improving access to perinatal mental health services (NHS England 2016). Early adopter sites in seven areas are trialling the new approach to maternity care. A review by the Mental Health Taskforce also recommended at least 30,000 women be provided treatment for their mental health problems by 2021, an increase from the 500 in 2016/17 (Mental Health Taskforce 2016). Acknowledging this

as an important area the National Institute of Health Research recently commissioned a funding call for research relating to perinatal mental health.

The Welsh Government pledged £1.5 million each year from 2015 for five years for the development of specialist perinatal mental health services in Wales (Granville et al. 2016). The National Assembly for Wales, Children, Young People and Education Committee produced a report after hearing evidence given by third sectors, each of the Health Boards, health professionals, professional organisations and mothers with severe mental health problems. They produced 27 recommendations for the Welsh Government, covering inequalities, medication during pregnancy and breastfeeding, support for bereaved parents and specialist perinatal midwives in every Health Board (National Assembly for Wales 2017). Alongside this the All Wales Perinatal Mental Health Steering Group was formed, managed by Public Health Wales, which includes third sector organisations, women with lived experiences and health care professionals, with the aim of developing services.

The All Wales Perinatal Mental Health Steering Group produced guidance for the delivery of perinatal mental health services with seven standards, including informing women about the incidence of perinatal mental health problems, promoting wellbeing, treatment options and training for all staff working with women in the perinatal period (All Wales Perinatal Mental Health Group and Community of Practice 2018). An outline for the training has been developed, based on the Scottish package *Perinatal Mental Health Curricular Framework* (NHS Education for Scotland 2019). All staff providing perinatal mental health services should be appropriately trained to one of three levels, *informed* for all, *skilled* for those in perinatal mental health services and *influencer* if in leadership roles.

As there has not been a specialist mother and baby unit in Wales since 2013 (Bauer et al. 2014) the Welsh Government agreed a budget on 1st October 2017 committed to developing specialist in-patient perinatal mental health support for new mothers and their babies in Wales (National Assembly for Wales 2017). This is reinforced in the document *Together for Mental Health Delivery Plan 2019-2022* (Welsh Government 2019a) which aims to establish a mother and baby unit in Wales in 2021.

1.8   Current provision for perinatal mental health

Clearly at a governmental level there has been an acknowledgment for the need to improve provision and support of perinatal mental health. In practice there appears to be a lack of consensus as to how to detect women with mental health problems that may require this support. The UK, Australia and USA all recommend assessing pregnant women for mental health problems, unlike Canada where this is not endorsed

(Joffres et al. 2013). This reflects a lack of agreement over whether to screen and thus there is no universally accepted tool to detect those with mental health problems (Austin et al. 2008).

During pregnancy women are advised to abstain from drinking alcohol and smoking due to the known and potential harmful effect it can have on their baby and are provided with information about the negative consequences and referred to services for support. Women who experience poor mental health often lack the knowledge and recognition of mental health problems (Khan 2015) either because they think their symptoms are a normal part of pregnancy or they are used to feeling that way (Goodman and Tyer-Viola 2010; Khan 2015) resulting in almost half going undiagnosed (Bauer et al. 2014). Furthermore they go unrecognised by family, friends and health professionals alike and when women recognise there is a problem some are reluctant to ask for help (Hayes 2010; Russell 2016).

There is a need then to screen women to detect those with poor mental health. Individual screening tools to detect symptoms of anxiety and depression will be discussed further in chapter three. In the UK National Institute for Health and Care Excellence (NICE) (2014) recommends screening all women for mental health problems in pregnancy to detect, assess and offer treatment and support.

High acceptability for the use of screening tools to assess depression were found in a systematic review. The majority of the studies used the Edinburgh Postnatal Depression Scale (EPDS), most were administered by health visors and midwives and were assessed in both the antenatal and postnatal periods. They were found to be acceptable both by health care professionals and women in the perinatal period (El-Den et al. 2015). The manner of questioning and support offered is more important than the tool used to ensure disclosure (Kingston et al. 2015a; Darwin et al. 2016) if screening is seen as part of routine care women are more likely to find it acceptable (Kingston et al. 2015a), although often women do not remember being asked about their mental health (Boots Family Trust Alliance 2013; Redshaw and Henderson 2016).

The recommendations include health professionals asking two questions about mental health at all routine antenatal and postnatal appointments (Figure 1.2) (National Institute for Clinical Excellence 2007), however at the time these recommendations were made the screening tool had not been validated (Furber et al. 2009).

> 1) During the past month, have you often been bothered by feeling down, depressed or hopeless?

2) During the past month, have you often been bothered by having little interest or pleasure in doing things?

If a woman responds positively or there is clinical concern, the health professional should consider using the EPDS, a 10 item self-report scale developed by Cox et al. (1987) or the 9-item Patient Health Questionnaire (PHQ-9) to detect symptoms of depression. A score of ≥13 on the EPDS or ≥10 on PHQ should be a trigger for referring the woman to her general practitioner or, if a severe mental health problem is suspected, a mental health professional.

For possible anxiety NICE suggest asking the two item GAD scale (GAD-2):

1) Over the last two weeks, have you been feeling nervous, anxious or on edge?

2) Over the last two weeks, have you not been able to stop or control worrying?

These questions are answered on a scale from 'not at all' =0 to 'nearly every day' =3, and if a woman scores more than three out of a total of six on the GAD-2, the health professional should consider using the GAD-7 scale for further assessment. A score of ≥10 on the GAD-7 should be a trigger for referring the woman to her general practitioner or, if a severe mental health problem is suspected, a mental health professional. If the score is less than three on the GAD-2 but there are still concerns the following question should be asked:

Do you find yourself avoiding places or activities and does this cause you problems?

A positive answer should be followed up using GAD-7 or a referral to the appropriate professional. More recently NICE (2016) recommended women are also asked about their emotional wellbeing at each routine antenatal and postnatal contact.

Women with severe mental health problems may be cared for by specialist PNMHT. In 2016 a report mapped out the NHS Health Boards/Trusts in the UK to show the number who had a PNMHT in place (Maternal Mental Health Alliance 2015). This was repeated in 2017 and showed an increase in services, although the scale of provision varied with only a few services meeting the *Royal College of Psychiatrist Perinatal Quality Network Standards Type 1* (Granville et al. 2016). Around the UK in 2017 PNMHTs were available in one out of five areas in Northern Ireland, seven out of 14 in Scotland, 193 out of 241 England and six out of seven in Wales (Maternal Mental Health Alliance 2017).

Figure 1.2 Questions to ask at each routine appointment.

At all regular contact with a woman in pregnancy and the postnatal period (first year after birth), you should consider asking:

Questions about depression using the Whooley questions:
1) During the past month, have you often been bothered by feeling down, depressed or hopeless?
2) During the past month, have you often been bothered by having little interest or pleasure in doing things?

If a woman responds positively or there are clinical concern, consider:

EPDS or the 9-item PHQ as part of a full assessment or referring the woman to her GP or, if a severe mental health problem is suspected, to a mental health professional

Questions about anxiety using the GAD 2:
1) Over the last 2 weeks, have you been feeling nervous, anxious or on edge?
2) Over the last 2 weeks, have you not been able to stop or control worrying?

If a woman scores less than 3 but, you are still concerned she may have an anxiety disorder, ask the following question:

Do you find yourself avoiding places or activities and does this cause you problems?
If she responds positively:

If a woman scores more than 3 consider:

GAD-7 scale for further assessment or referring the woman to her GP or, if a severe mental health problem is suspected, to a mental health professional

Even though Wales has a good level of services available to women with perinatal mental health problems, a recent report described healthcare professionals being overwhelmed with referrals to these and not enough time to see the women. Over a twelve month period (February 2019-February 2020), the local Health Boards PNMHT received an average of 36 referrals per month, the majority referred during pregnancy (77%) (Personal correspondence, specialist midwives, 2020). Women expressed how important the services were to them but concerned about how long it took to be seen and the variation in provision, suggesting it was a 'postcode' lottery (Witcombe-Hayes et al. 2018, p. 38).

Around one or two women out of every 1000 births develop severe mental health problems after the birth of their baby, such as puerperal psychosis. Some of whom would benefit from specialist support from a mother and baby unit. The availability of these vary and at present Wales and Northern Ireland have no mother and baby units.

Over 90% of women with mental health problems are looked after in primary care (Bauer et al. 2014) often receiving medication from their general practitioner or referral for counselling. As midwives are the main carer for the majority of women in the perinatal period they are ideally placed to provide support and it is within the scope of their practice, set out by the Nursing and Midwifery Council (NMC). Nonetheless assessment of knowledge of perinatal mental health found that health care professionals (Buist et al. 2006; Jomeen et al. 2013), including midwives (Ross-Davie et al. 2006; Jones et al. 2011; Hauck et al. 2015), required further training to understand, assess and provide comprehensive support to women.

A systematic review of systematic reviews found a large gap in the literature regarding interventions by midwives prior to 2010 (Alderdice et al. 2013; Maternal Mental Health Alliance 2017). Future involvement of midwives in the design, implementation and facilitation of these interventions into mainstream midwifery practice, will assist in ensuring women have access to appropriately evaluated and validated interventions (Lavender et al. 2016). Extra training in psychosocial approaches to prevent depression resulted in women building up a relationship with their midwife and enabled them to open up about their mental health problems (Brugha et al. 2016).

Support for women with mild to moderate perinatal mental health problems are recommended in guidance produced by *1000 Lives Improvement* in Wales. Additional support for pregnant women in the form of listening visits or referral to a perinatal mental health specialist is advised. They also suggest all pregnant women should be provided with information about promoting mental wellbeing and preventing mental health problems (All Wales Perinatal Mental Health Group and Community of Practice

2018). The book *Bump, Baby and Beyond*, is given to all women in Wales in the antenatal period and is available as a hard copy or e-book, this provides information describing the changes that occur both physically and mentally during the perinatal period (Public Health Wales 2019). Emotions, stress and depression are noted, both in the antenatal and postnatal period, but not anxiety. Guidance is given on whom to go to if they feel emotionally unwell and a website for further information.

1.9   Thesis overview

Chapter one has provided a brief view of the researcher stating reasons for the chosen topic, background, consequences of poor perinatal mental health and current recommendations and current service provision.

Chapter two reviews the literature on perinatal mental health. Presenting a review of the negative consequences of poor perinatal mental health for the mother, child and wider family. Consideration of the effect of informal support from family and friends as well as women's self-esteem and self-efficacy and their relationship with mental health is provided. An overview of interventions to support women's mental health is followed by a review of women's experiences of poor perinatal mental health problems and the barriers to accessing support. As the main carers, literature was reviewed to assess midwives' experiences of supporting women's mental health at this time. It concludes by providing a rationale for the study.

Chapter three focuses on the design and development of the study, including the justification for data collection and data analysis methods chosen. The main ethical issues are discussed, namely potential psychological distress, consent and confidentiality, followed by an explanation of the process negotiated to obtain these necessary permissions.

Chapter four offers a description of the initial phase of the study, a questionnaire for women in early pregnancy, including the methods, analysis and results.

Chapter five provides an overview of the planning, recruitment and data collection of interviews with women in late pregnancy. This is followed by a discussion of the three themes produced by thematic analysis.

Chapter six reports the midwives' phase of the study, including the recruitment, data collection methods and analysis of questionnaires and focus groups with midwives to assess their knowledge, skills and experiences of supporting women's mental health during the perinatal period.

Chapter seven draws together and discusses the results of the study to provide an overview of the experiences of women during pregnancy and the midwives who provide their care. It concludes by noting limitations of the study, presenting recommendations for practice and future research to improve the care of women with perinatal mental health problems.

1.10 Summary

In summary this chapter provided a brief introduction to the researcher. An overview of textbooks used in midwifery training which suggests supporting women's mental health has always been an important part of a midwife's role although the emphasis was still on postnatal mental health problems. Short and long term consequences of poor perinatal mental health have been seen and indicate the rates of mental health problems are on the rise, with anxiety and depression in pregnancy more common than postnatal depression (Evans et al. 2001; Swalm et al. 2010).

The Scottish, English and Welsh governments have provided financial support to run services for women with perinatal mental health problems, however resources of specialist perinatal mental health services in Wales are still limited, leaving midwives as the main support for the majority of women with mild to moderate mental health problems. This chapter concluded by providing an overview of the thesis chapters.

Chapter two – Literature review

2.1   Introduction

This chapter provides a background to the study and places mothers' and midwives' experiences in the wider context of the literature relating to perinatal mental health. Since there was a vast amount of published literature on the subject of perinatal mental health (Chapter one), several structured reviews were required to inform the study: 1) the negative consequences of poor perinatal mental health; 2) the influence of support networks on women's mental health; 3) the effectiveness of interventions and services designed to reduce symptoms of mental health problems mainly during pregnancy; 4) women's experiences of living with mental health problems during pregnancy; and 5) midwives' experiences of caring for women's mental health.

2.2   Overview of the literature searches

A review of the literature aimed to provide an overview of current knowledge relating to women with mental health problems during the perinatal period. Reference was made to several negative consequences of poor perinatal mental health in chapter one, including suicide, placental abruption, developmental problems for the child and the cost to society. Building on this review, the consequences of mental health problems during pregnancy and after birth for the women, their families, friends and society were explored.

Associations between antenatal and postnatal mental health suggest pregnancy is an important time to provide support and intervene to improve outcomes for mother and baby. Therefore the remaining reviews primarily explored studies relating to pregnancy. Associations between social support, self-efficacy and sociodemographic factors and perinatal mental health have previously been reported (Glazier et al. 2004; Anderson et al. 2006; Fone et al. 2014; Akiki et al. 2016). Literature was therefore examined to understand the strength of the association between mental health, support networks, sociodemographic factors and self-efficacy in women during the perinatal period. Attention was paid to the source of the support to identify which, if any, were most effective. Interventions provided by statutory, private, online and third sector organisations were reviewed to assess their effectiveness among women with mild to moderate mental health problems who are below the acceptance threshold for specialist perinatal support.

In order to understand the challenges faced by women with poor mental health seeking support, literature relating to women's lived experience and interaction with health care professionals assessed the barriers to discussions and accessing support. Literature

considering the midwives' perspective of women's mental health during the perinatal period was required to highlight health professionals' readiness to provide support for this vulnerable population. Existing studies regarding women's and midwives' experiences highlighted gaps in the literature and areas which require further exploration and were used to inform this study.

The databases assessed were chosen depending on the topic. Alongside research articles, current policies and guidelines were examined. The review was undertaken in 2016-2017 and automatic updates set up to capture relevant new studies published after these dates; the most recent being 15th April 2019 (Taka-Eilola et al. 2019). Information on individual search strategies and the tables containing a summary of articles reviewed are presented in the appendices one to five.

2.3   Maternal and infant consequences of poor perinatal mental health

Poor perinatal mental health is significant because of the negative impact it has not only for the child but the woman, family and society (Granville et al. 2016). Postnatal depression has previously been regarded as the main cause of negative outcomes for mother and baby, but recent research indicates mental health problems during pregnancy are an important factor. To understand the extent of the problem a search of the literature was conducted (Appendix 1). A total of 39 articles were identified and reviewed: they originated from Canada (n=3), Australia (n=3), Europe (excluding UK) (n=8), UK (n=11) and USA (n=15).

2.3.1   Poor mental health and adverse maternal effects

The Confidential Enquiry into Maternal Deaths reported adverse mental health as the leading cause of death in the perinatal period, almost a quarter of the deaths were related to mental health. Between 2009 and 2013, 161 women died from mental health related causes during or up to a year after the end of pregnancy; of these 101 women died by suicide. A rate of 3.7 deaths per 100,000 maternities from mental health related causes included 2.3 deaths per 100,000 maternities by suicide in the UK. The reduction in maternal mortality from other causes for example, hypertensive disorders, has not been paralleled by a reduction in deaths from mental health disorders. Although most deaths occurred after birth (99%, n=144) mental health problems often began several weeks or months before women died (Knight et al. 2015).

The majority of research assessing the negative consequence of poor mental health focuses on anxiety and depression. Some studies suggest women with severe mental health problems such as schizophrenia, bipolar disorder and major depression have a

significantly higher chance of obstetric complications. A case control study in Australia extracted data for all women with major affective disorders (n=3174) during a 12 year period. The control sample comprised data from the records of women (n=3129) without mental health problems, randomly selected from those who had given birth during the same period. Women with schizophrenia were significantly more likely to have a placental abruption (aOR 3.17, 95% CI 1.55-6.49), or placenta praevia (aOR 2.13, 95% CI 1.15-3.94), which may account for the higher rates of antepartum haemorrhage (OR 1.60, 95% CI 1.11-2.32) found in women with bipolar disorder (Jablensky et al. 2005).

Mode of birth especially in relation to a fear of childbirth has been the focus of many studies. Associations between depressive symptoms in the third trimester and giving birth by caesarean section (aOR 2.04, 95% CI 1.26-3.29) have been reported (study details above) (Jablensky et al. 2005). In another study women (n=509) assessed as having pregnancy specific anxiety or fear of childbirth were more likely to report a negative experience of birth (aOR 1.7, 95% CI 1.01-2.9, $p<0.05$), show a preference for an elective caesarean section (aOR 3.3, 95% CI 1.6-6.8, $p<0.001$) and were more likely to receive an elective caesarean section (aOR 5.4, 95% CI 2.1-14.2, $p<0.001$). In addition women with pregnancy specific anxiety reported increased levels of labour pain ($p<0.009$) and a higher proportion of women (aOR 1.8, 95% CI 1.1-3.2, $p<0.05$) received epidural analgesia during labour (Haines et al. 2012). Secondary analysis on a longitudinal study in Norway, of 1789 pregnant women who completed three self-administered questionnaires were completed at 17 and 32 weeks gestation and eight weeks after birth was conducted. Previous negative birth experience (aOR 7.6, 95% CI 3.8-15.2, $p=0.001$), anxiety and depression combined (aOR 6.1, 95% CI 3.3-11.2, $p=0.001$) and poor social support (aOR 3.8, 95% CI 1.9-7.6, $p=0.001$) were significant predictors for fear of childbirth. Previous negative birth experience was highly predictive of elective caesarean section (aOR 8.1, 95% CI 3.9-16.7). Even though rates of caesarean section among women with a fear of childbirth vary, they express a strong preference for an elective caesarean section (aOR 4.6, 95% CI 2.9-7.3) the majority (87%, n=117) of women with a fear of childbirth (n=134) did not receive a caesarean section (Storksen et al. 2015). Caesarean section as with all major operations has risks, such as increased chance of haemorrhage, infection, deep vein thrombosis, long term adhesions causing pain and higher chance of repeated caesarean section (D'Souza 2013). Balancing the physical risks with mental benefits of a caesarean requires consideration of individual circumstances.

In addition to elective caesarean section, a significant increase in emergency caesarean section was observed in secondary analysis of a longitudinal pregnancy

cohort of 2825 women. Questionnaires were completed at <25 weeks and 34-36 weeks gestation and one four months after birth. Symptoms of depression in the third trimester (6.5%, n=185) were independent predictors of emergency caesarean section (aOR 2.04, 95% CI 1.26-3.29, $p\leq0.05$). Other predictors were ≥35 years of age, non-white, previous caesarean, obesity and hospital site. No association was found between depression and elective caesarean section or assisted vaginal births (Bayrampour et al. 2015). Conversely a between group comparison of 424 women who completed a survey at 32 weeks gestation, indicated no difference in the rate of women undergoing an emergency or elective caesarean section and the level of fear of childbirth (Johnson and Slade 2002). Similarly a study of 1697 women in their third trimester of pregnancy completed a survey, of these 264 had symptoms of depression. No statistical difference between caesarean section or assisted vaginal birth and depressive symptoms were identified, only age ≥35 was statistically associated with the risk for caesarean section (OR 1.07, CI 1.04-1.10) (Wu et al. 2002). Another study of 142 women who completed surveys in all three trimesters and six weeks after birth, found no statistically significant association between anxiety at any stage of pregnancy and birth by caesarean section (Kirby 2015). It is not known if the type or cause of fear experienced by women influenced the results. A meta-synthesis described several causes for fear of childbirth such as the fear of the unknown, pain, damage to themselves or their baby, ability to give birth and lack of control (Sheen and Slade 2018).

A relationship between antenatal anxiety and intensity of labour pain has been found. In a study 35 women completed questionnaires about anxiety and self-efficacy in late pregnancy. Higher anxiety levels were significantly related to higher levels of labour pain (p=0.05) and unexpectedly to greater cervical dilatation (p=0.03) on admission. This may be due to the small sample size as only 21 women were admitted in spontaneous labour. Women with higher anxiety reported less confidence in their abilities to perform relaxation techniques and high level of pain in labour and birth (Beebe et al. 2007).

Symptoms of depression have been linked to physical health status. A study of pregnant women (n=1163) from a low socioeconomic black community consented to structured interviews, 51.9% (n=599) in the first trimester, 36.6% (n=422) in the second trimester and 11.5% (n=133) in the third trimester. Women with symptoms of depression (44.4%, n=516) were more likely to report their health as fair or poor compared to those without symptoms of depression. A significant reduction in the ability to climb stairs (aOR 1.95, 95% CI 1.46-2.60) and undertake moderate activities (aOR 1.74, 95% CI 1.30-2.32) was reported by women with symptoms of depression

compared to women without symptoms of depression. Reference was made to the correlation between poor health and depression with each one being the possible cause (Orr et al. 2007). Some women (11.5%, n=133) were recruited in the third trimester of pregnancy where these activities may have been more difficult, although this was adjusted for in the analysis along with smoking and age.

An association between continued smoking in pregnancy and depression (OR 2.02, 95% CI 1.50-2.17) and low education level (OR 4.46, 95% CI 2.27-7.32) was reported in a study of 4295 women from 15 countries who completed a questionnaire (Smedberg et al. 2015). Smoking itself is linked to a number of negative health conditions. A link between severe mental health disorders and smoking has also been reported. Data from the National Survey on Drug Use and Health in the USA compared women (n=8513) with and without depression who smoked in pregnancy. A higher proportion of women with major depression (aOR 2.50, CI 1.85-3.40) smoked compared to women without depression. Smoking increased during pregnancy in women with depression p=0.02 whereas there was a downward trend, although it did not reach statistical significance in women without depression (Goodwin et al. 2017). Reducing depressive symptoms alongside smoking cessation may increase the chance of stopping or reducing smoking, improving the health of mother and baby. Although socioeconomic circumstances may also contribute to rates of depression and smoking.

Less explored areas include reported changes in the immune system of women with mental health problems. In a study of 454 women in early pregnancy, the 224 (49%) women positive to bacterial vaginosis had significantly higher levels of chronic stress than those without (p<0.01) the infection, even after accounting for sociodemographic and behavioural risk factors. Moderate-stress and high-stress groups were 2.3 times (95% CI 1.2-4.3) and 2.2 times (95% CI 1.1-4.2) more likely to have bacterial vaginosis than women in the low-stress group (Culhane et al. 2001). The duration of time women had endured stress was not reported. Complications of bacterial vaginosis are an increased risk of developing sexually transmitted diseases such as chlamydia, both of which increase the chance of premature labour and premature rupture of membranes (NHS Direct Wales 2019).

Antenatal anxiety and depression are often precursors of postnatal mental illness. Pregnancy related anxiety concerning child health increased the likelihood of postnatal anxiety (p<0.05) in 345 pregnant women in a low-income ethnically diverse population (Blackmore et al. 2016). In addition a study of 992 mother-child dyads in a longitudinal study were assessed for self-perceived distress, and diagnosed anxiety based on DSM-IV in pregnancy. Women with anxiety but low self-perceived distress (n=177) had

a high risk of depression after birth (OR 2.1, 95% CI 1.4-3.2, *p*=0.001) compared to women without these conditions. This risk was increased (OR 4.8, 95% CI 2.1-11.2, *p*<0.001) in women if both anxiety and self-perceived distress (n=31) were present in the antenatal period (Martini et al. 2010). Likewise, a large study in Australia recruited women (n=35,374) at routine antenatal appointments and followed them up six weeks after birth. Of these 8.9% (n=3144) had an EPDS of >12 indicating antenatal depressive symptoms. Out of 12,034 women who completed the postnatal follow up, 925 (7.5%) had symptoms of depression. Significant predictors of postnatal depression were antenatal emotional problems (aOR 1.39, 95% CI 1.12-1.73, *p*<0.01), EPDS >12 (aOR 1.18, 95% CI 1.15-1.21, *p*<0.001) and previous mental health problems (aOR 1.70, 95% CI 1.39-2.07, *p*<0.001) (Milgrom et al. 2008).

2.3.2 Effects of poor mental health on the fetus

Many of the long-term negative consequences for the child were originally thought to stem from postnatal mental health problems such as poor mother and infant bonding. Although true, it is now recognised a combination of genetic predisposition, antenatal stresses and stresses after birth from environmental and life experiences can increase the chance of mental health disorders in childhood and later life (DeSocio 2019). Of these, the antenatal period is thought by some to have the most important impact, when the majority of neurodevelopmental processes take place, and maternal mental health problems during this time are thought to alter the developmental process (Kinsella and Monk 2009; Glover 2014; Janssen et al. 2016; Londono Tobon et al. 2016).

It has long been known that drugs, viruses and alcohol pass into the placenta and have a detrimental effect on the fetus even if the exact physiology is unknown. The hypothalamic-pituitary-adrenal axis and cortisol production have also been implicated in fetal changes due to mental health problems. In the past two decades new areas of research into fetal programming, referring to changes in the environment *in utero,* during specific critical periods and epigenetics have been posed as possible causes of these long-term effects on the child (Glover 2014; Janssen et al. 2016). Emotional and behavioural problems (O'Connor et al. 2002) and attention deficit hyperactivity disorder and conduct disorder (Glover 2014) have been associated with epigenetics and fetal programming. In contrast, it has been suggested a certain amount of anxiety or stress are helpful. Stress is essential for normal development of major organs such as the brain (Gunning et al. 2010) and is required when faced with life threatening experiences.

2.3.3 Maternal mental health and the outcome for the baby and child

A significant amount of research has linked depression in pregnancy and an increased risk of intrauterine growth restriction and preterm births, which are major causes of morbidity and mortality in infants and children. A meta-analysis of 29 articles found a significant association between antenatal depression and preterm birth (RR 1.13, 95% CI 1.06-1.21) and low birth weight (RR 1.18, 95% CI 1.07-1.30), but no significant association with intrauterine growth restriction. Some of the differences in the strength of associations between antenatal depression and low birth weight in developing countries (RR 2.05, 95% CI 1.43-2.93) compared to the USA (RR 1.10, 95% CI 1.01-1.21) and European countries (RR 1.16, 95% CI 0.92-1.47) could be explained by socioeconomic status (Grote et al. 2010). Key limitations were noted with factors such as health care provision and lifestyle not considered.

Of note are studies reporting the use of antipsychotics and antidepressants which could account for some of the above findings. Results from a study of 2793 pregnant women, 300 of whom were taking these medications, found outcomes depended on the type and duration of medication. Women taking benzodiazepines, such as lorazepam during pregnancy (n=85) were significantly more likely to have a preterm birth ($p<0.001$) and give birth to a low birth weight (<2500g) baby ($p=0.001$) but no association was found with small for gestational age. Women taking selective serotonin reuptake inhibitor medication (antidepressant) (n=138) were significantly more likely to give birth to a low birth weight baby but only when medication was commenced in the second or third trimester ($p=0.015$) (Calderon-Margalit et al. 2009). Analysis was adjusted for smoking but not over the counter or illegal drugs or compliance with medication.

A recent study in Australia of 285 pregnant women with symptoms of anxiety and depression found no statistically significant association with preterm birth. Women were excluded if they had experienced severe suicidal ideation; it was not known how many this accounted for. Furthermore depression was assessed on the EPDS at a cut off of 11, lower than the recommended level of 12/13 (Murray and Cox 1990), resulting in 5.4% (n=45) of women with symptoms of depression. Limitations were noted with only 5% preterm births which may have been inadequate statistical power to detect significant associations (Staneva et al. 2018).

There is a known association between poor maternal mental health and mental health problems for the child and into adulthood. A study in Germany with mother and child pairs (n=992) reported maternal lifetime anxiety disorders was associated with child anxiety disorders such as phobias, generalised anxiety and OCD (OR 1.4, 95% CI 1.1-

1.9). High self-perceived distress during pregnancy was not associated with child anxiety disorders, but was associated with preterm birth (OR 3.4, 95% CI 1.5-7.9), lower APGAR scores at birth, (OR 2.8, 95% CI 0.9-7.9, *p*=0.054), conduct disorder (OR 5.0, 95% CI 1.2-21.3), and attention deficit hyperactivity disorder (OR 4.7, 95% CI 2.2-10.0) (Martini et al. 2010). The authors suggest interactions between mother and baby after birth may influence and partially explain the psychological problems of the child. Maternal daily stress during pregnancy has been linked to negative outcome in their children. In a case control study, children from a large birth cohort indicated maternal daily stresses in pregnancy were linked to a significant increase in schizophrenia spectrum disorders in male children (n=95) (aOR 1.995, 95% CI 1.061-3.750, *p*=0.032) compared to offspring without schizophrenia spectrum disorders (n=206) (Fineberg et al. 2016). Suggested reasons were a link between male fetus and elevated maternal cortisol crossing the placenta. A large cohort study in Finland followed mother children dyads (n=10521) for over 40 years. Children of women with antenatal depression (n=1462) had an elevated risk for depression (aOR 1.5, 95% CI 1.03-2.2) compared with children of women without antenatal depression. Children of mothers who had antenatal depression and one parent with a severe mental disorder had an elevated risk (aOR 3.3, 95% CI 1.8-6.2) of developing severe depression or schizophrenia compared to children of mothers with only antenatal depression (aOR 1.2, 95% CI 0.8-1.9) or severe mental illness (aOR 1.5, 95% CI 0.96-2.4) (Taka-Eilola et al. 2019). Paternal implications were inferred and a cumulative effect of poor mental health and severity played a part in the outcomes for children.

Emotional and conduct disorders have been linked to mental health problems. A longitudinal study of mothers (n=6996) with self-reported anxiety and depression completed a postal survey at 32 weeks gestation. A significant increase in emotional and behavioural problems of children at 47 and 81 months of age were found. Higher rates were found at 81 months in boys (OR 2.16, 95% CI 1.26-2.89) compared to girls (OR 1.91, 95% CI 1.41-3.30). Rates were similar at 47 months of age suggesting a persistent effect (O'Connor et al. 2003). Autism has also been linked to maternal mental health problems. A retrospective cohort study of discharge records (8,951,763) indicated mothers with chronic depression had the highest relative risk of having a child develop autism compared to those with other psychiatric conditions (aRR 2.75, 95% CI 1.38-5.51). Women were twice as likely to have a child with autism if they had diagnosed mood disorder, anxiety or schizophrenia (RR 1.97, 95% CI 1.83-2.12) compared with women without these conditions (Wieckowski et al. 2017).

When assessing the long term effects of maternal mental health problems it is difficult to evaluate if the negative consequences were the result of genetic deposition,

problems during pregnancy, after birth or a combination. A random sample of women (n=171) from low socioeconomic communities was assessed for antenatal and postnatal depression in pregnancy. Interviews were conducted with women between the second and third trimester and at three and 12 months after birth. The study concluded the outcome for children of mothers who were depressed depended on whether depression occurred before or after birth. Of the 150 women surveyed three months after birth, 121 children were assessed for emotional and conduct disorders and IQ at 11 and 16 years of age. Postnatal depression significantly affected the IQ especially in boys ($p<0.001$) and was predicted by the extent of maternal depression after three months of age. However the complexity of assessing the timescale of depression in such small numbers requires larger studies (Hay et al. 2008).

Postnatal mental health problems have been associated with poor mother infant bonding after birth. A large amount of research relating to mother infant bonding has been conducted. Bonding usually begins in pregnancy but most research focuses on bonding after birth. In one study 101 healthy mother infant dyads were assessed for postnatal depression and bonding. Depression symptoms four months after birth correlated with bonding at two ($r =0.28$), six ($r =0.39$), sixteen weeks ($r =0.35$) and fourteen months ($r =0.28$) after birth (Moehler et al. 2006). A survey of 79 mothers, 50 of whom had symptoms of depression at four weeks postnatal, completed depression and bonding questionnaires at three time points. There was a significant inverse association between symptoms of depression at four weeks and bonding score at one-four weeks ($p<0.01$), nine weeks ($p<0.05$) and at one year after birth ($p<0.05$). In a logistic regression model only the early bonding scores, not the low depression scores, predicted bonding at one year ($p<0.01$) (O'Higgins et al. 2013).

Detrimental lifestyle factors can affect the child's long term physical and emotional wellbeing. Parental mental health problems have been identified as one of the Adverse Childhood Events (ACE) acknowledged and identified by health visitors. Children who experience four or more ACEs are six times more likely to be smokers, which in turn leads to physical ill health later in life. They are also six times more likely to receive treatment for mental health problems themselves and are at increased risks of the other ACEs therefore possibly continuing a cycle of adverse conditions (Di Lemma et al. 2019).

2.3.4 Maternal mental health and the effect on the family and society

Family can also be adversely affected by their loved ones' mental health problems. The negative effects of postnatal depression have been reported for decades. A small study of women with postnatal depression (n=60), 56 with severe depression and four with

minor depression was conducted. Surveys were completed by their partners (n=23), siblings (n=2), parents (n=2) and grandparent (n=1). Issues such as loss of work, leading to financial concerns and worrying about their partner resulted in stress which in turn put pressure on their relationship (Boath et al. 1998). Another survey in Finland consisting of 373 mothers and 314 fathers, reported poor dynamics between the couples where mothers had EPDS of ≥13 (13%) after birth. Women with depression had poorer family dynamics than non-depressed women ($p<0.001$) (Tammentie et al. 2004).

As well as the adverse physical and mental health consequences of poor mental health for the mother, child and family, an increase in utilisation of antenatal services by women with moderate to severe depression puts pressure on an already stretched NHS. Data relating to 200 women with symptoms of depression were matched with data from women without symptoms of depression during the same timeframe. High use of services was defined as four or more unscheduled visits during pregnancy or the first eight weeks after birth. Women with symptoms of depression were significantly more likely to use services compared to those without symptoms (aOR 1.12, 95% CI 1.53-3.90). They were also more likely to have a history of depression ($p<0.001$), anxiety ($p<0.001$) or other mental health disorder ($p=0.001$) and smoke ($p=0.022$) compared to women who did not smoke (Grajkowski et al. 2017). Higher use of services in the postnatal period has also been recognised. Women (n=594) completed a postal survey at one, four and eight weeks after birth, those with symptoms of depression had a significantly higher number of contacts with their general practitioner at one month ($p=0.004$) and two months ($p=0.01$), public health nurses at one month ($p=0.001$) and two months ($p=0.002$) and walk in clinics at two months ($p=0.008$). General health ($p=0.03$), pain ($p<0.001$), and physical function ($p=0.01$) were also significantly lower in women with symptoms of depression compared to those without symptoms (Dennis 2004). To discover whether it is the physical or mental health problems which cause high service utilisation requires further investigation.

2.3.5 Summary

A review of the literature concerning the negative consequences of poor maternal mental health was conducted to assess the impact on mother, child, family and society. Severe mental health disorders undoubtedly have a major impact on the woman, family and child but the majority of research reports on the more prevalent conditions of anxiety and depression both before and after birth.

Evidence points to pregnancy being a critical time in the perinatal period where poor mental health is associated with a negative impact on the mother and baby in utero.

Antenatal mental health problems have been associated with obstetric complications and an increase in caesarean section for birth, a higher rate of epidural and more painful labour. Counselling was important to reduce the negative birth experience of women with fear of childbirth. More importantly antenatal mental health problems are often precursors of postnatal illness. A growing understanding of the impact of antenatal mental health on the fetus has led to research studies examining the physiology behind these interactions. Inconsistent findings have arisen from research relating to premature birth, low birth weight and poor mental health. Poor physical health and unhealthy lifestyle choices have also been reported in conjunction with mental health problems. These interact with socioeconomic and environmental factors which in themselves could be the course of the negative consequences and therefore make it difficult to tease out actual cause and effect.

Long term effects for the child have been reported including autism, schizophrenia and more commonly, emotional and conduct disorders. It is unclear if the link is between antenatal or postnatal mental health problems, parenting, environment or genetic factors or a combination of these. A wealth of research has also linked these conditions to postnatal depression and the lack of mother infant interactions.

The consequences of poor mental health on the family, during pregnancy or after birth often led to strain between partners. There have also been suggestions that women with mental health problems are more likely to use services in the antenatal and postnatal periods, costing the health service time and money. Whether this is due primarily to their mental health or other coexisting health conditions again is unclear.

2.4   Support network, self-efficacy and women's mental health

High social cohesion (a measure of how closely knit communities are) has a positive impact on those with poor mental health living in deprived neighbourhoods (Fone et al. 2014). This is particularly important as the incidence of perinatal mental health disorders are highest in populations under severe socioeconomic stress (Glazier et al. 2004; Anderson et al. 2006; Fone et al. 2014) and often the hardest to reach and least likely to benefit from specialised services. In order to understand elements which may influence women's mental health during the antenatal period and possible protective factors, a systematic search was performed (Appendix 2). A total of 14 articles were identified and reviewed: they originated from Canada (n=6), USA (n=3), Australia (n=2), UK (n=2) and Iceland (n=1).

2.4.1 Social support for women with mental health problems

Several studies have explored correlations between mental health problems and social support in pregnancy. A study recruited 150 low-income pregnant women to compare social support and avoidant coping against mood. Avoidant coping was significantly related to low social support ($p<0.01$) after adjusting for socioeconomic status and planned pregnancy. Avoidant coping contributed to 15% variance in symptoms of depression (Rudnicki et al. 2001). Avoidant coping is one of the negative coping strategies which are found in relation to depression. It involves avoiding situations rather than taking action to overcome them. Another coping strategy is rumination or repetitively thinking the same thoughts which are often negative. A study with pregnant women found those with symptoms of depression (n=21) showed perceived lack of social support ($p=0.03$) along with positive beliefs about rumination ($p=0.002$) were significant independent predictors of depression (Isa Alfaraj et al. 2009). Both negative coping strategies predicted depression to a greater degree than social support and require further research on interventions to reduce these negative trends.

Pregnant women (n=119) with symptoms of depression were assessed against several screening tools for general health, stress, social support and relationships. Women with and without symptoms of depression had similar demographic characteristics of age, parity, years of education, employment and occupational status. There was less satisfaction with support ($p<0.01$) and a greater need for support ($p<0.01$) amongst women with symptoms of depression, possibly explained by women reporting fewer support networks ($p<0.01$). Amongst women with symptoms of depression, 49% had lived in Canada for less than five years, compared with 29.5% of women without symptoms of depression ($p<0.05$) (Zelkowitz et al. 2004). This could partly explain the lack of support networks and although a small study, indicates the need to improve social cohesion as a means of supporting mental health. Conversely, a large Canadian study of 5162 pregnant women from four maternity hospitals reported women born in Canada were more likely to suffer from antenatal depression when lacking social support (OR 4.14, 95% CI 2.69-6.37), whereas a lack of money for basic needs was associated with antenatal depression in immigrant women (OR 2.98, 95% CI 2.06-4.32) (Miszkurka et al. 2012). A convenience sample of women recruited in late pregnancy or soon after the birth of their baby (n=177) reported both a reduction in state (r =-0.308, $p<0.001$) and trait (r =-0.420, $p<0.001$) anxiety with higher levels of social support during pregnancy (Aktan 2012). Acknowledging associations are not the same as causality, which are often multifaceted. For example, an absence of support networks could be the cause of poor mental health or conversely the poor mental health led to the lack of networks.

A large cohort of 5271 pregnant women in Canada reported an association between higher anxiety and women's first language other than French, higher medical risk, lower control, higher stress, lower self-esteem and more social support. The last factor was noted to be contrary to other studies. These included two groups of women, Canadian born French speakers who generally had higher income and were employed, as opposed to immigrants who were less likely to speak French, be unemployed and have low-income. Analysis was conducted for the whole cohort rather than between group analysis, which could explain findings which contradicted previous studies. Furthermore confounding factors such as ethnicity which have previously been associated with anxiety, were not accounted for and could explain some of the results (Schetter and Tanner 2012).

2.4.2 Social support from partners, family and friends

Several studies assessed support from different groups such as partners, friends and family. An Australian study recruited women in early pregnancy into a national postnatal depression program (n=1578) and found having supportive partners reduced symptoms of depression. Associations were found between depression symptoms and medical problems during the current pregnancy (OR 1.75, $p<0.05$), previous mental health problems (OR 5.482, $p<0.001$) and major life events (OR 3.411, $p<0.001$). Symptoms of depression were lower in women who were single or unpartnered than those with unsupportive partners ($p<0.001$), indicating the importance of checking the quality of relationship with partners (Bilszta et al. 2008). A longitudinal study exploring the predictors of mental and physical quality of life recruited women (n=473) at 36 weeks gestation. Results indicated social support during pregnancy had a significant relationship with mental health (OR 0.32, 95% CI 0.02-0.58, $p<0.05$) (Emmanuel et al. 2012). Similarly a survey of low-income pregnant women (n=25) recruited in early pregnancy found greater psychological wellbeing was related to stronger attachment to the woman's husband/partner ($p<0.01$), greater functional social support ($p<0.05$) and greater tangible support ($p<0.01$) (Zachariah 2009). In contrast women in early pregnancy (n=2052) were recruited to assess the effects of stress, socioeconomic status and social support on their emotional distress (anxiety and depression). Social support from friends and family showed a negative relationship with distress ($p<0.05$) and partner conflict showed a positive relationship with distress ($p<0.05$). Socioeconomic, stress and social support together explained 97% of the observed variance of distress (Glazier et al. 2004). Another study conducted structured interviews with 562 women at their booking clinic and compared two groups of women, one with (n=360) and the other without (n=202) symptoms of distress. Dissatisfaction with partner relationships and division of household tasks, lower education and unemployment were all significantly ($p<0.001$) associated with the likelihood of

screening positive for perinatal distress. The strongest influence was partner relationship (aOR 4.59, 95% CI 2.22-9.95) (Jonsdottir et al. 2017).

2.4.3 Self-efficacy, self-esteem and mental health

There is known to be a positive association between social support and cognitive and emotional states such as self-esteem and self-efficacy, which in turn influences physical and psychological health (Cohen 1988; Berkman et al 2000). Self-esteem relates to feelings of 'being valued' and self-efficacy is related to the extent to which individuals believe they can overcome challenges. These two are linked; feeling valued improves individual confidence and ability and being confident can contribute to a feeling of being valued (Ackerman 2020).

Self-esteem has been defined as the extent to which an individual values or respects themselves (Mruk 2013). This often reflects perception rather than reality and can relate to how an individual perceives they are viewed. Feelings of esteem are thought to help people adapt to stressful life events and prevent depression (Cohen 1988; Mruk 2013).

Self-efficacy is an individual's belief in their ability to complete a specific goal or task (Gallagher 2012; Maddux and Kleiman 2016) and has been described as temporary rather than a personal trait (Gallagher 2012). Low self-efficacy can lead to avoiding situations which an individual perceives they cannot control, dwelling on a lack of ability and focusing on events which may not happen, leading to an increase in distress (Bandura 1996; Ackerman 2020). Whereas, people with high self-efficacy have more confidence in themselves and see tasks as challenges to achieve (Maddux and Kleiman 2016), they are more likely to succeed and to overcome and recover from failure (Ackerman 2020). This may explain the association with reduced rates of developing depression and anxiety (Gallagher 2012; Ackerman 2020), with challenges seen as a test of their ability and a chance to improve rather than a source of stress and avoidance (Gallagher 2012).

When undertaking the review of the literature, efforts were made to identify studies linking self-efficacy and self-esteem with poor mental health in the perinatal period, but only studies related to self-esteem were identified. A large telephone survey of Canadian women (n=1992), completed in the second trimester of pregnancy, found social support from family ($p<0.05$), support from partner ($p<0.001$), high self-esteem ($p<0.001$) and higher mastery ($p<0.001$) predicted fewer symptoms of anxiety (Akiki et al. 2016). Self-esteem had a greater influence on antenatal stress and depression symptoms than social support in a study with low-income women (n=318) in the USA. Satisfaction with social support and self-esteem significantly predicted depressive

symptoms when controlling for antepartum stress (95% CI -0.318-0.072; 95% CI -0.343-0.144) (Jesse et al. 2014). A study in the UK differentiated between domains of self-esteem. Self-reported questionnaires completed by 129 pregnant women found lower personal self-esteem was a significant predictor of anxiety (p=0.01), but not lower general (p=0.88) or social (p=0.09) self-esteem. Similar results were found with lower personal self-esteem (p=0.001) being a significant predictor of depression but not lower general (p=0.80) or social (p=0.17) self-esteem (Jomeen and Martin 2005).

2.4.4 Summary

Low social support was shown to be significantly associated with anxiety and depression in several studies. Exceptions were one study where symptoms of depression were associated with a lack of basic needs rather than a lack of social support in a group of immigrant women. Women with unsupportive partners were shown to be significantly more likely to have elevated symptoms of depression than single women, indicating the need to detect troubled relationships during pregnancy. Self-esteem was considered a greater protective factor than social support in relation to depression, anxiety and stress. In addition personal self-esteem was significantly more important than social or general self-esteem in supporting mental health.

2.5 Interventions and services to support women's mental health

Due to the negative impact of poor perinatal mental health, interventions are required to reduce the negative consequences to mother, baby, family and society. Women with pre-existing or severe mental health problems often have a team of specialists caring for them when they become pregnant and therefore support which they can access. For women with mild to moderate perinatal mental health problems support is provided mainly via their general practitioner in the form of medication or referral for psychotherapies such as cognitive behavioural therapy, as recommended by NICE (2014). However, the Lancet series concluded there was little research relating to the success of interventions for perinatal non-psychotic mental health disorders, apart from those related to postnatal depression (Stein et al. 2014).

To understand the effectiveness of options available to support women's mental health, particularly during pregnancy, a systematic search of articles assessing the impact of interventions was conducted (Appendix 3). A total of 47 articles were identified and reviewed: they originated from USA (n=24), UK and Ireland (n=10), Australia (n=9) and Canada (n=4). Due to the number of articles retrieved (n=47), a brief reference only is provided for pilot and feasibility studies, and effectiveness studies where no statistically significant results were found.

2.5.1 Psychological interventions

Psychotherapy is recommended by NICE (2014) as a treatment for perinatal mental health problems, using current treatment manuals which provide details for content and duration depending on the condition being treated. NICE (2014) suggest two levels of intervention: low intensity led by a trained facilitator including the use of self-help materials or high intensity face-to-face interventions led by a qualified therapist, such as cognitive behavioural therapy (CBT).

In several pilot studies CBT focuses on changing maladaptive patterns of thinking and behaviour and has shown some positive results when used in the antenatal period to reduce depression (Burns et al. 2013; Kim et al. 2014; Green et al. 2015; Milgrom et al. 2015). A brief CBT intervention with women (n=34) who were pregnant or up to nine months after birth with depression was assessed. The intervention over one week included daily two hour group sessions of CBT, psychoeducation and topic discussions. Analysis showed a significant reduction in symptoms of depression ($p<0.001$) between pre to post intervention (Van Lieshout et al. 2017). Another randomised controlled trial (RCT) of pre and post intervention measure was designed to assess if a CBT intervention reduced depression. Pregnant women with EPDS of four to nine were classed as low risk and EPDS ≥10 high risk of depression. Women were randomly assigned to a six week, culturally tailored CBT intervention (n=72) including take home information and music to relieve stress, versus treatment as usual which comprised antenatal checks and education classes (n=74). Interviews were conducted at baseline, post intervention and one month follow up. Only 39 women in the intervention group completed the follow up interview. Between group comparison of high risk (EPDS ≥10) group indicated a significant reduction in symptoms of depression in the CBT ($p<0.001$) compared to treatment as usual group from baseline to follow up. Women with mild symptoms (EPDS 4-9) had a significant reduction in symptoms ($p=0.04$) from baseline to follow up in the CBT group. Women with moderate depressive symptoms did not see a significant decrease in symptoms, apart from African American women where there was a significant reduction in the depression scores in those receiving CBT (n=43) from baseline to completion of the intervention ($p=0.02$) and baseline to follow up one month later ($p=0.04$) (Jesse et al. 2015). In contrast a pilot of six individual CBT sessions lasting 10 minutes provided by an obstetrician (McGregor et al. 2014) and a three week self-guided CBT internet intervention (Loughnan et al. 2019) reported no significant decrease in depression scores. All studies with CBT showed good acceptance rates by the women.

Other forms of psychotherapy have been assessed. Several pilot studies of pregnant women showed significant reduction in stress (Matvienko-Sikar and Dockray 2017) and

depression (Dornelas et al. 2010; Brandon et al. 2012; Lenze et al. 2015; Lenze and Potts 2017). A RCT assessed Behavioural Activation as a treatment for depression in pregnant women (n=86) in comparison to treatment as usual (n=77). Sessions were flexible to accommodate women's preferences and delivered by phone, at the clinic or in the women's homes. The intervention group showed significant improvement in symptoms of depression (p=0.04), anxiety (p=0.014) and stress (p=0.002) at three months postpartum (Dimidjian et al. 2017). Similarly a group of low-income pregnant women with symptoms of depression was assigned to either eight sessions of a brief interpersonal psychotherapy (n=83) or enhanced treatment as usual (n=85). Both groups showed a decrease in symptoms but there was a significant difference in the reduction of depression (p=0.02) and anxiety (p=0.05) symptoms at follow up in the intervention group. There was no control group to compare the intervention against, enhanced care as usual provided extra support for women with mental health problems which could explain the decrease in depression symptoms in this group (Grote et al. 2015). A brief interpersonal psychotherapy intervention (n=25) was compared to enhanced usual care (n=28) amongst low-income pregnant women. Significant reductions in depression symptoms prior to birth compared to the usual care (p<0.003) were reported. At three months post intervention none of the women had symptoms of depression in the intervention group, compared to 70% of women in the usual care group (p<0.005) three months post intervention (Grote et al. 2009). Acceptability of CBT interventions was reported in two pilot studies (Dornelas et al. 2010; Lenze et al. 2015).

Attempts to treat anxiety and depression with psychological therapies have been around for decades, however mindfulness is a relatively new therapy based on meditation techniques. Pilot studies assessing feasibility and acceptability of group mindfulness interventions for women with symptoms of stress, anxiety or depression in pregnancy were identified. Overall the studies found a significant reduction in anxiety (Vieten and Astin 2008; Dunn et al. 2012; Byrne et al. 2014; Goodman et al. 2014; Guardino et al. 2014; Woolhouse et al. 2014), some reduction in stress felt by women (Dunn et al. 2012; Guardino et al. 2014; Beattie et al. 2017) and depression (Dunn et al. 2012; Goodman et al. 2014). Conversely Beattie et al. (2017) concluded there was no significant reduction in anxiety or depression. Acceptability was reported by the women and feasibility confirmed; however one study reported a high dropout rate (Dunn et al. 2012) and another required a degree of self-directed home study which was not well adhered to (Byrne et al. 2014).

2.5.2 Interventions focused on antenatal education and support groups

Various group activities have been evaluated including antenatal parent education and support groups. A pilot study of an antenatal group designed to reduce anxiety and depression reported a significant reduction in symptoms (Thomas et al. 2014). A RCT of pregnant women with symptoms of depression were randomly allocated to either, twelve weekly, 20 minute peer support groups (n=22) or one hour interpersonal psychotherapy group (n=22). Despite women in the peer support group experiencing lower income, more symptoms of depression and receiving shorter group sessions, a statistically significant decrease in symptoms of depression (p=0.005) and anxiety (p=0.01) was reported in both groups (Field et al. 2013a). A study recruited pregnant women with and without depression and randomly allocated them to an intervention (n=71) or routine care (n=72). The intervention group received information regarding emotional health in booklet form, details of community networking opportunities and a self-help workbook which was discussed with a psychologist in weekly telephone support sessions. Women in the control group received community support and were given the self-help booklet once the study was complete. After controlling for baseline depression, symptoms of depression, anxiety and stress were significantly lower (p<0.01) in the intervention group 12 weeks after birth (Milgrom et al. 2011).

In contrast, a RCT of vulnerable pregnant women receiving either, parenting education and stress reduction classes (n=10), stress reduction classes (n=9) or care as usual (n=12), reported no statistical differences between groups. Interviews with 22 (71%) women in both group interventions reported good acceptability although some thought the six week programme was too short (White et al. 2015). Evaluation of the same study indicated women (n=4) found it acceptable to attend a six week antenatal intervention. The intervention, based on psychological and practical techniques, was designed to reduce anxiety and promote wellbeing in a group of women assessed as vulnerable. Women reported overcoming barriers, building relationships, improving mood and group cohesiveness were important positive aspect of the intervention (Breustedt and Puckering 2013).

2.5.3 Interventions focused on physical activities

Yoga specifically for pregnant women has been the focus of several studies. A study assessing feasibility and primary outcomes of a RCT found yoga acceptable to women. Women (n=46) were assigned to an eight week yoga group or treatment as usual. No between group differences were described but both groups reported a decrease in symptoms of anxiety and depression. There was a significant reduction in negative affect in the yoga group compared to treatment as usual (p=0.011) (Davis et al. 2015). Similarly a RCT of yoga (n=29) or treatment as usual (n=22) for women during their

first pregnancy, reported little difference in anxiety or depression symptoms before and after the intervention (Newham et al. 2014). In contrast a feasibility study of a specific antenatal yoga intervention to treat symptoms of depression resulted in a significant reduction in symptoms of depression (Battle et al. 2015). Another RCT reviewed the effectiveness of yoga in a group of pregnant women with symptoms of depression (n=46) compared to social support (n=46) over 12 weeks. Findings indicated a decrease in depression (p=0.005) and anxiety (p=0.001) between the beginning of the first session and after the last session in the yoga group. A short term effect of yoga (pre to post first session) was also reported with a significant decrease in depression (p=0.01) and anxiety (p=0.001), which was not apparent in the social support group. In the long term there was a significant decrease in anxiety symptoms in both groups (p=0.001) and in depression symptoms in the yoga group (p=0.005) and support group (p=0.001), from the first day of the intervention to follow up, after the birth. The results suggest either intervention may reduce symptoms of anxiety and depression scores although there was no control group as comparison (Field et al. 2013b).

Some studies have combined interventions. Findings from pilot studies of yoga and mindfulness showed a significant reduction in symptoms of depression (Muzik et al. 2012) and stress and trait anxiety (Beddoe et al. 2009). Another study involving pregnant women with symptoms of depression evaluated a 12 weekly group of either combined tai chi and yoga (n=37) or treatment as usual (n=38). Demographics were similar in both groups, apart from lower education attainment and socioeconomic status in the tai chi/yoga group. There was a reduction in depression (p<0.001), anxiety (p<0.01) and sleep disturbances (p<0.05) from baseline to the end of the study in the tai chi/yoga group (Field et al. 2013c). This combination might have the benefit of mind and body relaxation. Three focus groups with four to five women in each were conducted with 14 women who had attended an antenatal yoga group in the previous six months. Themes identified were: yoga was used as a way of helping women with stress and depression symptoms, providing time to themselves and getting to know other mothers. Women stated they found yoga classes more beneficial than other antenatal classes as they could be active rather than sit and be 'talked at' (Kinser and Masho 2015).

Other types of physical interventions have been assessed. Positive results were achieved from a self-selected group of inactive pregnant women between 13 and 31 weeks gestation (n=56), who were randomised into one of three interventions. The first group was provided information on protection motivation theory (how people perceive and respond to threats), the second group received this information and an action plan and the third group an added coping plan. All focused on promoting exercise to reach

the Canadian recommendation of four sessions each week. After four weeks, results demonstrated an increase in vigour (p=0.001) and a reduction in anxiety (p=0.011), depression (p=0.004) and tiredness (p=0.01) (Gaston and Prapavessis 2013). Results were not presented for individual groups and there was no control group as comparison.

2.5.4 Alternative therapies and other interventions

Alternative interventions such as music and complementary therapies have been explored. Daily listening was effective in reducing anxiety and depression symptoms in a feasibility RCT (Nwebube et al. 2017). Acupuncture was assessed in a RCT of 150 pregnant women, who were randomised into one of three groups, which took place over eight weeks. All groups demonstrated a reduction in symptoms of depression. There was a statistically significant reduction in depression symptoms in the acupuncture specific for depression group (n=52) compared to the group receiving nonspecific acupuncture (n=49, 95% CI 0.01-0.92, p<0.05) but no difference in the third group (n=49) receiving a massage (95% CI -0.10-0.76, p=0.13). Limitations noted were insufficient blinding of the acupuncturists whose expectations were lower in the group receiving acupuncture not specific for depression (p<0.01), however adding expectations as a covariant did not alter the results (Manber et al. 2010).

A double blinded RCT evaluated fatty acid supplements as a treatment of stress. Women living in a low-income, high stress environment who self-reported stress were randomised between 16 to 21 weeks gestation into either receive two fatty acid supplements (n=43) or placebo (n=21) which were taken daily during pregnancy. Levels of stress between groups were similar at 24 weeks gestation but showed a significant difference (p=0.029) in stress in the intervention group at 30 weeks gestation after controlling for negative life events and depression. Cortisol levels were also lower at 30 weeks gestation in women receiving supplements (p=0.041) (Keenan et al. 2014). This simple intervention with a positive effect requires larger studies to replicate the findings and ensure safety in a pregnant population.

2.5.5 Evaluation of existing services to support women's mental health

Several services provided by health and social care and third sector organisations have been evaluated to assess their effectiveness in supporting women with poor mental health. A qualitative study explored nine established one-to-one or group peer support projects which assist vulnerable pregnant women with complex needs, such as asylum seekers, young women or women with mental health problems in the UK. Interviews were held with 47 volunteers and 42 women. Women described the benefit of the volunteers being 'like them', they valued support by someone who knew what they

were going through, they also felt they could talk more freely than they would with professionals (McLeish and Redshaw 2015). Another qualitative study reviewed the same nine projects and an additional group and interviewed 47 pregnant women who had been supported by the projects. The findings indicated women benefited from improved mood and self-esteem and reduced anxiety and feelings of loneliness (McLeish and Redshaw 2017).

The Perinatal Support Project was assessed in four areas in England. Women with mild to moderate mental health problems could self-refer or were referred by their midwife or general practitioner. After an initial assessment, women were supported through pregnancy and during the first year after birth by volunteer befrienders. The volunteers provide emotional support and signposting on an individual basis and encourage women to attend targeted support groups. A significant reduction in anxiety ($p<0.001$) and depression ($p<0.001$) and an increase in social support ($p=0.007$) were found in women supported by the scheme. An added benefit was a significant increase in the volunteers' self-esteem ($p<0.001$) from the beginning to end of the intervention. Interviews with 13 recipients of the service reported positive results, feeling of acceptance and not being judged which made women feel supported and improved socialising (Coe and Barlow 2013). One service in Oxford offers multi-professional and multi-agency support and information for those with mental health problems. They provide health care professionals with training, support and referral options. A reduction in EPDS scores of 9.7 on average were noted in women with mild to moderate mental health problems using the service at the time of the review (Warriner et al. 2011). The number of women this pertains to is not described.

A review of the effectiveness and acceptability of listening visits with low-income, ethnic minority mothers by health care providers took place in the USA. Women with symptoms of depression (n=19) received up to six home visits during the perinatal period. A statistically significant reduction in depressive symptoms was reported on three depression scales ($p<0.01$), from pre to post intervention. These remained significant ($p<0.01$) at the five month follow up (Segre et al. 2010). The small cohort, no control group and receiving Healthy Start support at the same time makes it difficult to know which intervention made the difference. In the UK health visitors have been trained to facilitate listening visits during pregnancy and postnatally and are recommended in Wales (All Wales Perinatal Mental Health Group and Community of Practice 2018) and in Northern Ireland (Public Health Agency 2017). However NICE (2014) removed listening visits from its latest antenatal and postnatal mental health guidance in 2014. Even though listening visits are delivered by health visitors in the UK

in the antenatal and postnatal periods to support women with mild to moderate depression, there appears to be little evidence to back its use.

Australia has had an online support service for men and women in the perinatal period since 1980 where they can obtain information or ring a helpline staffed by volunteer and professional counsellors during daytime hours, Monday to Friday. Survey responses from the callers (n=124) between 1st May to 30th September 2013, mostly female (97%), were collated. Results were very positive, 95% (n=117) agreed they provided non-judgemental support and 94% (n=116) felt the service had helped them. The knowledge that the volunteers understood their concerns as they had 'been through' issues themselves was also seen as important (Biggs et al. 2015). An evaluation of a primary care, nurse led consultation to reduce perinatal mental health problems in Australia recruited 79 pregnant women with symptoms of depression. An initial phone call was followed by one to three face-to-face appointments. These included a mental health assessment and a brief intervention consisting of psychological strategies based on CBT and non-directive counselling, health promotion and suggestions to increase social support. Pre and post intervention scores showed significant decrease in depression, stress and anxiety (p<0.001). As this was a service model no control group was available as comparison (Harvey et al. 2012).

2.5.6 Summary

The review found interventions acceptable to women and no adverse outcomes were acknowledged. The majority were pilot, feasibility or studies with small sample sizes or had no control groups to act as a comparison. With the exception of the service reviews the interventions were designed specifically for evaluation of their effectiveness rather than ongoing interventions. Even though acceptable to the women who took part, the ability to provide the service on a long term basis is unknown.

Several studies reported significant reductions in anxiety and depression symptoms after psychotherapy interventions and CBT. Psychotherapy and CBT require trained health professionals to provide the interventions, leading to limited availability and long waits for support. Yoga alone did not show a conclusive decrease in symptoms of depression or anxiety, but when combined with mindfulness it was more effective. Group antenatal education and support groups showed a significant decrease in anxiety and depression symptoms. With group activities such as yoga it is not known whether positive changes were the result of social aspects or the activity itself.

Alternative interventions such as listening to music and acupuncture did report a significant reduction in anxiety and depression. The only study reviewed relating to diet reported supplements of fatty acids as reducing stress and cortisol levels. Of note, an

increase in exercise showed a significant reduction in anxiety, depression and tiredness. This low cost, short intervention could be recommended for the majority of the pregnant population. Many of the studies with the exception of acupuncture were small and warrant further investigation in larger cohorts to understand the possible short and long term benefits.

Interestingly peer support was favoured by women in the review of existing services. Women reported being more open when talking to their peers. This was apparent whether face-to-face or via telephone. Health visitors have played a part in supporting women with mild to moderate depression using listening visits, though they have not been evidenced by research. Limited research on midwives or obstetricians providing interventions was found.

Alternative suggestions have come from Australia where the idea of prevention or general wellbeing promotion has been provided. Their website *Beyond Blue* encourages mothers to complete the EPDS online and provides advice, information and contact details for support, dependant on results (Beyond Blue 2016). Evaluation of the service might provide another option for support.

2.6   Women's experiences of mental health problems during pregnancy

Service provision for women's mental health varies around the UK and accessing face-to-face support depends on what is available locally. Psychological therapies have been shown to be the most effective for mild to moderate mental health problems as recommended by NICE (2014). Provision of support does not mean women are able to access this as they may not be aware they have a mental health issue. Mental health literacy is poor and women often assess their feelings as being part of their personality, thinking their mood is normal or trying to live up to unrealistic expectations (Kingston et al. 2015b). It is only when looking back they recognise they may have had a mental health issue (Kim et al. 2010; Boots Family Trust Alliance 2013). Increasingly the media are reporting articles concerning mental health in the general population to increase awareness and reduce stigma. Efforts are also underway to promote information regarding perinatal mental health, informing the public about conditions which can affect women during and after pregnancy (Kingston et al. 2014).

To further understand what is known about the barriers and experiences women face with perinatal mental health problems a systematic search was conducted (Appendix 4). Fifteen articles were reviewed; they originated in the UK (n=6), USA (n=4), Canada (n=3), Ireland (n=1) and Australia (n=1).

Several studies have explored women's lived experience of poor mental health. Women described how their moods changed during the perinatal period with invasive thoughts, inability to function, irrational emotions and anxiety (Edge 2006; Bennett et al. 2007; Boots Family Trust Alliance 2013). In a survey of women in the postnatal period (n=5332) 743 self-reported anxiety during pregnancy. Women with anxiety were significantly more likely to be admitted to hospital during pregnancy ($p<0.001$), received more antenatal checks ($p<0.01$) and were more likely to be worried about labour and birth ($p<0.001$) than women who did not report antenatal anxiety (Henderson and Redshaw 2013). A survey of postnatal women (n=4578) identified women with self-reported antenatal mental health problems (n=352) were more likely to report postnatal mental health problems (OR 9.57, 95% CI 7.38-12.40) (Henderson et al. 2018). Identifying women with antenatal anxiety and providing support would benefit the women in reducing their fears of birth and possibly reduce the level of support required as a consequence of their anxiety.

The reason for changes in women's mental health include the pressure to do things right, hormonal changes (Boots Family Trust Alliance 2013), loss of control (Bennett et al. 2007) and guilt (Staneva et al. 2017). Other concerns reported were work pressures (Furber et al. 2009) and financial barriers, such as transport and childcare costs, and although not applicable to the UK, the cost of health care (Kopelman et al. 2008; Lee King 2014; Raymond et al. 2014). A loss of identity was identified in women with mild to moderate symptoms of depression. Interviews with six pregnant women explored their experiences of pregnancy. Women anticipated a change in their roles and the sense of responsibility at becoming a new mother. Physical changes, especially in the first trimester of pregnancy can impact women's mood negatively; conversely some explained how 'alive' they felt. The public's perception of pregnancy being a happy time contrasts with some women's negative experience and can add to their negativity (McKillop et al. 2010).

Women's coping mechanisms to overcome such issues were explored in interviews with 24 pregnant women who self-reported mild to moderate mental health problems. Women used various self-help techniques to support their mental health such as, time alone, staying in bed, talking, exercise and information seeking. Conversely some women found the amount of information available about pregnancy caused worry and anxiety (Furber et al. 2009). Understanding women's concerns in relation to information during pregnancy and after birth warrant further investigation to find a balance between enough information to be informed and able to make decisions and too much, causing anxiety.

Service provision for women with mental health problems and barriers to accessing care were explored in several studies. Stigma was reported as a barrier to seeking help (Jesse et al. 2008) and women were often reluctant to admit to feeling stressed at a time which society perceives as a happy event (O'Mahen and Flynn 2008; Raymond 2009) or they feared other people's reactions (Kopelman et al. 2008; Khan 2015). Family and friends were often told before health care professionals (Kingston et al. 2015c). Women were reluctant to talk to health professionals about their feelings, less than a fifth stating they were completely honest when asked a question about their mental health and almost a third never confiding in them if they felt unwell (Boots Family Trust Alliance 2013). Women from black and ethnic minority groups were concerned about being labelled as having a psychiatric condition and being prescribed medication (Edge 2006). Women also expressed a fear of their child being taken away if they reveal their mental health problems to professionals (Boots Family Trust Alliance 2013). In a study of 1416 pregnant women, those with symptoms of depression (n=183) were more likely to report long waiting lists for treatment ($p<0.01$), previous bad experiences ($p<0.001$) and transport issues ($p<0.001$) than women without symptoms of depression (Kopelman et al. 2008) in relation to antenatal care. Dissatisfaction with healthcare has been found in women with low-income who were pregnant or had just given birth (Jesse et al. 2008) and women with mental health problems (Henderson et al. 2013).

Another barrier reported by women concerned the health care professionals not asking questions about their mental health, or if they did, the professionals did not know what to do about the situation (Byatt et al. 2013a; Higgins et al. 2016a). A national survey of 5332 women found the majority (82%) were asked about mental health in early pregnancy and a similar proportion (84%) were asked about past mental health problems and family history and 90% were asked in the postnatal period (Henderson et al. 2013). Higgins et al. (2016a) reported a focus on the physical health of mother and baby, leaving women feeling mental health was not part of the system of care in the maternity services. One woman noted the fragmentation between mental health and maternity services.

Women also noted a lack of trust (Jesse et al. 2008) reduced the chance of discussing mental health openly. Seeing the same midwife was thought to be important for women especially those living in areas of social deprivation, building a relationship before discussing the emotional side of pregnancy (Raymond 2009). Attending appointments for treatment can be difficult for women with mental health problems as they are more reluctant to leave their homes and therefore accessing help outside of the home could be an issue (Raymond et al. 2014). This is further hindered by long waiting lists

(Kopelman et al. 2008). Not all women chose to accept the help offered (Jesse et al. 2008), possibly due to stigma or the barriers noted previously. Suggestions to encourage attendance include providing support in the obstetric setting avoids having to explain the need to others about why an appointment is in a different location (Jesse et al. 2014).

2.6.1 Summary

Women reported a variety of reasons for changes in mood and described how this impacted their lives. Both external and internal factors were mentioned. Women described self-care as a way of coping with their mental health problems. For women who required more support, several barriers were noted such as stigma and fear of expressing issues about their mental health. An emphasis on physical health was reported and an absence of opportunities to discuss mental health along with a lack of trust and relationship reducing the chance of women expressing concerns. If they did receive extra support long waiting lists and access were issues with appointments in different sites and little communication between mental health and maternity services.

An overview of the 15 studies identified only three stating clearly that all data were obtained during the antenatal period. One interviewed women in the first and second trimester (6-26 weeks gestation), one in the second and third trimester and the third in all trimesters of pregnancy (7-39 weeks gestation). Six of the studies spoke to women in the postnatal period, the longest time period being two years after the birth. Two thirds of the studies either recruited women with, or attending services for, mental health problems or from low socioeconomic backgrounds or black Caribbean women.

2.7   Midwives' experiences of caring for women's mental health

In the UK women are mainly cared for by midwives during their pregnancy and the first few weeks after birth. As the main providers midwives are ideally placed to care for women's physical and psychological needs (Hauck et al. 2015). Some of the concerns from women suggested barriers to accessing support for their mental health from healthcare professionals and services. Understanding healthcare professionals' knowledge and experiences was important to assess problems from both perspectives.

A systematic search of the literature was conducted to find studies related to midwives and perinatal mental health (Appendix 5). A total of 31 articles were identified and reviewed: they originated from the UK and Ireland (n=19), Australia (n=8), USA (n=3), and Canada (n=1).

2.7.1 Knowledge and skills

Health professionals have reported a lack of skills and knowledge required to identify and manage women with mental health concerns (Rothera and Oates 2008; McCauley et al. 2011; Byatt et al. 2012a; Jarrett 2014). One study in the UK assessed knowledge and training needs of health visitors (n=276), midwives (n=468) and obstetricians (n=24) through four scenarios. Health visitors appeared more competent than midwives and obstetricians. Referral to mental health services by midwives and obstetricians was more likely than referral by health visitors ($p<0.01$). Obstetricians were less likely to feel it was their responsibility to manage mild ($p<0.001$) or severe ($p<0.01$) mental health disorders compared to midwives and health visitors. Furthermore midwives and obstetricians were more likely than health visitors to state they would request help in supporting women with mild disorders ($p<0.001$). When it came to training needs, fewer health visitors and obstetricians wanted skills developed compared to midwives ($p<0.001$) and health visitors required less advice on accessing support compared to midwives and obstetricians ($p<0.001$). Health visitors indicated they were more confident than obstetricians and midwives and required less support (Rothera and Oates 2011). It would be pertinent to look at their competence and training and assess its relevance for other health professionals.

Midwives' (n=815) understanding of depression was assessed in a large postal survey in Australia. Answering questions on a case study 63.3% correctly recognised depression and 82.4% correctly stated they thought the woman required assistance. In practice 69.1% of the midwives stated they screened women for symptoms of depression both before and after birth, 54.0% using the EPDS. Midwives suggested ways that could be used to support depression such as support from their partner (52.4%), family or friends (51.8%) and counselling (49.0%) during pregnancy, whereas interestingly in the postnatal period they suggested help should come from psychologists (68.2%), counselling (67.0%), psychiatrists (58.6%) and general practitioners (58.2%), perhaps an indication that depression is seen as more damaging in the postnatal rather than antenatal period. Similarly, where midwives suggested the use of antidepressants the majority stated they were appropriate for use postnatally (93.2%), just under two thirds (61.5%) suggested they were used in the antenatal period (Jones et al. 2011). No examples of midwives providing support were found in this search.

A study from Australia using a survey design explored midwives' attitude, skills, knowledge and experience of providing care for women with perinatal mental health problems. Of the 161 respondents, even though two thirds (65.0%) had more than 10 years' experience as a midwife, only 20.0% stated they had received mental health

education. Most midwives had looked after women with anxiety (77.6%) and depression (87.0%) and the majority reported their colleagues to be understanding, tolerant and helpful when caring for women with perinatal mental health problems. Worryingly the least important skills recorded by midwives were suicide risk assessment and mental status examination. Conversely they reported psychological and mental health in their assessment of wellbeing. This could be due to the wording 'risk assessment' and 'mental status examination' sounding like medicalised formal assessments, and a lack of mental health training (McCauley et al. 2011).

As well as a lack of confidence and knowledge being a barrier to supporting women's mental health, insufficient communication between services has been reported. Focus groups with 28 health care professionals suggested discussions between mental health, maternity and pharmacy lacked consensus over prescribing medication for women's mental health problems, requiring training to ensure women receive better care (Byatt et al. 2013b).

A number of studies have concentrated on student midwives' knowledge and experience. In McCann and Clark's (2010) study, a vignette of a woman with schizhrenia was used in Australia to assess direct entrance students' knowledge at the beginning of their course. Understandably the results showed students' (n=38) knowledge was at the same level as lay person. The students recognised the woman had a mental health problem and needed professional support and had some knowledge of antidepressants and antipsychotic medication but did not know of the consequences of poor mental health. Reassuringly a study of third year student midwives (n=9) showed an awareness of mental health problems, antenatal mental health problems and had some knowledge about the stigma felt by women. A disparity was reported between students' and qualified midwives' knowledge; students reported having concerns about women with mental health problems which were dismissed by qualified midwives. Students also reported qualified midwives being afraid of discussing mental health in case they 'opened a can of worms'. Gaps were noted in students' knowledge in relation to looking after women with severe mental health problems, stating they were scared and not trained to deal with situations where women become aggressive (Phillips 2015).

An exploratory study in the UK of seven final year student midwives described how they observed women's attitudes and behaviours as a way of assessing mental health. They suggested the words 'anxiety' and 'depression' were replaced with 'emotions' and described the direct questions such as 'Have you had depression?' as too harsh. One student mentioned being frightened by women with severe mental health problems,

perhaps an indication of a lack of training or support when caring for women (Jarrett 2014). From this small study it is difficult to generalise the findings. A more recent UK study reviewed student midwives' understanding of antenatal anxiety via a survey (n=25) and individual interviews (n=7). Anxiety was seen as a normal part of pregnancy, unlike depression, and was not a priority in antenatal clinic. Students demonstrated an understanding of their role in assessing women and were keen to gain knowledge, both clinical and theoretical, in the subject (McGookin et al. 2017). Encouragingly findings from the studies indicated students' knowledge and confidence were better than qualified midwives. In light of these small cohorts, further research is required to understand and tease out the differences between students and midwives' knowledge and experiences in order to provide training to support midwives in their clinical practice.

2.7.2 Asking questions

Several studies have described midwives' experiences of asking questions about perinatal mental health. These are mostly concerning the initial questions at the booking visit. Limited time to screen women was an issue raised in several studies by health care professionals (Lees et al. 2009; Edge 2010; Jones et al. 2012; Rompala et al. 2016). If concerns arose midwives did not provide appropriate support (Higgins et al. 2016a), often because they did not know where to refer women (Byatt et al. 2012a; Rompala et al. 2016) and similar issues were reported by health visitors (Jomeen et al. 2013).

A qualitative study in the UK asked eight midwives about their experience of asking the Whooley questions (described in chapter one). Midwives appeared to lack an understanding of the purpose of the questions or thought it inappropriate and insensitive to ask them verbatim. Some midwives expressed real fear that they did not know what to do if a woman disclosed a mental health issue. A lack of time especially at the booking visit was mentioned, as well as the numerous other questions they were expected to ask (McGlone et al. 2016). Similarly midwives were observed conducting the 'booking visit' at a clinic in Australia. This showed midwives varied their approach when asking questions on sensitive topics such as domestic violence, mental health and relationships. Nine out of the 34 midwives introduced this section of questions and explained the reason for asking them. Some midwives asked questions in a direct manner whereas a more relaxed approach was used by 21 of the 34 midwives, which appeared to enable a better discussion between the woman and the midwife (Rollans et al. 2013). Another study in Australia commenced after the introduction of a structured antenatal psychosocial assessment. Midwives (n=18) described the stress they felt when asking the questions which was aggravated by a lack of support. The

issues became worse over time leading to unhealthy coping strategies such as drinking too much (Mollart et al. 2009). It is concerning that the introduction of new guidelines caused such distress to midwives however the numbers were small and it was the only study reviewed that explored midwives' feelings in relation to asking questions about mental health.

The views of mental health professionals (n=3) health visitors (n=13) obstetricians (n=14) and midwives (n=84) were collected from focus groups, interviews and questionnaires in the UK. A lack of consistency in following the NICE (2007) guidelines by all health professionals was reported whilst the majority of the health visitors and obstetricians were aware of the guidelines, only the health visitors mentioned the use of the EPDS (Lees et al. 2009). Similarly a study reported health care professionals' understanding of mental health among black Caribbean women, consisting of 42 professionals, 25 of whom were midwives. Findings included health professionals not following guidelines set out by NICE (2014), such as refusing to use the EPDS. In addition one hospital doctor stated they were more concerned about pre-existing physical conditions such as diabetes, than previous postnatal depression (Edge 2010). Guidelines have been instigated to assist midwives and other health professionals assess women's mental health. Additional research is needed to highlight why they are not being followed and if alternative guidelines or training are required to enable an assessment of women's mental health.

In contrast a study reviewing experiences of students in their final weeks of their three year midwifery training (n=33) in the UK, reported they always asked pregnant women questions about current and past mental health problems at the booking clinic. Over 90% stated they felt confident asking the questions and 97% stated women had disclosed issues. Yet when it came to caring for women 64% of the students did not feel confident looking after women with severe mental health problems whereas they rated their confidence higher in looking after women with complicated pregnancies such as pre-eclampsia (78%) and gestational diabetes (85%) (Jarrett 2015). Possibly the frequency and structured nature of asking questions in the booking appointment helped students feel confident. Whereas looking after women with severe mental health problems outside this appointment, is a less common event, requiring longer period of time not only for students but qualified midwives to gain experience and feel comfortable.

2.7.3 Education and training

The Royal College of Midwives (RCM) proposed every maternity service should have a specialist mental health midwife. The remit of these specialists was to provide expertise

and act as a source of knowledge and support. The RCM recognised specialist midwives would not care for all women with mental health problems and recommended it would be the responsibility of every midwife to support women's mental health and suggested training was required (The Royal College of Midwives 2016). This call was repeated in 2018, expressing the need for specialist midwives and training in perinatal mental health (The Royal College of Midwives 2018). Further, several reports have recommended training in perinatal mental health care should be delivered to all professionals involved in the care of women during pregnancy and the first year after birth (Mental Welfare Commission for Scotland 2016; National Institute for Health and Care Excellence 2016; Maternal Mental Health Alliance 2019) .

Midwives have consistently requested further training in perinatal mental health (Stewart and Henshaw 2002; Byatt et al. 2012a; McGlone et al. 2016) and other health care professionals have reported the same (Byatt et al. 2012a). When assessed, health professionals' knowledge of perinatal mental health is poor. In a study in Australia of midwives' (n=815) knowledge of antenatal and postnatal depression, around half provided incorrect answers to statements provided relating to risk factors and treatment (Jones et al. 2011), however the questions were very specific, for example, the 'What is the proportion of antenatal depressed women who attempted suicide in the postpartum period?'

A pilot study was developed to improve maternity staff awareness and increase their confidence in identifying and managing mental health problems using the Whooley questions recommended by NICE as a quick way of assessing women's mental health (National Institute for Health and Care Excellence 2014). Midwives (n=23) and other health professionals (n=103) attended two, three hour sessions. Pre and post survey response reported all health professionals' confidence was significantly increased ($p<0.01$) (King et al. 2012). It is not surprising that knowledge and confidence improved with training. It might be more important to assess the long term effect of training to assess if it is translated into clinical practice. This was reported in one study, a one day training for midwives (n=187) in the UK aimed at increasing their knowledge, confidence and attitudes showed midwives' confidence had increased, additionally the content of information in the maternity records had improved (Ross-Davie et al. 2007).

Pre-registration midwifery education programmes are required to provide education on the psychological aspects of midwifery (Nursing and Midwifery Council 2009). Several studies have reviewed pre-registration midwifery modules. Higgins et al. (2016a) assessed a module which aimed to improved students' confidence at speaking and listening to women. Pre and post training questionnaire with student midwives showed

a statistically significant ($p<0.001$) improvement in their understanding of perinatal mental health and reported it was applicable to their clinical practice. Suggested improvements to the course were more role play and practical group work to improve confidence. The training was 30 hours, suitable for preregistration students but might be too long and presumably expensive for all staff involved in maternity care to commit to as a continued professional development course.

Increased confidence in caring for women's mental health was reported by two final year student midwives who had completed a module designed for second year student midwives in the UK. The module focused on weekly varied topics, multidisciplinary teaching, and speakers including women with lived experience of mental health problems and specialist mental health professionals. Evaluation of the module showed an increased understanding and awareness of how midwives can promote wellbeing. The second student stated how she had thought prior to the course that a few sessions would be enough but had underestimated the complexity of perinatal mental health (Davies et al. 2016). The effectiveness of a training package designed with two service users who had psychosis and depression diagnoses has been assessed. The blended learning included e-learning, reflection and face-to-face sessions. Evaluation of the package by student midwives suggested the combination of learning strategies including seeing the problems from the view of women was useful for practical application of the skills. Furthermore the time frame between sessions allowed opportunities to reflect on the content (Larkin et al. 2014).

2.7.4 Summary

This section reviewed the experiences of midwives and student midwives, who acknowledged a lack of confidence when it came to discuss mental health with women. Similarly other health care professions also found it a barrier to providing mental health care. Midwives' understanding of anxiety and depression were higher than that of severe mental health problems. Furthermore postnatal depression was understood better than anxiety. Yet having knowledge of the conditions did not translate to confidence about talking to women. Health visitors were reported as being more competent and requiring less support than obstetricians and midwives. Whether this was due to training or experience was not explored. Unsurprisingly students entering training were reported as having a lay person's perspective of perinatal mental health, whereas those at the end of their training appeared more knowledgeable. In contrast several studies noted student midwives reported feeling scared of women with severe mental health problems, an area in which further training is required.

Other barriers to providing support were fragmented care between maternity and mental health services and limited times to discuss issues, also students reported that qualified midwives were reluctant to ask questions in case women disclosed a problem. There was no consensus about how to ask questions with some midwives being direct in their approach and others varying the way they discussed sensitive topics. Caution was advised when introducing new topics to discuss with women at booking and the importance of training to prevent negative effects on the midwives.

An obvious lack of training was felt by midwives and student midwives, who were much more aware of how to care for physical conditions than mental health. Along with several studies and national reports calling for training for health care professionals, the RCM has also recommended perinatal mental health training for all midwives. Multidisciplinary teaching, varied methods and participation from women with lived experience were reported to be engaging for the students, although all training resulted in improved knowledge and confidence at the end point. Much of the education and training that has been evaluated was often developed for research itself and not part of routine preparation for supporting women's mental health, therefore sustainability was not assessed. Furthermore Legere et al. (2017) stressed there was no research to suggest the best way to train health care professionals to support women's mental health.

2.8   Conclusion and rationale for the study

Evidence from the literature suggests, regardless of the severity of poor mental health during the perinatal period, that there are negative consequences for the mother and child leading to a knock-on effect for the family and cost to the economy. Studies have recognised the antenatal period as being a crucial time for the development of the fetus, which can lead to negative outcomes for the baby, as well as resulting in an increased chance of mental health problems for the mother after birth. Women with severe mental health problems are supposed to have a package of care in place to support their mental health including extra support during pregnancy from the PNMHT, if they are available in the Health Board where they book their care for pregnancy.

Social support was shown to be beneficial to women's mental health, specifically anxiety and depression. Low self-esteem was found to be more strongly associated than low social support in relation to poor mental health. High self-esteem and self-efficacy are important protective factors in relation to mental health.

Alongside social support recommendations, NICE (2014) suggest the use of psychotherapy or CBT, which had a significant impact on decreasing anxiety and depression and was acceptable to women but there was often a long wait for

treatment. Other interventions have been assessed with differing degrees of success, such as yoga, antenatal education, music and complementary therapy, although the studies were small. One study evaluating exercise showed a significant improvement in both mental and physical health, however the mechanism for improvement would benefit from further exploration.

Service provision for women with poor mental health in Australia and the UK were evaluated well, with online telephone services and volunteer support, showing positive results and was acceptable to women. In addition peer support from volunteers with experiences of poor mental health was rated highly by women, as they felt their condition was understood. Such volunteer support was rated higher by women than when offered by health care professionals.

Women discussed limited conversations about mental health due to barriers including stigma, lack of time and knowledge about mental health problems. Student and qualified midwives similarly mentioned time as a barrier and lack of training leaving them reluctant to ask questions. Midwives repeatedly mentioned further training would be beneficial, this was also recommended in several reports.

Information from the literature review was used as a basis for this study design (Chapter three). Research assessing women's experiences of poor mental health has focused on women from minority groups. The literature review highlighted that there is a distinct lack of research relating to this topic in Wales. Of the studies reviewed, only one conducted in the UK interviewed women in pregnancy and even this study recruited women who had been referred to the specialist community midwife. Therefore this study intended to focus on a general population in South Wales to assess any differences in this particular cohort of women. This study aimed to fill a gap and explore women's experiences when living with mild to moderate mental health problems and women who do not fit the criteria for specialist care and the barriers they face accessing support (Chapter five).

The survey phase of this study further aimed to provide information on the number of women who have poor mental health at this crucial time in their babies' development. An exploration of the significance of sociodemographic, self-efficacy and social support intended to understand the impact on women's mental health. As literature has been mainly collected during the postnatal period months or years after the birth of their baby, interviews planned to capture women's experiences during pregnancy to ensure a more accurate recollection of events (Chapter four).

Little research has been undertaken to view services from the perspective of the women and health care professionals concurrently. As midwives are the main providers of care during pregnancy, it was important to understand whether they felt equipped to support women's psychological, as well as physical health. Previous studies concentrated on student midwives' experiences, or midwives' conversations with women at the booking appointment. To better understand midwives' experiences, surveys were planned with midwives working in the same Health Board, including newly qualified to experienced midwives, working in various clinical and management settings to gain an overview. An in-depth discussion with midwives aimed to explore areas of concern in depth, to assess the barriers to providing care and support that women require during this critical timeframe in their lives (Chapter six).

Chapter three – The research process

3.1 Introduction

This chapter provides details of the research process. The aims and objectives are outlined and a rationale for choice of methods described. Discussion regarding the development of the women's and midwives' questionnaires is followed by a review of other data collection methods, namely interviews, focus groups and visual data collection tool. A statistical analysis plan is presented. Finally, the choice of recruitment site is described and permissions process which considers the ethical implications including consent, confidentiality, psychological distress and data management.

3.2 Study aims and objectives

Aim

The aim of the study was to assess the prevalence of poor perinatal mental health in pregnancy and its relationship to sociodemographic characteristics, self-efficacy and perceived social support. It also aimed to understand the experiences and barriers preventing women with mild to moderate mental health problems in pregnancy from receiving help and to explore midwives' understanding of their role in relation to perinatal mental health.

Objectives

1) To describe the prevalence of perinatal mental health problems and the relationship to sociodemographic characteristics, self-efficacy and support networks.
2) To explore the experiences of pregnant women in relation to their mental health.
3) To explore midwives' experiences of supporting women's mental health during the perinatal period.

Purpose

Contribute new knowledge relating to the needs of women with perinatal mental health disorders, current access to support, particularly among women who do not meet the criteria for local perinatal mental health services and provide an understanding of midwives' training and experience of caring for women with perinatal mental health disorders.

3.3 Study design

Having determined the purpose of the study, attention turned to choice of data collection tools and methods of data analysis (Whittemore and Melkus 2008;

Bengtsson 2016). The decision to use multiple methods was based on the need to answer all the aims of the study and a review of previously used methods in the literature on the topic of perinatal mental health (Johnson et al. 2007; Gilbert 2008; Silverman 2010).

Mixed methods, multi-strategy (Gilbert 2008) or multi methods (Tashakkori and Teddlie 2010) have been described as the third major research approach along with qualitative and quantitative research (Johnson et al. 2007). This approach involves linking the methods, methodology and philosophy (Tashakkori and Teddie 2010). Most debates suggest it contains a combination of qualitative and quantitative methods (Johnson et al 2007), however critics have argued it could comprise two forms of qualitative or quantitative methods (Gilbert 2008; Moran-Ellis 2006). An increase has been seen in the use of mixed methods in education and health research (Moran-Ellis 2006). Traditional gold standard randomised control trials now often have an element of qualitative 'patient experience' data to understand social circumstances surrounding the subject matter (Silverman 2010) and process evaluation to aid in the interpretation of trial results.

The advantage of using a combination of qualitative and quantitative methods of data collection was to provide a comprehensive understanding of the experiences of perinatal mental health in pregnancy (Johnson and Onwuegbuzie 2004; Creswell 2014). Few studies have explored perinatal mental health from the position of the midwife and mother simultaneously, therefore pregnant women and midwives were recruited to provide an overview of experiences and service provision from different perspectives (Figure 3.1). Johnson et al (2007) suggest this provides richer data, more confidence in the results and offers reassurance the findings are related to the topic rather than the method.

Qualitative and quantitative methods have traditionally arisen from different paradigms, with criticism aimed at the use of mixed methods suggesting the two cannot be combined (Brannen 2005). Current thoughts suggest a pragmatic view of the world fits well with mixed methods designs (Johnson et al 2007; Creswell 2014) providing a different view of the world and different forms of data collection and analysis (Creswell 2014). Pragmatists try to explain practical experiences and observed findings to help understand a phenomenon. Johnson and Onwuegbuzie (2004) suggest this offers a middle position philosophically and methodologically.

Equal status was given to each method of data collection and analysis in this study. Sequential design was used for the women's phase of the study with a self-completed

questionnaire designed to assess the prevalence of perinatal mental health and its relation to sociodemographic factors, self-efficacy and perceived social support. Recruitment into the survey phase of the study also provided an opportunity to invite women to indicate their interest to participate in a follow up interview.
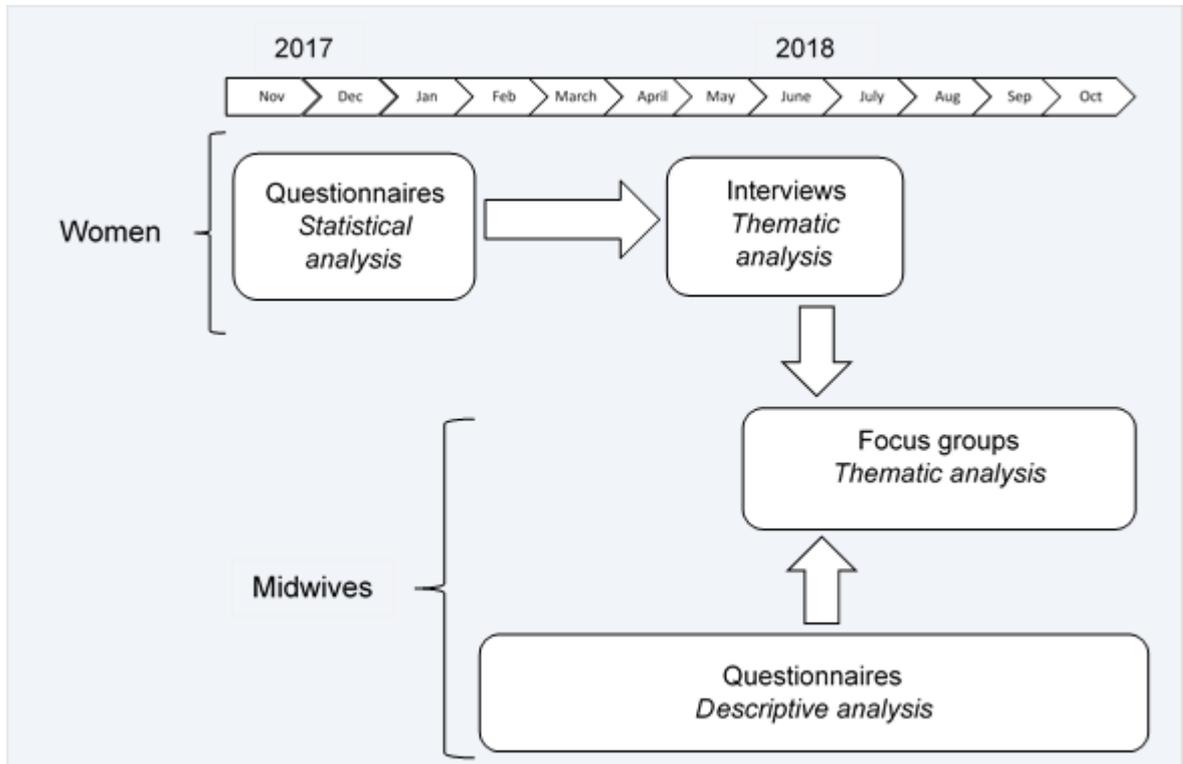
Figure 3.1 Data collection and analysis.

The midwives phase was a sequential design with the focus group topic guide based on the findings from the questionnaires. These were designed to ascertain midwives' experiences and training relating to perinatal mental health, self-completed questionnaires were chosen, with focus groups to expand on topics identified.

The women's interviews and focus groups with midwives were undertaken concurrently, utilised to build an overall picture of women's experiences of mental health during the perinatal period alongside service provision (Richens and Smith 2011; Creswell 2014).

3.3.1 Screening tools to detect mental health problems

A systematic process was used to search the literature for screening tools suitable for use in the pregnancy questionnaire to detect anxiety and depression symptoms (Appendix 6). To ensure screening tools were suitable for purpose, only literature reporting reliability and validity of screening tools were reviewed. Reliability relates to

its consistency and validity refers to the sensitivity and specificity, and whether the tool measures what it sets out to measure. High levels of sensitivity and specificity of screening tools are important to correctly identify women with mental health problems, while not leading to larger numbers of 'false positive' results. In this instance validity is often assessed against the gold standard of clinical diagnosis by a suitably qualified professional against the DSM or International Classification of Diseases (ICD) (World Health Organisation 1992).

Criticism has been aimed at the DSM due to the somatic questions which often relate to normal physiological changes of pregnancy, for example increase in weight and appetite, and lack of sleep or energy. These need to be taken into account to avoid over diagnosis of mental health problems (Matthey and Ross-Hamid 2011). A review of 118 women compared the Mini International Neuropsychiatric Interview, against DSM diagnostic classification and indicated it had good psychometric properties. The interviews were completed during the second and third trimester and included an added question asking if the women thought the symptoms were due to physical changes of pregnancy. Rates of major depression were shown to drop 6.8%-1.7% if pregnancy was added as an exclusion from DSM-5 diagnosis of depression. With 66% of those deemed to have major depression stating a significant number of their symptoms were due to normal changes in pregnancy (Matthey and Ross-Hamid 2011). Anxiety was also shown to be affected, but to a lesser extent.

There are several options for administering the screening tool, traditionally pencil and paper were used but more recently there has been a move to technology based methods. Not only is it becoming more acceptable to utilise technology to collect data, it reduces the need for natural resources and less physical space is required to store the data. Using technology also means large amounts of data can be collected (Haberer et al. 2013) reducing the need for face-to-face recruitment into studies. Initial findings from one study, reported 121/325 women (58%) preferred using technology such as a tablet to answer questions related to mental health (Kingston et al. 2017). Several of the screening tools themselves are already readily available online, one site having eight screening tools for anxiety (Anxiety testing.com 2017) and it is feasible women have already filled them in and worked out their scores. There have been worries this may lead to self-referral and overwhelming work for health professionals (Haberer et al. 2013).

The use of technology may also help to reduce the errors made by researchers when scoring screening tools. In one study, when checked, 92.9% of the EPDS were scored incorrectly by one point and 6% by three points. This did not result in a negative impact

for the women, as the disparity between reported and true scores were small. To improve accuracy a template or reverse scoring was suggested (Matthey et al. 2013a). There are many advantages of using technology, however for small studies paper and pencil may be more practical (Rose and Devine 2014) and preferred by women (Brugha et al. 2016).

Attempts have been made to use automated telephone interviews as a method of assessing mental health with screening tools which help to overcome literacy problems. Only half of those identified as depressed requested further support (Kim et al. 2007). This could be because there was no one to assess their mental state at point of contact and suggest support. Furthermore computer or paper based questionnaires were preferred over telephone options (Kingston et al. 2015a).

3.3.2 Screening tools to detect symptoms of depression

The DSM-5 describes depression, also known as major depressive disorder or clinical depression, as a common and serious mood disorder (Shelton 2019). Both the DSM-5 and the ICD-10 described depression as a combination of five or more symptoms experienced each day for the past two weeks, these include depressed mood, reduced energy levels and loss of interest and enjoyment (World Health Organisation 1992). In addition the NHS classes moderate depression as symptoms lasting for more than two weeks. Numerous screening tools have been developed and adapted some of which are discussed below (Table 3.1).

The Edinburgh Postnatal Depression Scale (EPDS)

The EPDS was originally designed for use in the postnatal period but it has more recently been used during the antenatal period (Hayes 2010) and also in the general population (Matthey and Ross-Hamid 2012). It has since been translated and validated in more than 23 languages (Breedlove and Fryzelka 2011), making it one of the most widely validated and used screening tools both in the UK and abroad for detecting symptoms of depression and has been validated in the postnatal period as well as each trimester of pregnancy (Kozinszky and Dudas 2015). However most systematic reviews of the EPDS focus on its use in the postnatal period (Eberhard-Gran et al. 2001; Gaynes et al. 2005; Gibson et al. 2009; Breedlove and Fryzelka 2011).

The suggested cut off score (the score above which moderate to severe depression is suspected) as low as nine or 10 has been used for research but when followed up many women were found not to be depressed (Cardone et al. 2006). A generally agreed cut-off score of 13 does not appear to miss women who need extra support, when assessed against a psychological interview (Matthey et al. 2006). The EPDS has also been used to assess depression severity with cut off scores of 0-6 nil, 7-13 mild,

14-19 moderate, 20-30 severe, assessed against the Beck Depression Inventory (BDI) which already had a validated severity scale for depression in a large sample (n=1516)

of postnatal women. A Cronbach's alpha calculated internal consistency, with coefficients of 0.87 EPDS and 0.88 BDI (McCabe-Beane et al. 2016). The EPDS has also been assessed for accuracy for transient and enduring distress; those with enduring depression more often met the criteria for a depression score of ≥13 than those with transient depression. The EPDS showed very good sensitivity of 100% and specificity of 96% with a cut off score of 14/15 in one study of 100 pregnant women detecting major depression against interviews. The specificity reducing slightly to 87% when the cut off score was reduced to 12/13 (Murray and Cox 1990). However other studies disagree with these findings, showing a sensitivity of 80% and specificity of 74% with a cut off score of ≥13 in both the antenatal and postnatal periods (Flynn et al. 2011). There is a consensus, regardless of the total, anyone scoring high on the self-harm response, question 10 'the thought of harming myself has occurred to me', should receive immediate referral (Moses-Kolko and Roth 2004).

Patient Health Questionnaire (PHQ)

One of the most commonly used screening tools in the general population to detect symptoms of depression is the PHQ and its derivatives, PHQ-2, PHQ-7, PHQ-8 and PHQ-9, PHQ-15, PHQ-SADS. Although not specifically designed for use in the perinatal period the PHQ-9 has been validated against a structured diagnostic interview in a pregnant population, with a sensitivity of 85% and specificity of 84% (Sidebottom et al. 2012). The EPDS and the PHQ-9 when compared using cut-off scores for perinatal women ≥13 and ≥10 respectively the EPDS showed sensitivity of 80% and specificity of 74% and PHQ-9 a sensitivity of 74% and specificity of 73% (Flynn et al. 2011). Validity was shown throughout the perinatal period, however this study only reviewed a small number: 89 pregnant and 104 postnatal women seeking psychiatric care.

A modified PHQ-2 is scored with 'yes' 'no' answers and was validated against the EPDS at 15 and 30 weeks of pregnancy and between six and 16 weeks after birth. The study concluded this was a quick screening tool which could be used to rule out depression and reduced the need for further screening, with a high sensitivity of 93%, and specificity of 75% at 15 weeks gestation (Bennett et al. 2008). When compared, the PHQ-8 and PHQ-2 cut off scores of 11 and four respectively showed the PHQ-8 of sensitivity of 77% and specificity of 62% while the PHQ-2 had sensitivity of 62% and specificity of 79% (Smith et al. 2010). The PHQ-8 and PHQ-2 were shown to have lower sensitivity and specificity in a pregnant population in comparison to non-pregnant populations.

Whooley

Since 2007 it has been the recommended screening tool for the perinatal period (National Institute for Health and Care Excellence 2014) to identify perinatal depression. Whooley (described in chapter one) was originally designed for the general public and assessed against the BDI and Centre for Epidemiologic Studies Depression Scale. A positive response had a sensitivity 96% and specificity 57% (Whooley et al. 1997). The tool has since been validated for pregnancy. A positive response with the two case finding questions resulted in a 100% sensitivity and specificity of 68% when assessed against the DSM-IV (Mann et al. 2012) and a sensitivity 48% and specificity 86% against EPDS ≥13 (Darwin et al. 2016). Adding the Arroll question 'Is this something you feel you need or want help with?' resulted in improved specificity of 91% at the expense of the sensitivity which was reduced to 58% (Mann et al. 2012) and again an improved specificity 97% but at the expense of reduced sensitivity of 10% against EPDS ≥13 (Darwin et al. 2016). This Arroll question has since been removed from the guideline. Criticism aimed at the Whooley questions suggested only half the women with symptoms of depression, as assessed by the EPDS, were picked up by Whooley questions (Darwin et al. 2016).

Beck Depression Inventory

Not originally designed for the perinatal period, the BDI is a 21-item questionnaire measured on a point scale, with a maximum score of 63. BDI cut off recommendation in pregnancy of greater than 16 provided a sensitivity of 83% and specificity of 89% to detect symptoms of depression (Holcomb et al. 1996) against the National Institute of Mental Health Diagnostic Interview Schedule – version III, suggesting it is a suitable screening tool to use in pregnancy. Critics suggest somatic questions such as 'I get tired more easily than I used to', led to over detection of depression symptoms (Matthey and Ross-Hamid 2011).

Table 3.1 Screening tools used to detect symptoms of depression.

Study/country	Screening tool	Cut off point	Gestation	Sensitivity	Specificity
Murray and Cox 1990 UK	EPDS	14/15	28-34	100	96
		12/13	28-34	100	87
Flynn et al. 2011 USA	EPDS	13	Pregnancy and postnatal	80	74
	PHQ-9	10		74	73
Sidebottom et al. 2012 USA	PHQ-9	10	Early pregnancy	85	84

Smith et al. 2010 USA	PHQ-8	11	<18	77	62
	PHQ-2	4	<18	62	79
Bennett et al. 2008 USA	PHQ-2	Yes/No	15	93	75
			30	82	80
Whooley et al. 1997 USA	Whooley		General public	96	57
Mann et al. 2012 UK	Whooley		26-28	100	68
	Extra Arroll question		26-28	58	91
Darwin et al. 2016 UK	Whooley		Booking appointment	48	86
	Extra Arroll question			10	97
Holcomb et al. 1996 USA	BDI	16	Pregnancy	83	89

3.3.3 Screening tools to detect anxiety symptoms

Anxiety can be described as a 'feeling of unease, such as worry or fear which can be mild or severe' (NHS 2018). Anxiety may be more difficult to identify than depression as it is a complex condition with many sub types (Rose and Devine 2014). Furthermore a diagnosis of anxiety is only given if the symptoms have been present for six months (American Psychiatric Association 2013). This applies as much to the general population as to the perinatal period. There are additional pregnancy specific anxieties such as miscarriage and labour which may require different tools to detect symptoms. The range and prevalence of anxiety during the perinatal period is underestimated (National Institute for Health and Care Excellence 2014).

As with screening tools for depression, there have been many tools developed to identify anxiety, which have subsequently been altered, sub categorised and validated and adapted for use in populations different from which they were originally designed. Few of these screening tools to detect anxiety have been validated in the perinatal period (Simpson et al. 2014; Benediktsson et al. 2017). A systematic literature search of eight electronic databases identified 17 different self-reported screening tools to measure anxiety in pregnancy in articles published between 1990 and 2014. The State-Trait Anxiety Inventory (STAI), EPDS and HADS were the most frequently described, although further evaluation was suggested to confirm their value for use in pregnancy (Evans and Bullock 2012). A literature search for detecting symptoms of anxiety was carried out alongside one for depression screening tools to assess the most appropriate screening tool for this study.

Generalised Anxiety Disorder Assessment (GAD)

The GAD-7 screening tool can be used to detect subgroups of anxiety for example, PTSD, generalised anxiety disorder (GAD), panic disorder and social anxiety disorder (Kroenke et al. 2007). The GAD-7 and Edinburgh Postnatal Depression Scale 3A (EPDS-3A) have been assessed against the DSM-IV by experienced psychiatrists. Using the previously established score of ≥10, GAD-7 showed sensitivity of 76% but poor specificity 51%. With a cut off score of 13 the sensitivity was 61% and specificity 72%. While the EPDS-3A showed fair sensitivity of 68.0% and specificity 63.5%. GAD-7 performed slightly better than the EPDS and EPDS-3A for detection of GAD in the perinatal period (Simpson et al. 2014) (Table 3.2). The GAD-7 has also been used to assess for severity of anxiety and showed cut off scores of 0-4 nil, 5-9 mild, 10-14 moderate, 15-21 severe (Spitzer et al. 2006).

The GAD-2 was developed as a quicker way of assessing anxiety, developed for the general population. It was validated against a psychiatric interview alongside the GAD-7. The GAD-2 has a maximum score of three for each question, with a cut off of two the sensitivity was 96% and a specificity of 64%, with a cut off of three the sensitivity reduced to 86% but the specificity rose to 83% (Spitzer et al. 2006).

Edinburgh Postnatal Depression Scale 3A (EPDS-3A)

As well as the EPDS being used to detect symptoms of depression, questions three, four and five from the full scale have been found to indicate anxiety in both pregnancy and the postnatal period (Matthey 2008). A literature search produced six studies with data containing EPDS sub scores for detecting anxiety symptoms. This subscale suggested the EPDS-A3 was a suitable tool to use however the study was based on a small number of articles with variable sample sizes.

State-Trait Anxiety Inventory (STAI)

The STAI is the most widely used self-reported measure of anxiety in adults (Onoye et al. 2013), containing 40 questions, half assessing state anxiety and half trait anxiety. Originally designed for general population, it is now validated for the perinatal period and has been translated into numerous languages (Bayrampour et al. 2016). A systematic review concluded out of the 11 screening tools for anxiety the STAI was the best and most frequently used (Nast et al. 2013). A cut off score of 40 was found to be a significant predictor of anxiety in an antenatal cohort with a sensitivity of 81%, a specificity of 80%, in third trimester of pregnancy, and good internal validity against DSM-IV (Grant et al. 2008).

Perinatal Anxiety Screening Scale (PASS)

PASS questionnaire was developed by a panel of five experienced, specialist perinatal psychologists and was the first tool specifically designed and validated for the perinatal period. (Somerville et al. 2014). It is a self-administered screening tool which includes criteria laid out in the DSM-IV and ICD-10, to detect a broad range of anxiety disorders, including pregnancy specific anxiety. There are 31 questions with four sub scales which measure: general worry and specific fears; perfectionism, control and trauma; social anxiety; and acute anxiety and adjustment over the past month (Somerville et al. 2015). A cut-off total score of 26 has shown a sensitivity of 70% and specificity of 30% in detecting anxiety symptoms in the perinatal period. PASS detected twice as many women with anxiety than the EPDS-A3 however this was not backed up by a diagnostic interview (Somerville et al. 2014).

Table 3.2 Screening tools used to detect symptoms of anxiety.

Study/country	Screening tool	Cut off point	Gestation	Sensitivity	Specificity
Spitzer et al. 2006 USA	GAD-2	2	Non pregnant population	95	64
		3		86	83
Simpson et al. 2014 Canada	EPDS-A3	>4	Pregnant and postnatal	68	64
	GAD-7	≥10		76	51
		13		61	73
Grant et al. 2008 Australia	STAI	40	3rd trimester	81	80
Somerville et al. 2014 Australia	PASS	26	Pregnancy and postnatal	70	30

3.3.4 Summary and choice of screening tool for women's questionnaire

The EPDS was chosen as the screening tool to detect symptoms of depression. Showing higher sensitivity and specificity when assessed against PHQ-9 in a comparison study. The tool was specifically validated for use in the perinatal period and is widely used. Furthermore this will allow comparison with a similar study (Grown in Wales) at the same site in late pregnancy (Janssen et al. 2018). This study recruited women in late pregnancy the day prior to an elective caesarean section. The questionnaire used EPDS and STAI as screening tools to assess symptoms of anxiety and depression, in addition to sociodemographic details.

Although the PHQ-9 indicated higher sensitivity and specificity than the EPDS in one study, it contains symptoms which could be pregnancy related, therefore elevating the scores. Another downside of using the PHQ questionnaires in the perinatal period are the somatic symptoms including, 'feeling tired or having little energy or changes in appetite' could be pregnancy related rather than depression symptoms, making assessment more difficult. Using the PHQ or Whooley questions, was not suitable in this study as a second screening tool would have been required to assess women with high scores.

None of the screening tools to assess symptoms of anxiety were designed specifically for use in the perinatal period. The STAI has the highest sensitivity and specificity (Bengtsson 2016) and was used in the Grown in Wales study but due to financial constraints was not used in this study. Using the GAD-2 would require further screening. The GAD-7 was chosen as it performed better than the EPDS-3 and PASS and is also recommended by NICE (2014).

3.3.5 Women's questionnaire development

The questionnaire was based on one previously used in the Grown in Wales study which recruited pregnant women in the same hospital prior to an elective caesarean section around 39 weeks gestation (Janssen et al. 2018). Both studies used the EPDS as the screening tool to detect symptoms of depression with a cut off score of ≥13. The GAD-7 was chosen as the screening tool to detect symptoms of anxiety with a cut off score of ≥10; enabling a comparison between questionnaires.

Questions were designed to collect an overall picture of the women's sociodemographic background. Relationships between poor mental health and low socioeconomic background or ethnic minority groups have been reported (Glazier et al. 2004; Anderson et al. 2006; Fone et al. 2014). Similar sociodemographic information questions were asked to the Grown in Wales questionnaire, although reworded to standardised questions and scoring based on Office for National Statistics (ONS) (Table 3.3). Both questionnaires asked about previous or current mental health disorders and symptoms of anxiety or depression (Table 3.3). These were designed to assess whether the symptoms were pregnancy related or preexisting and provide information on the number of women with mental health problems and the type of mental health disorder. Due to the different purpose of the study, which was to assess the relationship between maternal mental health in relation to growth of the baby and child development, the Grown in Wales questionnaire was not used in its entirety.

The remaining screening tools used in the questionnaire related to factors known to be associated with perinatal mental health such as the women's perceived social support networks, self-efficacy and adaptive functioning (Kline 2013). It is widely recognised that strong social networks and social support are associated with positive physical and mental health. Berkman et al. (2000) suggest social support, social engagement and access to resources and material goods can all influence health. Therefore the tools chosen included Subjective Social Status used to assess perceived social standing (Goodman et al. 2001), Social Support Networks to assess money available for everyday living (Dunst et al. 1994) and Adaptive Functioning relating to day to day life (Bernard et al. 1999) (Table 3.3). Social networks cover more than personal relationships; positive friendships, work colleagues and social groups all support positive mental health (Berkman et al. 2000) therefore the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al. 1988) was chosen to assess support from significant others, family and friends, each on an individual subscale.

On an individual basis, direct physiological stress responses, psychological traits including self-esteem, self-efficacy and security can all influence physical and psychological health (Chapter two); the General Self-efficacy Scale which predicts coping with daily stresses (Schwarzer and Jerusalem 1995) was used to assess this personal trait (Table 3.3). All scales used were validated standalone tools suitable for use in the English language (Appendix 7).

Due to the stigma around mental health the decision was made to avoid the words mental health on all participant-facing information for women and use the words *Mothers Mood Study* (MoMs) as the title. After drafting the questionnaire, patient and public involvement (PPI) was obtained from members of the Maternity Services Liaison Committee. The patient involvement group review process and procedures in the maternity unit. PPI is not a new concept (Stewart et al. 2011); there are various levels of participation from reviewing participant information to being part of a development committee. PPI is often a requirement of funding bodies and an important part of the strategies for Welsh research in social and health care (Health and Care Research Wales 2018). After drafting the participant information and questionnaire for women, they were uploaded to the 'closed' Facebook page for review. The questionnaires were then completed by four women of childbearing age and comments invited (Bryman 2008). Each woman took under 10 minutes to complete the questionnaire and no comments were received.

Table 3.3 Screening tollos used in the women's questionnaire.

Category/Question	Rationale for using this tool	Scoring	Source
Sociodemographic questions			
National identity How would you describe your national identity?	ONS questions used to asses sociodemographic data. It is recommended that the national identity question is asked as a separate question and immediately before the ethnic group question in surveys (ONS 2015).	N/A	ONS harmonised concepts and questions for social data sources: secondary principles, National Identity and Religion. Version 4.2 May 2015 http://www.ons.gov.uk/ons/guide-method/harmonisation/harmonisation-index-page/index.html
Ethnicity Choose one option that best describes your ethnic group or background	ONS questions used to asses sociodemographic data. This is the recommended ethnic group question for use in Wales.	N/A	ONS harmonised concepts and questions for social data sources: primary principles, Ethnic group Country specific ethnic group question: Wales. Version 3.3 May 2015 http://www.ons.gov.uk/ons/guide-method/harmonisation/harmonisation-index-page/index.html
Educational attainment What is your highest level of education?	ONS questions used to asses sociodemographic data.	Three or seven classification groups options.	ONS harmonised concepts and questions for social data sources: primary principles, Other primary principles. Version 5.4 May 2015 http://www.ons.gov.uk/ons/guide-method/harmonisation/harmonisation-index-page/index.html

Category/Question	Rationale for using this tool	Scoring	Source
Employment How would you best describe your current employment situation?	ONS questions used to asses sociodemographic data.	Three, five and eight classification groups options.	ONS harmonised concepts and questions for social data sources: primary principles economic status, National statistics socioeconomic classification and employment related questions. Version 3.2 May 2015 http://www.ons.gov.uk/ons/guide-method/harmonisation/harmonisation-index-page/index.html
Occupation What is your main occupation?	ONS questions used to asses sociodemographic data.	Enter occupation into an online database to assess category. Four, six or eight category options.	ONS harmonised concepts and questions for social data sources: Primary principles. economic status, NS-SEC and Employment related questions. Version 3.2 May 2015 http://www.ons.gov.uk/ons/guide-method/harmonisation/harmonisation-index-page/index.html
Partnership status What is your marital status?	ONS questions used to asses sociodemographic data. High support from non-partner and employment were significantly associated with lower odds of depressive symptoms. (Gjerdingen et al. 2013)	Three, five and eight classification groups options.	ONS harmonised concepts and questions for social data sources: Primary Principles, Demographic Information, Household Composition and relationships. Version 3.1 May 2015 http://www.ons.gov.uk/ons/guide-method/harmonisation/harmonisation-index-page/index.html

Category/Question	Rationale for using this tool	Scoring	Source
	Screening tools to detect symptoms of anxiety and depression		
Mental health - Edinburgh postnatal Depression Scale Please select the answer that comes closest to how you have felt in the past week	The EPDS was chosen as the screening tool to detect symptoms of depression. Showing higher sensitivity and specificity when assessed against PHQ-9 in a comparison study. The tool was specifically validated for use in the perinatal period and is widely used. It is also recommended by NICE (2014).	Cut off score ≥13 0-6 nil 7-12 mild 13-18 mod 19-30 severe	Cox et al. 1987
Mental health - Generalised Anxiety Disorder-7 Over the last 2 weeks how often have you been bothered by the following problems?	None of the screening tools to assess symptoms of anxiety were designed specifically for use in the perinatal period. The STAI has the highest sensitivity and specificity (Bengtsson 2016) but due to financial constraints was not used in this study. Using the GAD-2 would require further screening. The GAD-7 was chosen as it performed better than the EPDS-3 and PASS and is also recommended by NICE (2014).	Cut off score ≥10 0-4 nil 5-9 mild 10-14 moderate 15-21 severe Symptoms of anxiety	Spitzer et al. 2006

Screening tools to assess known factors associated with poor mental health in the perinatal period

Category/Question	Rationale for using this tool	Scoring	Source
The MacArthur Scales of Subjective Social status Please circle where your family would be on this ladder	Used to assess personal relative standing in society.	N/A	Goodman et al. 2001
Social support and networks To what extent do you have enough money for the following things in your family?	Used as an alternative to asking about income. Income is relative; this tool enabled an understanding of individuals ability to meet their needs.	Scoring: 1=Not at all adequate 2=seldom adequate 3=somewhat adequate 4=usually adequate 5=almost always adequate Scoring Summed or averaged or item frequencies	Dunst 1994
Adaptive functioning We would like to ask you some questions about your day-to-day life and routines	Modified by building blocks selected questions have been drawn from the Community Life Skills and Difficult Life Circumstances scales, as well as the MCS, the Born in Bradford Study.	Sums and frequencies can be reported	Bernard 1999

Category/Question	Rationale for using this tool	Scoring	Source
Generalized Self-efficacy Scale Which statement best describes how you deal with the following problems?	The scale was created to assess a general sense of perceived self-efficacy with the aim to predict coping with daily hassles as well as adaptation after experiencing all kinds of stressful life events. The scale is designed for the general adult population.	Scoring: 1=Not at all true 2=Hardly true 3=Moderately true 4=Exactly true Scoring range from 10-40	Schwarzer and Jerusalem 1995
Multidimensional Scale of Perceived Social support We are interested in how you feel about the following statements	The MSPSS has good internal and test-retest reliability as well as moderate construct validity. As predicted, high levels of perceived social support were associated with low levels of depression and anxiety symptomatology.	Total Scale: Sum all 12 items Significant Other Subscale: Sum items 1, 2, 5, & 10 Family Subscale: Sum items 3, 4, 8, & 11 Friends Subscale: Sum items 6, 7, 9, & 12	Zimet 1988

3.3.6 Women's interviews

Discussing mental health still carries stigma for some, therefore interviews rather than focus groups were chosen as the best way to explore mental health, allowing participants' freedom to express themselves without feeling judged by their peers. In addition the practicalities of getting a group of women together during pregnancy to attend a focus group, many of whom were still working, would have been difficult. Semi structured interviews were chosen to allow exploration of women's mental health, the impact on themselves and their family and attempts to obtain support. Telephone interviews although more convenient and possibly less distressing when discussing sensitive issues, are not as suitable for lengthy interviews (Bryman 2008), therefore face-to-face interviews were planned. The downside of face-to-face interviews is participants may not provide truthful answers or may tell the researcher what they think they want to hear (Burnard 1991).

Interviews were designed to include 15-20 women who had expressed an interest during the survey phase of the study, scored EPDS ≥7 and / or GAD-7 ≥5, were still pregnant and had not been referred to the PNMHT or fetal medicine unit. These cut offs were decided upon to include women with symptoms of anxiety and depression ranging from mild to severe to encompass a range of mental health experiences. Debate surrounds the requisite number of interviews, a consensus reached by a group of experts suggested 14 as an ideal number, yet some studies have included only one participant (Baker and Edwards 2012). Interviews were scheduled to take place between 34 weeks gestation and birth. Practical issues of time and availability of participants as well as the aims and depth of questions were considered (Baker and Edwards 2012). Saturation has been argued as another means of assessing the number of interviews required (Bryman 2008) and described as the point when repetition provides the confidence to make analytical generalisations (Baker and Edwards 2012).

Rationale for questions

Due to the stigma around mental health the decision was made to avoid words which could cause discomfort. Use of the words mental health, anxiety and depression were avoided during the interviews unless mentioned first by the women. Rather, words such as *moods* and *emotions* or similar words for instance *sad, stressed* or *down* (Jesse et al. 2008) were used. Interview questions were informed by the literature, with a planned iterative process adding questions if new concepts arose from the interviews (Appendix 8).

Questions were designed to explore women's knowledge, experiences and interactions with healthcare staff regarding mental health and knowledge of voluntary and statutory support services available locally. Recommendations from a similar study suggested exploring women's own coping mechanisms (Furber et al. 2009), for which literature is sparse. Enquiries around access to information and informal supportive networks were included.

Data collection visual, narrative and creative research methods

Interviews and focus groups usually rely on verbal forms of communication to elicit data (Bagnoli 2009). Humans express and experience their worlds in more ways than just orally. Over the last 20 years visual methods as part of the research process have become popular as a way to look beyond text and numbers, to slow down answers to questions, allow a more in depth view of the topic or be viewed from a different angle (Prosser and Loxley 2008). Visual methods can be used to instigate and expand discussion, allowing thinking 'outside the box' using participants own reflexivity (Bagnoli 2009) and defamiliarisation of everyday meanings can be explored to produce new meaning (Mannay 2010).

Visual methods can also be used as a method of data generation or as part of the analysis. Recognising interpretation of images may result in different perspectives between researcher and participant (Mannay 2016) is important and should be planned for. Also using visual methods could result in the participant leading the interview rather than the researcher (Prosser and Loxley 2008) and therefore not achieving the aim of the research if not carefully thought out.

Various methods have been incorporated into research studies. The use of photos, paintings, drawings and mind maps (Prosser and Loxley 2008) have been used with children as a way to open up conversations (Bagnoli 2009). The downside in using visual methods with adults is they may be reticent as they are less likely to use these methods in day to day life (Bagnoli 2009). The use of timelines, collaging and sandboxing have been used to discuss alcohol, smoking and infant feeding as a way of opening up conversations. One study incorporated collage and sandboxing as methods of data collection. Participants were asked to think about how pregnancy impacted their everyday lives, they were sent a template of a pregnant woman and items to make a collage, which were discussed at the interview. Sandboxing involved the participant and researcher using 3D figures and objects to explain what pregnancy was like on a day to day basis (Grant et al. 2019). Another study of didactic pairs of mothers and grandmothers attended interviews about breastfeeding using artefacts to initiate

conversations and allowed reflection of their experiences of motherhood and infant feeding in preparation for the interview (Grant et al. 2018).

The timeline

For this study the use of a timeline or mind map was developed as a way of discussing women's mental health experiences. With visual inspection intended to trigger memories and explore the lived experiences of women with mild to moderate mental health problems during pregnancy. The timeline was designed to highlight periods along the life continuum from childhood and project thoughts forward to the period after birth (Appendix 9). Advice was sought from a researcher experienced in using visual methodologies who suggested using timelines requires instructions to make completion clear (Personal correspondence, Aimee Grant, 2017). The option of the women drawing their own timeline was also provided in order to accommodate the users' preferred method of expression to enhance reflexivity (Mannay 2016). Analysing the visual data was not planned; its aim was to evoke memories in a way asking a question cannot do. Use of the timeline is discussed further in chapter five.

3.3.7 Midwives' questionnaire development

The aim of the midwives' questionnaire was to explore midwives' experiences of caring for women with perinatal mental health problems and their training needs. Using a previously designed questionnaire was preferable; as this provided a means of comparison and would have been validated (Bryman 2008). Attempts were made to obtain a questionnaire developed by a midwife and used in the UK with qualified and student midwives. The primary aim was to understand their level of education, confidence, knowledge and experience pertaining to perinatal mental health (Ross-Davie et al. 2006). Having been unable to obtain the former questionnaire, permission was obtained to use one developed in Australia. The '2000 Victorian Survey of Midwives' was originally developed to explore midwives' attitudes, skills, knowledge and experiences of caring for women who had mental health problems during the postnatal period (McCauley et al. 2011).

Where required, the language in the questionnaire was adapted to reflect use in the UK. Open ended questions were removed and the rest reworded to perinatal mental health rather than specific to postnatal mental health (Appendix 10). After modification, the questionnaire was piloted by three midwives and took under 10 minutes to complete (Bryman 2008). A few comments were made about the word *anhedonia*, an unfamiliar word for midwives. A midwife suggested adding 'please turn over' on page five to ensure the last section of the form was completed, this was agreed and added.

Data entry

While entering the variables from the questionnaires into IBM Statistical Package for the Social Sciences (SPSS) Statistics 25 (IBM Corporation 2011) to check usability, an error was noted in question five with 'anxiety' being entered twice into the options available. This was checked against the original document where the error was also noted and highlighted to the previous author who stated they would update their own copy. The duplicate answer was deleted from the questionnaire.

Paper copies rather than electronic were chosen as the method of distribution. NHS emails are restricted to work computers, where time and access are an issue. Also 'older' midwives commented they were not very computer literate and may have been discouraged from completing the questionnaire. Having access to both options may have resulted in duplication which could not be checked due to the anonymity of the questionnaire.

3.3.8 Midwives' focus groups

A recent systematic review found 15 of the 22 studies reviewed, used only surveys to explore experiences of midwives supporting women with perinatal mental health problems (Noonan et al. 2017). For this study midwives' questionnaires were planned to provide an overview of practice and experiences. Discussing similar topics in a follow up focus group allows deeper insight into the issues raised. Focus groups are useful in creating a platform for discussion amongst a group with a common interest. These were chosen as the best method of data collection, with agreement or dissent to allow exploration of views and possible consensus. Focus groups have the advantage of collecting data from a larger group of participants over a short period of time. Care is needed to provide quieter members of the group opportunity to speak, the researcher and a moderator were planned to guide the discussions (Nagle and Williams 2013).

Optimal size of focus groups is between seven to twelve participants (Nagle and Williams 2013). Three groups were intended, taking into consideration the timeframe and practicalities of getting a group of midwives together, with one focus group unlikely to be enough (Bryman 2008) to generate data. Sampling was selective for one focus group to include the team who provide support for women with extra social needs such as asylum seekers. Self-selection was planned for the other two groups to include a wide range of experiences and length of service as midwives. These ran concurrently with interviews with pregnant women and the midwives' questionnaire and were an iterative process to allow topics which arose to be explored further.

Rationale for focus group questions

A systematic search of seven health databases was conducted by Legere et al. (2017). They appraised 12 studies published between 2006 and 2015, which assessed education for health care providers in relation to perinatal depression. Recommendations included further research to identify appropriate training for health care providers caring for women at risk of developing perinatal depression. Studies assessing the outcomes of several training modules for midwives revealed even those which showed a difference in knowledge and understanding, were seen as expensive and sometimes unsustainable (Ross-Davie et al. 2007). Questions were planned based on topics in the women's interviews and midwives' questionnaires. The aims of the focus groups were to explore midwives' experiences of caring for women's mental health, primarily in the antenatal period and explore experiences of clinical practice, knowledge and training and the availability of support services for women.

3.4 Data analysis

3.4.1 Triangulation of data

Data collection from multiple perspectives can provide opportunity for triangulation to increase validity (Moran-Ellis et al. 2006; Silverman 2010) by supporting, explaining or challenging findings (Brannan 2005; Silverman 2010). Triangulation is an epistemological claim concerning what more can be known about a phenomenon when the findings from data generated by two or more methods are brought together (Moran-Ellis 2006). In this instance a comparison of women's experiences explored at interview with that of the data from midwives focus groups and questionnaires built an overall picture of service provision and support for women's mental health during the perinatal period.

3.4.2 Analysis plan for women's questionnaires

Statistical analysis of the questionnaire data was planned with single data entry onto the database. A second person independently checked the data and corrections were made. Baseline and demographic characteristics were described using descriptive frequencies. Anonymised data retrieved from the maternity records system was planned to show representation of the sample.

The aim of the analysis of the questionnaires was to answer study objective one. Specific questions were prepared:

1) Explore if symptoms of anxiety or depression are associated with, social support networks, subjective social class, Welsh Index of Multiple Deprivation

(WIMD) scores, adaptive functioning, self-efficacy or social support networks (three groups).

2) Identify if symptoms of anxiety or depression are associated with age, partner, parity, education, employment, previous mental health history, ethnicity or profession.

3) Perform analysis to predict relationship between screen positive women and significant variables.

Normality was explored using Shapiro-Wilk's test ($p<0.05$), and histograms and box plots to assess skew and kurtosis prior to analysis. The primary objective was to assess the relationship between anxiety and depression symptoms and sociodemographic factors, self-efficacy and social support. Correlations were explored between the screening results and MSPSS, self-efficacy, adaptive functioning subjective social class, WIMD scores and social support networks using Persons (parametric) or Spearmen's (non-parametric). EPDS cut off of ≥13 was taken to indicate symptoms of probable depression and a GAD-7 cut off of ≥10 used to indicate symptoms of probable anxiety. These dichotomous variables were analysed in group comparisons against sociodemographic data; age, national identity, ethnicity, education employment, profession and partner. From these results data analysis was performed on significantly correlated variables ($p>0.1$) to assess relationships and confounders, between the dependent variables EPDS and GAD-7 and the independent variables.

3.4.3 Analysis of midwives' questionnaires

The Midwives' questionnaire was an explorative descriptive survey design (Polit and Beck 2004) and was analysed using SPSS. Frequency distributions were produced for each variable of the questionnaire. Descriptive statistics aim to describe data rather than find correlations or causality. This was the most appropriate method due to the categorical nature of the questions and to enable comparison with studies using the original questionnaire.

3.4.4 Thematic analysis of interviews and focus groups

Qualitative descriptive approaches such as descriptive phenomenology, content analysis, and thematic analysis have been described as suitable for researchers who wish to employ a relatively low level of interpretation (Vaismoradi et al. 2013). Braun and Clarke's (2006) thematic analysis does not require a specific theoretical framework but is a method in its own right. It is a descriptive approach described as "a method for identifying, analysing and reporting patterns (themes) within data" (Braun and Clarke 2006, p. 79). It is useful for exploring people's views, experiences and perceptions and

was chosen as the most suitable way of analysing the data generated from the interviews and focus groups.

In thematic analysis the importance of a theme is not necessarily dependent on quantifiable measures, but rather on whether it captures something important in relation to the overall research question (Spencer et al. 2003; Braun and Clarke 2006). This study used primarily an inductive approach where the text is reviewed with an open mind in order to identify meaningful ideas to answer research questions. Deductive reasoning is the opposite, where the researcher looks for predetermined, existing ideas set out during the study design.

Transcribed recordings from the interviews and focus groups were entered onto NVivo 11 software. To reduce coding bias and improve rigour a second person independently coded a transcript and a consensus of codes were prepared.

Braun and Clarke's (2006) recommend six stages of analysis. As suggested, they were not specifically followed in the order described. Further explanation of the process is discussed in chapter six.

The six suggested stages are:
1) Familiarisation of the data by actively reading and rereading the transcripts or listening to audio recordings whilst making notes.
2) Coding by systematically reading the data to generate ideas about what the data is saying.
3) Combining, rearranging and splitting codes until they fit together into categories and overarching themes.
4) Rearranging themes, so they are distinct but each theme flows.
5) Refining and defining themes and subthemes and providing them with a name to capture the essence of each theme.
6) Writing up the analysis using extracts from the data to illustrate each theme.

3.5   Permissions process

3.5.1 Selection of the study site

The site was chosen for practical reasons of access and locality. The medium sized maternity unit with an annual birth rate of 5685 (2015-2016), serves a diverse population in terms of sociodemographic and ethnic mix. The consultant led unit provides inpatient and outpatient care for women with complicated pregnancies and includes a fetal medicine unit. The unit also contains a midwifery led unit which

provides intrapartum and postnatal care to women who are at low risk of developing complications during labour or after the birth.

All women booked to give birth at this Health Board attend antenatal clinic at either this hospital or the stand alone clinic at the neighboring hospital for an ultrasound scan (USS) at around 12 to 15 weeks gestation. Higher rates of mental health problems have been noted at 15 weeks than at 30 weeks gestation (Bennett et al. 2008), therefore recruiting at this time aimed to capture the majority of women with mood disorders. For pragmatic reasons the decision was made to recruit women from only the one antenatal clinic where the majority of pregnant women attend their booking appointment. Approaching an opportunistic sample to take part in the study intended to ensure a cross section of the pregnant population would be invited to participate.

The advantage of using a site known to the researcher having recruited women in the same antenatal clinic for the Grown in Wales study, meant the layout and running of the clinic were familiar. Permission to conduct the study was obtained from the Head of Midwifery early in the study design. Pressure on midwives to complete the questionnaires was overcome by anonymising them and providing a box for completed questionnaires enabling midwives to decide whether to return them or not.

3.5.2 Positionality

Reflexivity is an important feature of qualitative research, as it enables researchers to reflect on possible ways in which they could influence the study (Richens and Smith 2011). As a midwife with no personal experience of mental health problems, who is older and not pregnant they could be seen as an 'outsider' to the pregnant population. On the other hand as a woman, mother and partner they would be considered an 'insider'. This dichotomy is complicated by the fact that these are not always constant positions, moving between and being both insider and outsider (Deutsch 1981). Critics argue is not always possible to position yourself as an insider or outsider but it still provides a useful way to assess methodology (Mannay 2010).

3.5.3 Ethics

Research is required to enable nurses and midwives to comply with the NMC Code which states practice must be based on the best available evidence. In the process of conducting research the interests of the participant must always outweigh those of science and society (Health Research Authority 2017). All research carried out in NHS services goes through a series of approvals before access is allowed to approach service users and staff and invite them to take part. Regulations in the form of legal, ethical and professional guidelines govern research studies. This study was conducted

in accordance with the Helsinki agreement (World Medical Association 1964), Good Clinical Practice guidelines (Vijayananthan and Nawawi 2008) and the NMC Code for nurses and midwives (Nursing and Midwifery Council 2015). Data were kept confidential in accordance with the Data Protection Act 1998 (UK Government 1998) and NHS Caldicott Guardian 2010 (UK Government 2010). Sponsorship was secured from the university and ethical approval from an NHS Research Ethics Committee (REC) along with local research and development (R&D) agreement at a local level.

Critics have argued applying the same ethical standards and permissions to qualitative studies as to randomised control trials can limit research (Pollock 2012). This lengthy process could take precious time out of the study schedule. Requirements for participant information and consent tend to be assessed using the same guidelines regardless of research design or methodology chosen. Having said that, guidelines and principles for researchers can provide a basis for the participant to make decisions and think through all possible scenarios. In addition ethical issues could provide researchers with confidence and foresight to prepare for the most common concerns that may arise.

The permissions process started in May 2016 with a completed protocol sent to the research and innovation services at the university to apply for sponsorship. This approval addresses the need to safeguard participants and researchers, enhance ethical and scientific quality, minimise risk and monitoring. Populating the integrated research application system (IRAS) forms was necessary as the study was conducted on NHS premises. This was designed as a streamlined process for applying for REC and local R&D approvals with one application.

Initial application to NHS ethics in September 2017 received an unfavourable opinion for the following reasons:

1) The protocol did not describe the development of the women's questionnaire in enough detail to ensure the design was able to answer the study question. It was recommended the midwives' questionnaire would have been better as a training needs analysis.
2) The title of the study was ambiguous.
3) Clarification was required over the referral process in the event of poor perinatal mental health being detected.
4) Clarification was required stating the process in the event of incidental disclosures of malpractice or abuse.

5) The participant-facing study documentation (with the exception of the questionnaires) needed translating, and Welsh language versions should be made available to participants – in accordance to the provisions of the Welsh Language Act.

The design of both questionnaires were explained at length stating the one for women contained individually validated tools and the aim of the midwives' questionnaire was to explore experiences of midwives looking after women with mental health problems and not explicitly around their training needs. The REC also objected to the original title 'Perinatal mental health: a mixed methods study exploring the experiences of women and midwives' due to concerns it was misleading the midwives and could imply it was referring to their mental health. However the word perinatal in itself denotes only pregnant or women who have recently given birth will be involved. A discussion was held with Health and Care Research Wales regarding Welsh translation. Assurance was provided that an agreement had been made at a high level and bilingual information was not required for research in Wales (See reflexive comments – Appendix 22, p 381).

Further clarification around referring women who disclosed mental health problems, child protection and disclosure from health care staff of professional misconduct led to favourable opinion at the next ethics committee meeting, Wales Research Ethics 17/WA/0319 on 10th October 2017 (Appendix 11). Applications to R&D progressed relatively smoothly and at a quick pace, when REC approval was eventually obtained R&D were only waiting for the letter of approval from REC. This was followed by adoption onto the National Institute of Health Research (NIHR) portfolio which occurred on 10th November 2017.

3.5.4 Consent

Nurses, midwives, and other health professionals are obliged to obtain consent in their clinical practice, (Nursing and Midwifery Council 2015, p. 7) often in the form of verbal communication, which should be clearly documented (World Health Organisation 2017). This principle applies also to research.

Participants were provided with detailed study information prior to recruitment, given adequate time to consider whether they wished to take part and had an opportunity to ask questions. The notion of 'adequate' time to read and digest the participant information takes arguably longer when deciding to join a clinical trial compared to filling in a questionnaire. The closer the research is to standard clinical practice, the less need there is to provide patients and service users with detailed and lengthy

information about the research. Calls have been made for 'micro-ethics' based on the researchers' judgement and integrity (Pollock 2012) or an 'ethical process' to be introduced (Chenhall et al. 2011) which would allow more flexibility.

Nevertheless the majority of research requires valid informed consent; validity referring to the voluntary nature of consent without coercion, after being informed with the provision of comprehensible information. The person consenting should have capacity to make the decision (National Health Service 2019a) and it is the responsibility of the researcher to assess if a person has capacity to provide consent (UK Government 2005). Capacity is not constant, pain, stress and lack of time to consider decisions need to be taken into account as well as the purpose of consent. A person may have capacity and be competent to fill in a brief questionnaire but not to consent to a phase one drugs trial.

Prior to providing written valid informed consent, participants were informed of their right to withdraw consent at any time without compromising their care. Proportional consent has been suggested for data collection such as filling in a questionnaire, where formal written consent may not be required, with the act of completion indicating consent (Health Research Authority 2017), and this was the process used for the midwives' questionnaires.

3.5.5 Psychological distress and safeguarding

Researchers are ethically obliged to consider the impact of the research on participants (World Medical Association 1964). For some participants, the opportunity to talk about their experiences could be an empowering or therapeutic process, for others it might be distressing. As the study explored mental health problems there was a possibility participants could be sensitive about the issues discussed. Questions and language used on the information leaflet, consent form and interview schedule for women went through public engagement to ensure the most sensitive and acceptable wording was used. The researcher, as an experienced midwife, had extensive experience discussing sensitive issues with women during the perinatal period.

Discussion with a consultant perinatal psychologist on the Grown in Wales study provided guidance on the boundaries for referral. The recommendation was an answer of 'yes quite often' to the statement 'the thought of harming myself has occurred to me', on the EPDS, warranted immediate discussion with the woman and referral to appropriate services. Guidance was also sought from the local PNMHT, who provided further advice on the referral process. For women requiring immediate referral, contact with their general practitioner for 'crisis support' was advised.

Consent was sought from all women completing the questionnaires and attending the interview to refer women to the appropriate services should serious concerns arise about their safety. Advice was written in the women's information leaflets advising them of support services available if they had any concerns about the topics discussed. Similarly midwives were provided with written and verbal information about who to contact including details of the Employee Wellbeing Service.

3.5.6 Data management

Consent was obtained for data collection from NHS records. Participants were reassured personal information would only be shared within the research team unless there was disclosure by the women or midwives of risk of harm to themselves or others. Information provided in the participant information leaflets and consent forms ensured they were aware information could be passed onto the relevant authorities with or without their permission. The Health Board's safeguarding procedures were to be followed if there was disclosure of abuse or misconduct.

The recruitment log with contact details was kept separately from the questionnaires, transcripts and clinical data, which were linked only by the study identification number. Paper copies of data were stored in a locked filing cabinet at the hospital or University, accessible only by the research team. Audio recordings were uploaded and stored on a password protected server maintained by the University network. The data will be kept for 15 years from the end of the study, as stated in the University's Research Governance Framework Regulations for clinical research.

To ensure confidentiality, interviews and focus groups were held in locations providing privacy and a room available in clinic for women to complete consent forms and questionnaire in private if required. Consent was obtained to allow anonymised quotes to be used in publications. Women and midwives were informed data that could be used to identify an individual would not be published but direct quotes may be used and if necessary, would be sensitively edited to avoid identification. Audio recordings were anonymised at the point of transcription. Pseudonyms will be used in publications to ensure anonymity and participants were given the opportunity to choose their own.

3.6   Summary

This chapter provided the rationale for the research process. The study design was based on the aims and objectives of this study. Multiple data collection methods and analysis were planned to provide an overview of perinatal mental health experiences from the perspective of the women, and midwives who provide their care.

Self-completed questionnaires and interviews with women were intended to understand the prevalence and explore women's experience of mental health problems during pregnancy. Screening tools for the questionnaire were evaluated and the EPDS and GAD-7 chosen as the most suitable way of assessing women's mental health for this population and are recommended by NICE (2014). EPDS and STAI were used in a similar study in late pregnancy at the same Health Board, however STAI was limited by copyright. Sociodemographic questions were based on ONS format. Individually validated screening tools to detect commonly found factors known to be associated with perinatal mental health were selected. Interviews were designed to explore women's day to day experiences of mental health, coping strategies and support, along with barriers to receiving care. A timeline was used to trigger memories of particular time points and capture events over their lifetime, particularly in pregnancy, to enable a comparison with previous research which has primarily been conducted in the postnatal period.

As midwives are the main health professionals who care for women during the perinatal period, questionnaires and focus groups were planned to explore their readiness to support women's mental health. The questionnaire chosen had been previously used with midwives in Australia to explore their knowledge, skills and training. Where required, the language in the questionnaire was adapted to reflect use in the UK. Focus groups planned to expand on topics in the questionnaires.

A brief description was provided regarding planned data analysis of the questionnaires. Data management and analysis plan for the women's questionnaire included frequencies and description of sociodemographic characteristics. Statistical analysis aimed to predict relationships between women who screen positive and significant variables. Descriptive analysis for the midwives' questionnaire was planned. Braun and Clarke's (2006) thematic analysis was selected to analyse data generated from interviews and focus groups.

A medium sized maternity unit in South Wales was chosen as the recruitment site. Gaining permission to undertake research requires patience and a thorough review of all information and procedures to ensure the safety of participants and researcher. Permissions from NHS REC and R&D were obtained prior to recruitment. A description of the site and ethical considerations of consent and confidentiality were discussed, with emphasis on the psychological wellbeing of participants.

Chapter four describes the selection and recruitment of women in early pregnancy into the survey phase of the study. Statistical analysis presents the sociodemographic

characteristics of women consented into the study and anonymised data from a larger cohort of women from women booked for care at the same hospital. The relationship between mental health, sociodemographic characteristics, self-efficacy and support networks are described.

Chapter four – Recruitment and results of women's questionnaire

4.1   Introduction

This chapter provides details of the first phase of the study. The aim was to assess the prevalence of mental health problems in early pregnancy and the relationship between these and sociodemographic characteristics, self-efficacy and support networks. Data collection and analysis methods, questionnaire design, the permissions process and recruitment site were described in chapter three.

This chapter explains the manner of recruiting women in early pregnancy and inviting them to complete a questionnaire. The process of data entry and data checking are described. Sociodemographic characteristics and mental health history of participants are presented. To assess the generalisability of the study results to the local population, characteristics of participants are compared to women who presented for antenatal care at the same hospital. A comparison of sociodemographic characteristics, support networks and mental health problems are presented.

4.2   Method

Approximately 125 women per week attend the maternity 'booking' clinics. With full time recruitment and an uptake of 50%, it was estimated to be achievable within eight weeks. A recently conducted study 'Grown in Wales' at the same hospital, identified amongst 364 pregnant women recruited, 120 (33%) had symptoms consistent with anxiety or depression (Janssen et al. 2018). Therefore, in order to enable follow up of 20 women with mental health symptoms in late pregnancy the recruitment target was set at 300.

From early November 2017, study information (Appendix 12) was added to the 'pregnancy information packs' provided to all women when they presented in early pregnancy at their general practitioners. Providing information at this time gave women several weeks to consider whether to join the study, exceeding the recommended 24 hours suggested as the period between reading the information and providing informed consent (Ledward 2011). Community team leads for all community midwives who would be discussing information with women, were contacted to ensure they knew about the study and were able to answer questions if asked. Posters were also placed in the antenatal clinic once recruitment commenced.

Potential recruits were pregnant women attending their initial booking appointment at a medium maternity unit in Wales. All women who intend to give birth within the Health

Board attend clinic for their booking appointment and an USS at around 12 to 15 weeks gestation. This time period was chosen as higher rates of mental health problems have been noted at 15 weeks than at 30 weeks gestation (Bennett et al. 2008), therefore recruiting at this time aimed to capture the majority of women with mental health symptoms in pregnancy. The disadvantage is early pregnancy is often when many women become anxious or feel physically unwell due to 'morning sickness'. They therefore may present with symptoms of anxiety or depression which resolve later in pregnancy. The aim was to recruit a representative, cross section of the pregnant population; nevertheless, the inclusion criteria and methods resulted in recruitment of an opportunistic sample.

All women are offered an USS to confirm a viable pregnancy on attending the clinic. NHS-employed members of the clinic team acted as 'gatekeepers' wherever possible to ensure eligibility prior to being approached and invited to participate in the study. The use of a gatekeeper who is detached from the research can provide a layer of impartiality in the process (Gallo et al. 2012) and reduce coercion. On the negative side busy staff acting as gatekeepers may make decisions for potential participants and reduce the ability for the researcher to communicate the study. This was not found to be a barrier in this study.

Inclusion criteria

- Aged 18 years and over
- Sufficient spoken and written English to complete the study questionnaire and be interviewed in English
- Confirmed viable pregnancy of ≤18 weeks gestation

Exclusion criteria

- Pregnancies where there was a confirmed or suspected serious fetal anomaly

Women were approached and provided with a brief verbal explanation of the study. Spare copies of the information sheet were available in the clinic and time was given to read the information before deciding whether to take part, emphasis being placed on the voluntary nature of consent and their right to withdraw at any time without compromising their care. A balance is required between enough information to cover the important issues and possible consequences and information overload (Ledward 2011). A room was provided for women to complete their consent forms and questionnaire in private, if required. The last page of the questionnaire consisted of a detachable sheet for contact details if women had provided consent to be contacted to

participate in a follow up interview and also to request a summary of the study findings (Appendix 6, page 9).

Prior to leaving the clinic the EPDS was scrutinised to assess the severity of depressive symptoms and the score of three on question 10, 'The thought of harming myself has occurred to me', indicating suicidal intent. Information provided in the participant information leaflets and consent forms ensured women were aware their information could be passed onto the relevant authorities with or without their permission if concerns for their own well-being, or others, were noted. The Health Board's perinatal mental health guideline and safeguarding guidelines provided further guidance for referral if required. Following completion of the questionnaire, demographic data were extracted from the women's NHS records to allow follow up, along with age, gestation, gravida and parity.

4.3   Recruitment process/data collection

4.3.1   Questionnaire

Women were recruited into the study between 24th November 2017 and 19th January 2018. During this period, 840 women were expected at the screening clinic in the hospital. Women were recruited from 59 of the 74 screening clinics during this period (Figure 4.1). The researcher was not present at 15 clinics and therefore 158 (19%) women were not approached.

At the clinic sessions attended, 31 (5%) women did not attend their appointment and 152 (22%) did not fit the inclusion criteria: five (1%) were under 18 years old, 72 (10%) did not have sufficient English, 15 (2%) were found on the USS to have a non-viable pregnancy and 41 (6%) were over 18 weeks gestation. A further 19 (3%) were not approached as they fit the exclusion criteria, for example an anomaly had been identified on the USS. Of the 499 eligible women, 57 (11%) were missed due to women passing through the clinic without time to be approached or complete the questionnaire.

Only a few women remembered seeing the information in their booking packs and less had read it. Several women noticed the poster in the clinic and one approached the desk asking if she could join the study. Numerous women acknowledged mental health in pregnancy as being an important topic for research. A number of partners mentioned they should also be given a questionnaire to compare their results, indicating they had noticed a change in their partners' mood. Others who were researchers themselves, felt obliged to join even though they were reminded they could decline. Conversely, comments about data collection and security were raised by a number of women, who
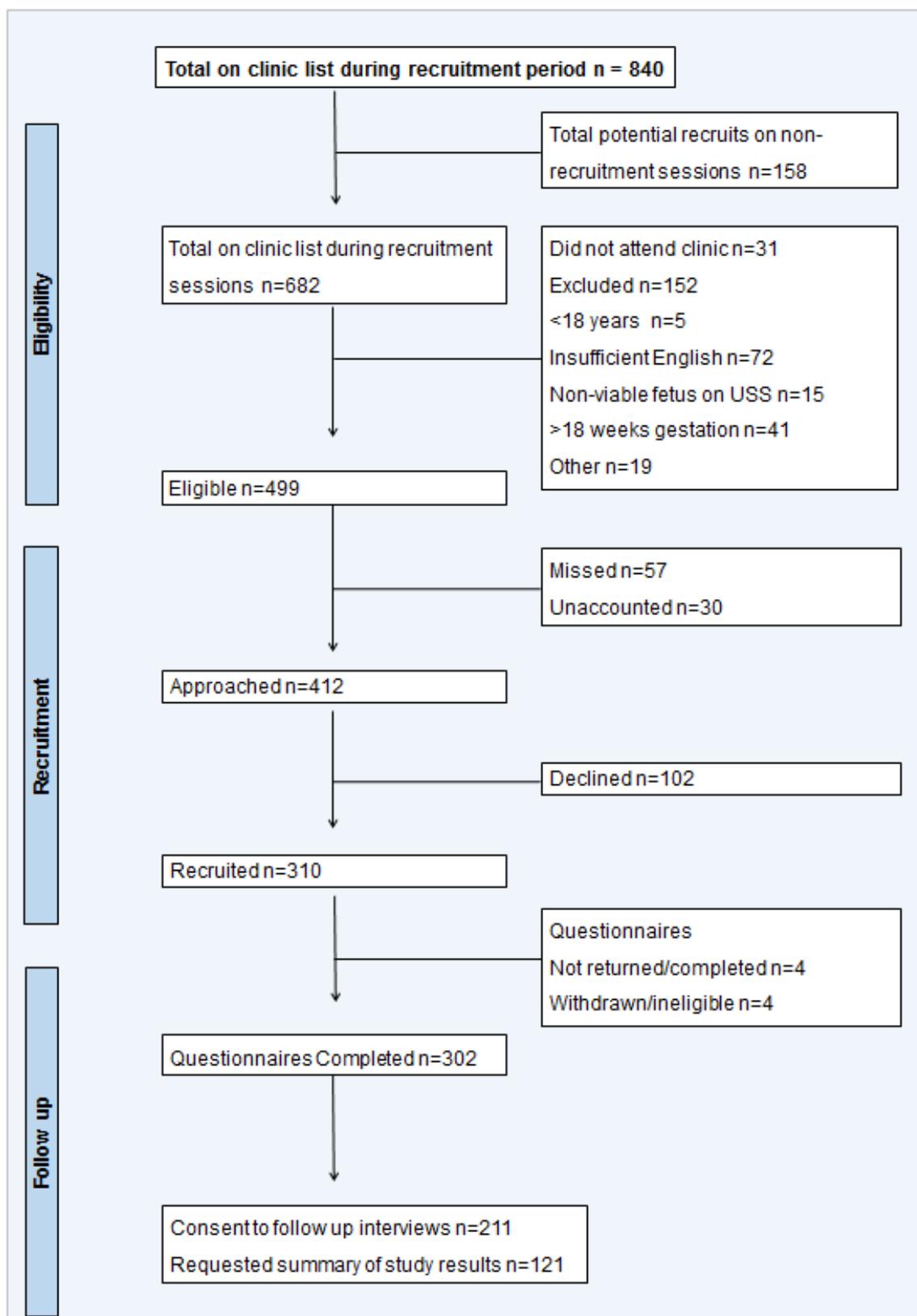
Figure 4.1 Recruitment of women in antenatal clinic.

declined the study because of their concerns. One suggested the university having access to the data was too broad, even after highlighting it was only the research team who would have access. Very few women declined to participate, preferring to say they were busy, had dyslexia or could not read (See reflexive comments – Appendix 22, p 382).

Many women suggested they would be happy to complete the questionnaire without reading the information leaflet or signing a consent form. It was reiterated for study participation consent was required. The purpose of the study was repeated by the researcher with an opportunity given to ask questions and information reinforced highlighting the important points with reference to the consent form. Written consent was obtained; one copy of the consent form was filed in the handheld notes, one copy retained in the Investigator Site File and a third given to the women (Appendix 13).

Participants were provided with a questionnaire to complete whilst in clinic. Response to the study was overwhelmingly positive, with four women who were not able to stay and complete the questionnaire keen to take it home and return it by post. However it became obvious within the first few weeks this was not going to be fruitful with only one questionnaire returned. Participants with mental health problems are less likely to return questionnaires (Heron et al. 2004) and as these were the focus of the study, retrieving completed questionnaires in clinic afforded the best option to include them. For the remaining recruitment period women were asked, prior to providing consent, if they would complete the questionnaire before leaving the clinic. This appeared to work well and was only implemented when the clinic was quiet and women were seen quickly and therefore felt an extra few minutes completing the forms were acceptable.

The content of the questionnaire received comments, several women asked for an explanation of the word 'adequate' which appeared in the questions related to financial matters (Appendix 6, page 5). An explanation was offered, suggesting 'adequate' could be replaced with the word 'enough', for example:

Question: Have you enough money to pay your monthly bills?

Answer: Usually enough.

A number of women verbally explained the reason for their scoring of the EPDS and GAD-7, stating the reason for their change in mood was not related to pregnancy but due to the death of a relative or an illness. A couple of women asked if having an underlying mental health disorder would make them ineligible. It was reiterated that the EPDS and GAD-7 related to the previous two weeks and the study was designed to assess a woman's mood at the beginning of pregnancy regardless of her situation.

Question 10 on the EPDS was checked prior to women leaving the clinic. Information was placed in the participant information leaflets and on the consent form informing women if there were 'concerns about the safety of her or others then appropriate services would be informed with or without her consent'. Plans for referral included women in immediate danger to themselves would be referred to their general practitioner as recommended by the PNMHT team or if in no immediate danger, signposted to the information on the participant information leaflet. Also an entry would be made in the NHS records and information passed onto the community midwife as appropriate. Fears the statement would result in women declining to join the study did not transpire. In fact, several women were positive about the statement, stating they felt reassured they would be referred if there were concerns.

No women scored three on question 10 but six women scored two, and two of these also scored high on the total EPDS. The recruiting midwife spoke to them in a quiet room in clinic. Another woman who scored high overall on the EPDS was contacted by phone as she had left the clinic before being spoken to; it transpired she had already been referred to a consultant for support. All had a history of mental health problems, none were judged to be at immediate risk of harm, were being cared for by relevant professionals, had supportive families and stated they had no immediate thoughts of harming themselves. Follow up was offered and they were made aware of support services.

Another two women who had no record of any mood disorders on their questionnaires were approached and options for follow up were discussed, with one accepting information being passed onto the community midwives and documentation on the maternity information system. Again, they were reminded of support services available and deemed by the midwife not to be an immediate danger to themselves or others.

It had been anticipated during the recruitment period there would be a 50% uptake of eligible participants. This target was met and recruitment continued until 310 (62%) women had consented to join the study slightly over the 300 target sample size, to allow for a small dropout rate; four (1%) did not return the questionnaire or provided insufficient data to include them in analysis, and four (1%) were withdrawn after recruitment when it was noted they fell outside the inclusion criteria ≤18 weeks gestation.

Consent to be contacted for follow up interviews was received from 211 (70%) and 121 (40%) requested a summary of the study results. A number of women stated they

would have been happy to take part in the follow up interviews but knew they were moving out of the area in the next few months.

4.3.2 Booking population

To compare the characteristics of participants to the general pregnant population of women booked for maternity care at the Health Board, anonymised data were extracted from the electronic maternity information system. This included all women booked from 1st June 2017 to 31st May 2018 and encompassed the period of recruitment of women into the study. Permission to access the data was obtained from the information technology team overseeing the application and relevant paperwork completed, prior to a midwife with access to the database extracting the relevant information. The following data items were extracted: date of booking, age, ethnicity, occupation, mental health problems, mental health referrals, medication, parity, marital status and employment status. Data for 6312 women were extracted and stored on a password protected server maintained by the Health Board and then transferred as an Excel spreadsheet to the university.

4.4   Data management

4.4.1   Questionnaire

Data from the questionnaire and the NHS records of participants were entered onto SPSS and checked for errors by producing frequency tables for each variable and examining minimum and maximum value, outliers and missing data. Possible errors were checked against the questionnaire and corrections made if necessary. Verification of data entry by a research assistant employed by the university comparing each variable against the questionnaire revealed an error rate of 0.2%. These errors were documented and changed after discussion between the person originally entering the data and the second checker. Where ambiguity arose, data management queries were formed and agreed with the supervisors and documented to ensure consistency (Appendix 14).

4.4.2   Welsh Index of Multiple Deprivation (WIMD)

The Welsh Government's official measure of relative deprivation was designed to identify small geographical areas in Wales with the 'highest concentration of several different types of deprivation', these include income, employment, health and education and related to material and social deprivation. Multiple deprivation includes more than one of these factors being experienced by a concentration of people in a given area. The database is provided on a publicly accessible website, postcodes of participants were coded and a socioeconomic status score obtained (Welsh Government 2014).

4.4.3 Booking population

Data from the NHS electronic maternity information system for the booking population were coded in Excel. Age, parity and ethnicity were recoded using the same variable codes as data generated from the questionnaire. Results for occupation were entered into the Office of National Statistics (ONS) database to obtain the occupation code (Office for National Statistics 2018). Some information was coded as missing due to ambiguity around the text entered into the NHS database, for example 'SAHP' abbreviation with no recognised meaning. Information which could not be classified on ONS for example, student or housewife, was entered into a separate variable, 'other work'.

Marital status was entered as married or single on the NHS records and therefore could not be recoded in a similar way to questionnaire data. Gestation was not obtained due to the NHS system recording the date of first contact with a midwife rather than the later booking appointment. Information obtained regarding mental health problems were recorded as 'no' or a list of conditions which was recoded into separate variables for anxiety, depression, stress, and 'other conditions'. Counselling was recorded, to match the variables in the questionnaire database. Medication in this pregnancy included any medication and was recoded to include only antidepressants. Once recoded the information was imported into a separate database in SPSS for analysis.

4.4.4 Missing data

Recognised management of missing data includes ignoring missing data if it is below 5% and missing at random (Kim and Mallory 2017) and imputation for higher rates, although replacing the mean can distort the results (Pallant 2011). Analysis showed the total missing data were 2.4%, with data missing at random. The majority (9.9%) of missing data related to questions about educational attainment. Rewording the question may have reduced this issue. The question asked 'What is your highest level of education?' Categories were not offered which led some women recording the type of institution rather than level of education which had been awarded. This was not detected in the piloted questionnaires as an issue. In hindsight using 'highest qualification' would have reduced the need to make some assumptions about qualification level.

The literature was searched for options on how to manage missing data for individual tools. Only one suggestion was found from an NHS website pertaining to the GAD-7 screening tool, recommending if one or two values were missing, these could be substituted with the average score of the non-missing items (National Health Service

2019b). To assess the extent of the missing data an analysis was run. If one variable was missing from a screening tool, the mean of all participants for a particular variable was imputed. Variables were imputed for a single item within EPDS (n=1), GAD-7 (n=6), social support and networks (n=1), adaptive functioning (n=6), self-efficacy (n=13) and social support (n=5). Correlation analysis was conducted using Spearman's *rho* on both sets of data using the above tools with the addition of Subjective Social Support score and age. The results showed no statistical differences with the exception of one measure, total adaptive score against GAD-7, imputed data p=0.061, without imputed data p=0.027. Due to minimal difference, missing data were not imputed.

For the remainder of analysis where scales had missing values, these were excluded from all analysis. The exception to this was the EPDS and GAD-7 which were the dependent dichotomous variables. To maximise the number of participants who could be included in the analysis, where there was one missing value on the EPDS (n=1) and GAD-7 (n=6) totals were calculated from the score available. The EPDS score with the missing value totalled eight, the maximum possible score for the missing variable would have been three. A score of eight or 11 would indicate mild symptoms of depression. Total GAD-7 scores for the six participants with a missing value, ranged from one to six, the maximum possible score for the one missing question was three. This would have changed the symptoms of anxiety from nil to mild for three participants but all remained below the criteria for probable anxiety. For one participant all scores were missing from the GAD-7, but the EPDS for this participant had been completed in full and therefore was included in the analysis.

4.4.5 Outliers

Data were visualised using box plots and frequency charts to observe outliers. When the MSPSS data were visualised, it was observed to have a cluster of 10 (3.3%) outliers which scored below 20 showing minimal social support, while the remaining 294 (94.7%) scored above 40.

During data collection several women commented they had selected the wrong end of the Likert scale 'strongly disagree' and had then crossed this out and reselected 'strongly agree' at the other end of the scale (Figure 4.2). During data entry it was noted 28 (9.1%) women had repeated this process. As the outlying scores cannot be assumed to be incorrectly completed, all participants were included in the analysis.

A previous study also reported this difficulty with reversed scoring of MSPSS in seven out of 87 participants in their study. They deemed the scores were reverse, since at retest two weeks later they scored high for social support. Furthermore when outliers were removed they showed a positive correlation with another social support tool at recruitment (r_s =0.23, p=0.040) and retest scores (r_s =0.25, p=0.018) (Calix 2004). Multiple ways of dealing with outliers have been reported (Aguinis et al. 2013) but no specific advice was found in articles validating the MSPSS.

Figure 4.2 MSPSS possible reverse scored.

MSPSS data were analysed with and without outliers. Differences were noted with significant other social support and friends' social support, changing from insignificant p=0.160 and p=0.157, respectively, to statistically significant p=0.004 and p=0.029 if the outliers were removed (Table 4.1). Because it cannot be assumed the outliers were reverse scored by the women completing the questionnaires, analysis was performed including the outliers, noting this may result in lower significance for social support.

Table 4.1 MSPSS with and without outliers.

Variable of interest	OR	95% CI	p
Social support – including outliers			
Total	0.98	0.96 to 0.99	**0.036**
Significant other	0.96	0.91 to 1.02	0.160
Family	0.93	0.89 to 0.98	**0.003**
Friends	0.96	0.91 to 1.02	0.157
Social support – without outliers			
Total	0.94	0.90 to 0.97	**0.001**
Significant other	0.84	0.74 to 0.96	**0.004**
Family	0.88	0.83 to 0.94	**0.001**
Friends	0.92	0.86 to 0.99	**0.029**

4.4.6 Checking normality

Data were checked for normality as assessed by Shapiro-Wilk's test ($p<0.05$), and histogram and box plot; only age was found to be normally distributed and therefore non-parametric tests were used throughout.

4.5 Results

4.5.1 Background characteristics of participants

Frequencies and descriptive statistics were run on data generated from 302 questionnaires to report participants' background characteristics (Table 4.2).

The majority (67%, n=204) of participants were aged between 25 and 35 years old, *mean* 31.1 (SD=1.13, *range* 18-45*),* with similar proportions of nulliparous (46.4%, n=140) and multiparous (53.6%, n=162) women. The majority (85%, n=256) were living with a partner. Mean gestational age was 12.2 weeks (SD=1.08, *range* 9-18). National identity was described as British (87.1%, n=263), of which 46% (n=142) identified as Welsh, the other 12.9% (n=39) included women from Australia, USA, Europe, Africa and Asia. Their ethnicity was recorded predominantly as White (84%, n=254), with the second largest group Asian (7.9%, n=24).

Most participants held a qualification at degree level or above (53%, n=160), were in full time (47.4%, n=143) or part time (27.2%, n=82) employment, of which 48% (n=145) were in the top three managerial or professional occupations as classified by the ONS. Just under one third (32.5%, n=98) of participants lived in an area considered to be in the lowest quartile for most deprived and just over a third (36.1%, n=109) lived in an area described as least deprived.

4.5.2 Comparison between participants and booking population

Routine data of 6312 women booked for maternity care with the Health Board included the study participants (Table 4.2). The booking population had a similar *mean* age 31.7 years (SD=5.76, *range* 16-57). Slightly higher proportion of the booking population was multiparous (55.9%, n=3529) compared to 53.9% (n=162) of participants. There was disparity between the way the data were collected for marital status, therefore a comparison could not be made. Amongst the booking population 42.3% (n=2671) were married, 39.6% (n=2497) single and 0.6% (n=40) divorced.

National identity was not recorded on the NHS records. To provide a comparison with participants, results were obtained from the 2011 census for Wales. A higher proportion of the people who lived in Wales recorded their national identity as Welsh (57.5%, n=1761673) compared to 46.7% (n=256) of participants (Office for National Satatistics 2011). The majority (74.6%, n=4706) of the booking population were of White ethnicity compared to 84.1% (n=254) of participants.

Education was not recorded on the NHS database and similar measures of education could not be obtained from UK or Welsh statistical data as a comparison. Employment were slightly lower in the booking population 63.8% (n=4024) compared to 76.5% (n=231) amongst participants. The proportion of unemployed or seeking work was higher in the booking population (7.3%, n=453) compared to 3.6% (n=11) amongst participants.

Table 4.2 Sociodemographic characteristics.

Background characteristics	Booking population n=6312	Participants n=302
	M (SD) R	M (SD) R
Age	31.7 (5.76) 16-57	31.1 (1.13) 18-45
Gestation		12.2 (1.08) 9-18
	n (%)	n (%)
Parity		
Nulliparous	2783 (44.1)	140 (46.4)
Multiparous	3529 (55.9)	162 (53.6)
Do you have a partner?		
Yes		256 (84.8)
Yes, but we do not live together		31 (10.3)
I do not have a partner		14 (4.6)

Marital status		
Married	2671 (42.3)	
Single	2497 (39.6)	
Divorced	40 (0.6)	
Not known	28 (0.4)	
Missing	1075 (17.0)	
National identity		
Welsh	174,391 (50.0)[*]	141 (46.7)
English	26,023 (7.4)	29 (9.6)
Scottish	1647 (0.5)	3 (1.0)
Northern Irish	669 (0.2)	1 (0.3)
British	73,001 (21.0)	88 (29.5)
Irish	1926 (0.6)	
Other	2770 (0.8)	39 (12.9)
Ethnic background		
White	4706 (74.6)	254 (84.1)
Mixed/multiple ethnic groups	191 (3.0)	14 (4.6)
Asian/Asian British	537 (8.5)	24 (7.9)
Black/African/Caribbean/Black	292 (4.6)	5 (1.7)
Other ethnic group	318 (5.0)	1 (0.3)
Missing	268 (4.2)	4 (1.3)
Highest level of education		
Postgraduate qualification		69 (22.8)
Degree or above		89 (29.5)
Higher education below Degree		19 (6.3)
A levels, vocational level 3		49 (16.2)
Trade apprenticeships		4 (1.3)
GCSE, vocational level 2		40 (13.2)
No qualifications		2 (0.7)
Missing		30 (9.9)
Employment situation		
In full time work	4024 (63.8)!	143 (47.4)
In full time education or training		5 (1.7)
In part time work		82 (27.2)
In part time education or training		2 (0.7)
Both in work and education or training		6 (2.0)
Unemployed and seeking work	453 (7.2)	11 (3.6)
Out of work not seeking work	1420 (22.5)	41 (13.6)
Other	29 (0.5)	11 (3.6)
Missing	386 (6.1)	1 (0.3)

Main occupation		
Managerial	110 (7.0)	15 (5.0)
Professional	510 (32.7)	86 (28.5)
Associate professional	236 (15.1)	39 (12.9)
Administrative	131 (8.4)	31 (10.3)
Skilled trades	26 (1.7)	2 (0.7)
Caring, leisure	272 (17.4)	39 (12.9)
Sales and customer service	163 (10.4)	17 (5.6)
Process, plant and machine operative	19 (1.2)	2 (0.7)
Elementary occupations	95 (6.1)	10 (3.3)
Missing		5 (1.7)
No occupation	**1977 (55.9)**	**56 (18.5)**
Student	193 (3.1)	5 (1.7)
Mother/housewife/carer	1777 (28.2)	28 (9.2)
Welsh index of multiple deprivation		
Quartile 1 Most deprived		98 (32.5)
Quartile 2		42 (13.9)
Quartile 3		53 (17.5)
Quartile 4 Least deprived		109 (36.1)

[†] Due to large amounts of missing data percentage was calculated from the data available from the booking population
[!] Work was not separated into full or part time on the maternity database.
[*] Data taken from Welsh Statistics 2011 census as no data available on NHS database
Main occupation for the booking population contained a large amount of missing data.

A comparison with available data from the database showed a higher proportion of women (55.9%, n=1977) classed themselves as having no occupation compared to the participants (18.5%, n=56). Of these 3.1% (n=193) were students in the booking population compared to 1.7% (n=5) of participants and 28.2% (n=1777) were mothers or housewives compared to 9.2% (n=28) of participants.

4.5.3 Mental health status of participants

Amongst participants, 32.5% (n=98) reported one or more mood disorders, most commonly anxiety (22.2%, n=67) or depression (15.6%, n=47) (Table 4.3). Other reported conditions included bipolar disorder, post-traumatic stress disorder and OCD (7%, n=21), only a small proportion self-reported stress (6.3%, n=19). In comparison the GAD-7 showed 8.3% (n=25) of women scored ≥10 indicating symptoms of anxiety and 8.6% (n=26) of women scored ≥13 on the EPDS indicating symptoms of depression. Mild anxiety symptoms accounted for a further 24.2% (n=73) and mild depressive symptoms 25.2% (n=76). EPDS and GAD-7 are significantly correlated (r_s =0.75, $p<0.001$).

The majority (17.9%, n=54) developed these conditions in adulthood, 5.3% (n=16) in adolescence and 0.7% (n=2) in childhood. It is not known whether these conditions were officially diagnosed. Self-diagnosis was reported by 3.3% (n=10) and a further 3.0% (n=9) were unsure of the time of diagnosis. Medication (5%, n=15) and counselling (3.3%, n=10) were the choice of treatment, with two women (0.7%) on a waiting list for counselling.

4.5.4 Comparison of mental health status of participants and the booking population

Reported mental health problems were higher in the participant group (32.5%, n=98) than recorded in the records of the booking population (23.6%, n=1490) (Table 4.3). Reported levels of anxiety were nearly twice as high (22.2%, n=67) in the participant group but they had lower rates of depression (15.6%, n=47) compared to the booking population (12.8%, n=810) and (17.3%, n=1092) respectively. Medication for mental health disorders were recorded by a greater proportion of the booking population (8.5%, n=538) than in the participant group (5.0%, n=15). Conversely a higher proportion of women in the participant group had received counselling (5.3%, n=16) than amongst the booking population (2.3%, n=148). Although 2.0% (n=6) of participants stated in the questionnaire they developed postnatal depression and 0.3% (n=1) developed prenatal depression, due to the free text nature of the question the majority stated they developed mental health problems in adulthood rather than relating it to the perinatal period 0.7% (n=2). Data for time of diagnosis, EPDS and GAD-7 are not routinely collected and therefore comparative data were not available for the booking population.

Table 4.3 Self-reported mental health status.

Mental health status	Booking population n=6312	Participants n=302
	n (%)	n (%)
Have you been diagnosed with a mood disorder?		
No	4551 (72.1)	198 (65.6)
Yes	1490 (23.6)	98 (32.5)
Missing	273 (4.3)	6 (2.0)
If yes which mood disorder?		
Anxiety	810 (12.8)	67 (22.2)
Depression	1092 (17.3)	47 (15.6)
Stress	17 (0.3)	19 (6.3)

Other		**21 (7.0)**
Postnatal depression	106 (1.6)	6 (2.0)
Prenatal depression	1 (0.0)	1 (0.3)
Bipolar disorder	46 (0.7)	3 (1.0)
OCD	52 (0.8)	1 (0.3)
Panic attacks	114 (1.8)	2 (0.7)
PTSD	89 (1.4)	6 (2.0)
Mild hallucinations	1 (0.0)	1 (0.3)
Mood/hormone disorder	2 (0.0)	1 (0.3)
Phobias	23 (0.3)	
Psychotic depression	21 (0.3)	
Puerperal psychosis	4 (0.1)	
Personality disorder	15 (0.2)	
Psychosis	12 (0.2)	
Eating disorder	12 (0.2)	
Self-harm	18 (0.3)	
Suicidal thoughts	65 (1.0)	
Schizophrenia	3 (0.0)	
EPDS		
≤12		276 (91.4)
≥13		26 (8.6)
GAD-7		
≤9		276 (91.4)
≥10		25 (8.3)
Missing		1 (0.3)
When Diagnosed		
Pregnancy/postnatal		2 (0.7)
Childhood		2 (0.7)
Adolescence		16 (5.3)
Adulthood		54 (17.9)
Self-diagnosis		10 (3.3)
Unsure		9 (3.0)
Missing		11 (3.6)
Treatment		
Medication (current)	538 (8.5) *	15 (5.0)
Medication (previously)		1 (0.3)
Counselling (current)	148 (2.3) *	10 (3.3)
Counselling (waiting)		2 (0.7)
Counselling (previously)		4 (1.3)

* Time of medication or counselling not available

4.5.5 Women with probable anxiety and or depression

The rest of this chapter relates only to study participants. Using recommended cut offs, EPDS ≥13 (Cox et al. 1987; Matthey et al. 2006) and/or GAD-7 ≥10 (Spitzer et al. 2006; Simpson et al. 2014) women with probable anxiety or depression were considered to have screened positive for mental health problems. This resulted in 35

(11.6%) women who met these criteria, the other participants were considered to have screened negative for probable anxiety or depression (Table 4.4).

Table 4.4 Screening results.

Mental health status	n (%)
Screen negative	267 (88.4)
Screen positive	35 (11.6)
Total	302 (100.0)

Amongst the 35 women who screened positive 10 (28.5%) had symptoms of probable depression but not anxiety, nine (25.7%) had symptoms of probably anxiety but not depression and 16 (45.7%) had symptoms of both probably anxiety and depression.

4.5.6 Comparison between screen positive and screen negative women

This section reports comparison between screen positive and screen negative women (Table 4.5). Gestation was similar between the two groups with a *mean* 12.3 (SD=1.2, *range* 9-17) weeks for screen positive women and *mean* 12.2 (SD=1.1, *range* 9-18) weeks for screen negative women. Mean age was slightly lower in the screen positive women *mean* 29.4 (SD=5.6, *range* 19-38) compared to the screen negative group 31.3 (SD=4.9, *range* 18-45). Nearly two thirds (60%, n=21) of women in the screen positive group were multiparous compared with around half of the screen negative group (52.8%, n=126). The majority of women lived with a partner, a slightly lower proportion in the screen positive groups (71.4%, n=25) compared to 86.1% (n=234) in the screen negative group. A higher proportion of women (25.7%, n=9) in the screen positive group had partners but did not live with them compared to 9.0% (n=24) of the screen negative group.

National identity was largely British (82.9%, n=29) in the screen positive group, similar to that in the screen negative group (87.6%, n=234). Ethnicity was recorded predominantly as White (77.1%, n=27) in the screen positive group, slightly lower than the screen negative group (85.0%, n=227).

Table 4.5 Sociodemographic characteristics.

	Participants n=302	Screen negative* n=267	Screen positive[!] n=35
	M (SD) R	M (SD) R	M (SD) R
Age	31.1 (1.13) 18-45	31.3 (4.92) 18-45	29.4 (5.61) 19-38
Gestation	12.2 (1.08) 9-18	12.2 (1.06) 9-18	12.3 (1.18) 9-17
	n (%)	n (%)	n (%)
Parous			
Nulliparous	140 (46.4)	126 (47.2)	14 (40.0)
Multiparous	162 (53.6)	141 (52.8)	21 (60.0)
Do you have a partner?			
Yes, live together	256 (84.8)	230 (86.1)	25 (71.4)
Yes, not living together	31 (10.3)	24 (9.0)	9 (25.7)
No	14 (4.6)	12 (4.5)	1 (2.9)
Missing	1 (0.3)	1 (0.4)	
Nationality identity			
British	263 (87.1)	234 (87.6)	29 (82.9)
Other	39 (12.9)	33 (12.4)	6 (17.1)
Ethnic background			
White	254 (84.1)	227 (85.0)	27 (77.1)
Other	44 (14.6)	36 (13.5)	8 (22.9)
Missing	4 (1.3)	1 (1.5)	
Highest level of education			
Postgraduate qualification	69 (22.8)	65 (24.3)	4 (11.4)
Degree or above	89 (29.5)	82 (30.7)	7 (20.0)
Higher education below	19 (6.3)	17 (6.4)	2 (5.7)
Degree	49 (16.2)	40 (15.0)	9 (25.7)
A levels, vocational level 3	4 (1.3)	2 (0.7)	2 (5.7)
Trade apprenticeships	40 (13.2)	37 (13.9)	3 (8.6)
GCSE, vocational level 2	2 (0.7)	1 (0.4)	1 (2.9)
No qualifications	30 (9.9)	23 (8.6)	7 (20.0)
Highest level of education			
Degree or above	158 (52.3)	147 (55.1)	11 (31.4)
No Degree	114 (37.7)	97 (36.3)	17 (48.6)
Missing	30 (9.9)	23 (8.6)	7 (20.0)
Employment situation			
Employed or in education	238 (78.8)	211 (79.0)	27 (77.1)
Not employed or in education	63 (20.9)	55 (20.6)	8 (22.9)
Missing	1 (0.3)	1 (0.4)	

Main occupation			
Professional	140 (46.4)	133 (49.8)	7 (20.0)
Non Professional	157 (52.0	130 (48.7)	27 (77.1)
Missing	5 (1.7)	4 (1.5)	1 (2.9)
Welsh index of multiple deprivation			
Quartile 1 (Most deprived)	98 (32.5)	84 (31.5)	14(40.0)
Quartile 2	42 (13.9)	34 (12.7)	8 (22.9)
Quartile 3	53 (17.5)	49 (18.4)	4 (11.4)
Quartile 4 (Least deprived)	109 (36.1)	100 (37.5)	9 (25.7)
Have you been diagnosed with a mood disorder?			
Yes	198 (65.6)	74 (27.7)	24 (68.6)
No	98 (32.5)	187 (70.0)	11 (31.4)
Missing	6 (2.0)	6 (2.2)	
If yes which mood disorder?			
Anxiety	67 (22.2)	52 (19.5)	15 (42.9)
Depression	47 (15.6)	32 (12.0)	15 (42.9)
Stress	19 (6.3)	11 (4.1)	8 (22.9)
Other	21 (7.0)	17 (6.4)	4 (11.4)
EPDS			
≤12	276 (91.4)	267 (100.0)	9 (25.7)
≥13	26 (8.6)		26 (74.3)
GAD-7			
≤9	276 (91.4)	266 (99.6)	25 (28.6)
≥10	25 (8.3)		10 (71.4)
Missing	1 (0.3)	1 (0.4)	
Diagnosis			
Pregnancy/postnatal	2 (0.7)	2 (0.7)	
Childhood	2 (0.7)	2 (0.7)	
Adulthood	54 (17.9)	45 (16.9)	9 (25.7)
Adolescence	16 (5.3)	9 (3.4)	7 (20.0)
Self-diagnosis	10 (3.3)	6 (2.2)	4 (11.4)
Unsure	9 (3.0)	6 (2.2)	3 (8.6)
NA	198 (65.6)	187 (70.0)	11 (31.4)
Missing	11 (3.6)	10 (3.7)	1 (2.9)
Treatment			
Medication	16 (5.3)	8 (3.0)	7 (20.0)
Counselling (current)	10 (3.3)	6 (2.2)	4 (11.4)
Counselling (waiting)	2 (0.7)	4 (1.5)	1 (2.9)
Counselling (previously)	4 (1.3)	1 (0.4)	

* EPDS of ≤13 and/or GAD-7 of ≤10
! EPDS of ≥13 and/or GAD-7 of ≥10

A lower proportion (31.4%, n=11) of women in the screen positive group, compared to 55.1% (n=147) of screen negative women held a qualification at degree level or above.

A similar proportion in each group were employed or in education 77.1% (n=27) in the screen positive group, compared to 79.0% (n=211) in the screen negative group. A higher proportion (77.1%, n=27) in the screen positive group worked in non-professional occupations compared to the screen negative group (48.7%, n=130).

WIMD scores indicated a higher proportion (40%, n=14) of women in the screen positive group lived in an area of greatest deprivation, compared to 31.5% (n=84) in the screen negative group. Only a quarter (25.7%, n=9) in the screen positive group lived in the least deprived area, compared to over a third (37.5%, n=100) of the screen negative women.

Current or previous mood disorders were recorded by 68.6% (n=24) of women in the screen positive group compared to 27.7% (n=74) in the screen negative group. Nearly half of the women in the screen positive group had anxiety and depression (42.9%, n=15). In the screen negative group 19.5% (n=52) and 12% (n=32) of women reported previous or current history of anxiety and depression respectively. Medication for mental health problems were reported by a higher proportion 20% (n=7) of women in the screen positive group than in the screen negative group 3% (n=8). Counselling for mental health problems had been received by 11% (n=4) of women in the screen positive group, compared to 2.2% (n=6) in the screen negative group.

4.5.7 Statistical analysis

Data were analysed to explore associations between background characteristics, mental health history, support networks and self-efficacy in relation to anxiety and depression using chi-square.

There was no statistically significant association between the screening result and parity χ^2(df =1) =0.64, p=0.422 (Table 4.6).

Table 4.6 Associations between screening results and parity.

		Screen negative n (%)	Screen positive n (%)	Total n (%)
Parity	Nulliparous	126 (90.0)	14 (10.0)	140 (100.0)
	Multiparous	141 (87.0)	21 (13.0)	162 (100.0)
Total		267 (88.4)	35 (11.6)	302 (100.0)

There was no statistically significant association between the screening results and maternal age χ^2(df=2) =3.308, p=0.191 (Table 4.7). Younger women were more likely

to score positive but possibly due to small numbers the difference was not statistically significant.

Table 4.7 Association between screening results and maternal age.

		Screen negative n (%)	Screen positive n (%)	Total n (%)
Age	≤25	34 (81.0)	8 (19.0)	42 (100.0)
	26-35	182 (88.8)	23 (11.2)	205 (100.0)
	≥36	51 (92.7)	4 (7.3)	55 (100.0)
Total		267 (88.4)	35 (11.6)	302 (100.0)

There was no statistically significant association between the screening results and national identity χ^2(df=1) =0.63, *p*=0.428 (Table 4.8).

Table 4.8 Association between screening results and national identity.

		Screen negative n (%)	Screen positive n (%)	Total n (%)
National identity	British	234 (89.0)	29 (11.0)	263 (100.0)
	Not British	33 (84.6)	6 (15.4)	39 (100.0)
Total		267 (88.4)	35 (11.6)	302 (100.0)

There was no statistically significant association between the screening results and ethnicity χ^2(df=1) =2.06, *p*=0.151 (Table 4.9).

Table 4.9 Association between screening results and ethnicity.

		Screen negative n (%)	Screen positive n (%)	Total n (%)
Ethnicity group	White	227 (89.4)	27 (10.6)	254 (100.0)
	Non white	36 (81.8)	8 (18.2)	44 (100.0)
Total		263 (88.3)	35 (11.7)	298 (100.0)

There was no statistically significant association between the screening and being employed or in education χ^2(df=1) =0.09, *p*=0.766 (Table 4.10).

Table 4.10 Association between screening results and employment.

		Screen negative n (%)	Screen positive n (%)	Total n (%)
Employment situation	In employment or education	211 (88.7)	27 (11.3)	238 (100.0)
	Not in employment or education	55.7 (87.3)	8 (12.7)	63 (100.0)
Total		266 (88.4)	35 (11.6)	301 (100.0)

Although a greater proportion of women living in areas of deprivation screened positive there was no statistically significant association between the screening results and level of deprivation using the quartiles χ^2(df=3) =5.0, p=0.172 (Table 4.11).

Table 4.11 Association between screening results and Welsh Index of Multiple Deprivation - quartile.

		Screen negative n (%)	Screen positive n (%)	Total n (%)
Welsh Index of Multiple Deprivation	Most deprived 1st quartile	84 (85.7)	14 (14.3)	98 (100.0)
	2nd quartile	34 (81.0)	8 (19.0)	42 (100.0)
	3rd quartile	49 (92.5)	4 (7.5)	53 (100.0)
	Least deprived 4th quartile	100 (91.7)	9 (8.3)	109 (100.0)
Total		267 (88.4)	35 (11.6)	302 (100.0)

Due to small numbers in each cell, the four categories were reduced to two, combining the upper and lower two quartiles. Following recoding a statistically significant association between women who screened positive and deprivation scores χ^2(df=1) =4.34, p=0.037 was found (Table 4.12).

Table 4.12 Association between screening results and Welsh Index of Multiple Deprivation.

		Screen negative n (%)	Screen positive n (%)	Total n (%)
Welsh Index of Multiple Deprivation	1st and 2nd quartile	118 (84.3)	22 (15.7)	140 (100.0)
	3rd and 4th quartile	149 (92.0)	13 (8.0)	162 (100.0)
Total		267 (88.4)	35 (11.6)	302 (100.0)

There was a statistically significant association between screening results and history of a previous mood disorder χ^2(df=1) =22.54, p<0.001 (Table 4.13).

Table 4.13 Association between screening results and previous or current mood disorder.

		Screen negative n (%)	Screen positive n (%)	Total n (%)
Previous or current mood disorder	Yes	74 (75.5)	24 (24.5)	98 (100.0)
	No	187 (94.4)	11 (5.6)	198 (100.0)
Total		261 (88.2)	35 (11.8)	296 (100.0)

There was a statistically significant association between women who screened positive and levels of education χ^2(df=1) =4.53, p=0.033 (Table 4.14).

Table 4.14 Association between screening results and education.

		Screen negative n (%)	Screen positive n (%)	Total n (%)
Education	Degree or above	147 (93.0)	11 (7.0)	158 (100.0)
	Below degree level	97 (85.1)	17 (14.9)	114 (100.0)
Total		244 (89.7)	28 (10.3)	272 (100.0)

There was a statistically significant association between women who screened positive and their main occupation level χ^2(df=1) =10.86, p<0.001 (Table 4.15).

Table 4.15 Association between screening results and occupation.

		Screen negative n (%)	Screen positive n (%)	Total n (%)
Main occupation	Professional	133 (95.0)	7 (5.0)	140 (100.0)
	Non professional	130 (82.8)	27 (17.2)	157 (100.0)
Total		263 (88.6)	34 (11.4)	297 (100.0)

There was a statistically significant association between screening results and their relationship status, with women with partners but not living together more likely to screen positive χ^2(df=2) =8.88, p=0.012 (Table 4.16).

Table 4.16 Association between screening results and relationship status.

		Screen negative n (%)	Screen positive n (%)	Total n (%)
Do you have a partner?	Yes, live together	230 (90.2)	25 (9.8)	255 (100.0)
	Yes, not living together	24 (72.7)	9 (27.3)	33 (100.0)
	No	12 (92.3)	1 (7.7)	13 (100.0)
Total		266 (88.4)	35 (11.6)	301 (100.0)

A binary logistic regression was performed for scale variables to explore associations between screening scores and nationality, ethnicity, education, employment and training, occupation, partner, parity, age, subjective social status, social support and networks, adaptive functioning, self-efficacy, social support and WIMD (Table 4.17).

The following characteristics were found to be associated with a higher incidence of women screening positive: lower education level (OR 2.34, 95% CI 1.05-5.21, p<0.037); non-professional occupation (OR 3.95, 95% CI 1.66-9.38, p=0.002); having a partner but not living together (OR 3.45, 95% CI 1.45-8.34, p=0.005) and lower adaptive functioning (OR 1.47, 95% CI 1.03-2.09, p=0.034). Characteristics found to be associated with a lower incidence of women screening positive: older maternal age (OR 0.93, 95% CI 0.87-0.99, p=0.038); higher subjective social status (OR 0.75, 95% CI 0.59-0.96, p=0.023); higher social support and networks (OR 0.88, 95% CI 0.81-0.97, p=0.010); higher self-efficacy (OR 0.93, 95% CI 0.88-0.97, p=0.002); higher social support from family (OR 0.93, 95% CI 0.89-0.98, p=0.003) and living in areas of lower multiple deprivation (OR 0.47, 95% CI 0.23-0.97, p=0.041) (Table 4.17).

Table 4.17 Odds ratios for associations between independent variables and screen positive women.

Variable of interest	OR	95% CI	p
Nationality			
British	Ref		
Other	1.43	0.56 to 3.80	0.430
Ethnicity			
White	Ref		
Other	1.87	0.78 to 4.43	0.156
Education			
Degree and above	Ref		
Below degree level	**2.34**	**1.05 to 5.21**	**0.037**
Employment			
In education, training or work	Ref		
Not in education, training or employment	1.14	0.49 to 2.64	0.766
Occupation			
Professional	Ref		
Non professional	**3.95**	**1.66 to 9.38**	**0.002**
Partner			
Yes, live together	Ref		
Yes, not living together	**3.45**	**1.45 to 8.24**	**0.005**
No	0.77	0.09 to 6.15	0.802
Parous			
Nulliparous	Ref		
Multiparous	1.34	0.65 to 2.75	0.424
Age (years)	**0.93**	**0.87 to 0.99**	**0.038**
Subjective social status	**0.75**	**0.59 to 0.96**	**0.023**
Financial means	**0.89**	**0.81 to 0.97**	**0.010**
Adaptive functioning	**1.47**	**1.03 to 2.09**	**0.034**
Self-efficacy	**0.93**	**0.88 to 0.97**	**0.002**
Social support			
Significant other	0.96	0.91 to 1.02	0.160
Family	**0.93**	**0.89 to 0.98**	**0.003**
Friends	0.96	0.91 to 1.02	0.157
WIMD			
1st and 2nd quartile (Most deprived)	Ref		
3rd and 4th quartile	**0.47**	**0.23 to 0.97**	**0.041**

All variables significant at the level of $p < 0.1$ and variables identified in the literature as being associated with adverse mental health were entered into a binary logistic regression model. The tested independent factors were: education, occupation,

partner, age, parity, subjective social status, social support networks, adaptive functioning, social support from partner, family and friends, self-efficacy and WIMD.

Assessment of multicollinearity was performed for all variables entered into bivariate logistic regression. No associations were found. Results showed a tolerance of more than 0.10 and VIF values of less than three.

The full model containing all predictors was statistically significant, χ^2(df=15, n=238) =49.52, p<0.001, indicating the model was able to distinguish between screen positive and screen negative participants. Sensitivity of the model was 99.1% with a specificity of 29.2%, the positive predictive value was 77.7% and the negative predictive value of 92.2%. Only three of the independent variables were identified as predictive of adverse mood disorders in the full model; presence of previous mood disorder (OR 4.53, 95% CI 1.44-14.24, p=0.010), low self-efficacy (OR 1.26, 95% CI 1.09-1.47, p=0.002), and counterintuitively high support from friends, was also associated with an increased risk of a positive screen, (OR 1.25, 95% CI 1.02-1.53, p=0.035). Possibly due to small numbers of screen positive (n=35) and the possibility of reverse scoring on the MSPSS.

Another unexpected result was the relationship between a screen positive result and relationship status which identified an association between 'having a partner but not living together' and poor mental health (OR 3.45, 95% CI 1.45-8.24, p=0.005), compared to no partner (OR 0.77, 95% CI 0.09-6.15, p=0.802). In the regression analysis, although not statistically significant, there was a stronger association between poor mental health and not having a partner (OR 3.35, 95% CI 0.18-61.03, p=0.415), than between having but not living with a partner (OR 0.53, 95% CI 0.11-2.43, p=0.411). A review of the raw data and re-run of the analysis did not detect any analytical error. The low number of women who screened positive (n=35) along with the low number of women without a partner (n=13), or chance, could explain the inconsistent results.

The strongest predictor of a positive screen result was previous mood disorder, the second strongest predictor was low self-efficacy. Support from friends showed a statistically significant predictor but had a negative effect (Table 4.18). One possible explanation could be the suspected reversed scoring of the MSPSS.

Table 4.18 Binary logistic regression predicting women who screen positive for mental health problems.

	Sig.	OR	95% CI	
Previous mood disorder	**0.010**	**4.53**	**1.44**	**14.24**
Low social status	0.568	0.89	0.58	1.35
Low financial means	0.640	0.96	0.79	1.16
Low adaptive function	0.556	0.83	0.45	1.53
Low self-efficacy	**0.002**	**1.26**	**1.09**	**1.47**
Low support from:				
Significant other	0.088	1.18	0.96	1.44
Family	0.073	1.23	0.99	1.28
Friends	**0.035**	**1.25**	**1.02**	**1.53**
Nonprofessional	0.162	0.35	0.08	1.52
Live with partner	0.395	1.00*		
Not living together	0.411	0.53	0.11	2.43
No partner	0.415	3.35	0.18	61.03
Younger age	0.269	1.07	0.94	1.22
Education below degree	0.448	1.72	0.42	7.07
Multiparous	0.139	0.41	0.12	1.34
Living in an area of deprivation	0.140	2.37	0.75	7.46

* reference value

Due to the small number of screen positive women and some missing data, the model only included 24 out of 35 women in the screen positive group. A second binary logistic analysis was run without the variable for education which contained the most missing data. This resulted in 30 out of 35 of the women in the screen positive group being included in the analysis (Table 4.19).

The model without education variable, was statistically significant, χ^2(df=14, n=256) =61.87, $p<0.001$, indicating the model was able to distinguish between screen positive and screen negative participants. Sensitivity of the model 99.1% with a higher specificity 36.7% than the first model, the positive predictive value was 84% and the negative predictive value was 92.6%. Only three of the independent variables were predictive of adverse mental health in the full model; the presence of a previous mood disorder (OR 3.95, 95% CI 1.37-11.33, $p=0.011$), low self-efficacy (OR 1.27, 95% CI 1.12-1.35, $p=0.001$) and low support from family (OR 1.13, 95% CI 1.00-1.27,

p=0.044). Surprisingly low support from friends (OR 0.83, 95% CI 0.70-0.99, *p*=0.040) was a protective factor for adverse mental health.

Similarly to the first model, the strongest predictor of poor mental health was previous mood disorders and the second strongest predictor was low self-efficacy. A higher level of support was associated with an increase in anxiety and depression symptoms. Whereas higher support from family was associated with lower levels of anxiety and depression. One possible explanation could be the suspected reversed scoring of the MSPSS.

Table 4.19 Binary logistic regression predicting women who screen positive for mental health problems, without the variable for education.

	Sig.	OR	95% CI	
Previous mood disorder	**0.011**	**3.95**	**1.37**	**11.33**
Low social status	0.702	0.93	0.63	1.36
Low financial means	0.738	0.97	0.82	1.16
Low adaptive function	0.585	0.85	0.48	1.51
Low self-efficacy	**0.001**	**1.27**	**1.12**	**1.45**
Low support from:				
Significant other	0.140	1.14	0.96	1.36
Family	**0.044**	**1.13**	**1.00**	**1.27**
Friends	**0.040**	**0.83**	**0.70**	**0.99**
Nonprofessional	0.182	0.43	0.13	1.49
Live with partner	0.495	1.00*		
Not living together	0.749	0.80	0.20	3.16
No partner	0.320	4.25	0.25	73.40
Younger age	0.226	1.07	0.96	1.21
Multiparous	0.140	0.45	0.15	1.30
Living in an area of deprivation	0.236	1.87	0.66	5.27

* reference value

In summary, the results from the questionnaire with women in early pregnancy suggest women with low self-esteem and a previous mental health condition were more likely to have symptoms of anxiety and depression. Support from friends indicated women were more likely to have mental health problems but support from a 'significant other' had a protective effect.

4.6   Summary

This chapter described the survey phase of the study with pregnant women. Consent was obtained from 310 women in early pregnancy in the antenatal clinic at their booking appointment. The majority of women were keen to support the study, although the collection of personal data prevented several from providing consent. Concerns that the section on safeguarding in the information leaflet may deter women from taking part were unfounded, in retrospect women were reassured. Several women answered positively to question 10 or scored high on the EPDS, requiring a follow up discussion and offers of support.

Consent was received from 310 women, withdrawal, incomplete or non-returned questionnaires led to analysis of 302 questionnaires. Preparation of the data for analysis indicated missing data and outliers. MSPSS were noted to have possible reversed scoring which may have altered the analysis of social support. Suggestions to replace missing data or suspected reverse scores with average scores were not undertaken, original data was used in the analysis, as it could not be assumed as erroneous.

Descriptive frequency analysis indicated women were mainly White British nationals, highly educated and the majority employed. A third of the participants reported mental health problems. Self-reported anxiety and depression were higher than when assessed by the EPDS and GAD-7. A possible explanation could be due to the cut off scores detecting moderate anxiety and depression, whereas women may have self-reported mild symptoms of anxiety and depression which were not detected on the screening tools. Several women stated their conditions were self-diagnosed which again could be a reason for the higher self-reported rates.

To check representation of the pregnant population, anonymised data were collected for women booked for care (n=6312) from the maternity database at the same Health Board (booking population). A comparison was made between these and the participants. A greater proportion of participants described themselves as White and had higher employment levels compared to the booking population. A higher proportion of participants had mental health problems than in the booking population. Anxiety was nearly twice as high in the participant group, possibly owing to women with mental health problems showing a personal interest in taking part. However more women in the booking population were taking medication, probably because there were more women with depression in this group.

From the initial 302 women who completed the questionnaire those with scores on the EPDS and GAD-7 above the cut off for probable depression or anxiety were divided into a screen positive group (n=35), which were then analysed against the rest of the participants – screen negative. Descriptive and frequencies showed similarities in age, gestation, national identity, ethnicity and employment. The group of women with probable depression and/or anxiety (screen positive) had a lower educational attainment, twice as many were in nonprofessional occupations, had partners but were not living together and lived in the lower socioeconomic areas for deprivation.

Chi-square and binary logistic regression analysis was used to assess associations between dependent dichotomous variables and independent variables to provide associations between poor mental health and sociodemographic characteristics. Associations were found between anxiety and depressive symptoms and WIMD, previous mood disorder, relationship with partner, education, occupation, age, subjective social status, social support networks, adaptive functioning, self-efficacy and social support from family.

The statistically significant variables were then entered into a binary logistic regression model to assess predictors of poor mental health. Due to missing data only 24 screen positive women were included in the first binary logistic regression, a second were run with education removed which increased analysis of screen positive women to 30. This showed similar statistically significant factors as the first model with the addition of low social support from family. Main predictors were previous mood disorder, low self-efficacy and high friend support. Low self-efficacy and a history of a previous mental health disorder were noted to be the main predictors of poor anxiety or depression. Unexpectedly support from friends predicted symptoms of anxiety and depression, possibly due to the reversed scoring items on the MSPSS or the small number of women (n=35) who were screen positive.

Chapter five describes the selection and recruitment of 20 women from the initial cohort. Statistical analysis presents the sociodemographic characteristics of women consented into the study and women who were interviewed. Thematic analysis of the data generated resulted in three themes.

Chapter five – Interviews with women

5.1 Introduction

The aim of conducting interviews with women was to explore their experiences during pregnancy with mild to moderate mental health problems and describe the barriers to seeking help regarding their mental health. Prior research typically included participants who gave birth weeks, months, and sometimes years, earlier (Logsdon et al. 2009; Byatt et al. 2013c; Henderson and Redshaw 2016; Henderson et al. 2018). Retrospective information about pregnancy may be coloured by the birth and change in circumstances of caring for a newborn. Obtaining information whilst pregnant was thought to provide a more accurate understanding of changes in moods and emotions.

This chapter will describe the selection, recruitment and findings from the interview phase of the study. Initial recruitment and analysis of the questionnaires completed by women in early pregnancy were presented in the previous chapter; a subset took part in the interviews. The chapter first provides a rationale for selection and describes the process of recruitment of 20 women between 34 weeks gestation and birth. The results provide a comparison of the background characteristics of women eligible for interview and those interviewed. Thematic analysis was used to analyse the data and results have been presented as three themes: 1) Moods and emotions past, present and future; 2) Expectations and control; 3) Knowledge and conversations. Further information regarding individual women's stories and details of birth are presented in Appendix 15.

5.2 Method

Inclusion criteria

- Consented at recruitment to being contacted to participate in a follow-up interview
- EPDS ≥7 and/or GAD-7 ≥5 on the initial questionnaire
- Pregnant and ≥34 weeks gestation

Exclusion criteria

- Transfer of care to another Health Board
- Unsafe to visit
- Referral to perinatal mental health or fetal medicine teams

Women who consented to interview during the initial recruitment were assessed against the eligibility criteria, firstly by ensuring the EPDS ≥7 and/or GAD-7 ≥5 from their initial questionnaires. NHS records were then screened in batches after women

reached 32 weeks gestation to assess if they still met the inclusion criteria. Interviews were planned to take place between 34 weeks gestation and birth. This enabled women who worked full time an opportunity to take part and provided exploration of moods and emotions during all three trimesters of pregnancy.

Immediately prior to contact by the woman's preferred method, NHS records were re-checked against the inclusion and exclusion criteria. Several further attempts were made to contact women if there was no reply from the original email, text or phone call. Phone conversations were started sensitively with a general enquiry regarding the progress of pregnancy in case inaccurate information had been obtained from the NHS records, following the telephone contact form (Appendix 16). If interested in follow up, an information sheet (Appendix 17) and copy of the timeline were sent by post or email, and a provisional date and time made for the interview.

For pragmatic reasons a choice of location for interview was offered. Providing such choice affords participants an element of control encouraging participation (Gagnon et al. 2015). Being in a participant's home and community could lend itself to making observations of their lives and add to the story of the individual (Elwood and Martin 2000) and changes the power between researcher and participant. In one case there was disparity between the questionnaire and NHS records regarding parity. It became obvious on entering the house that there was already a toddler living there, which was confirmed on questioning. Home interviews have the disadvantage of distractions such as deliveries or neighbours calling (Gagnon et al. 2015).

Interview training and experience was provided by the doctoral academy. Questions were developed from reviewing literature and themes that arose from the questionnaires and focus groups. A pilot interview was carried out with a pregnant woman at 35 weeks gestation to ensure questions and use of the timeline were understandable and led to discussion.

At the beginning of the interviews the purpose was reiterated and a consent form signed (Appendix 18) which included explicit permission to audio record the interview and use direct quotes in results reporting. One copy was given to the woman, one filed in her notes and the other retained in the Investigator Site File. Prior to being interviewed, women were asked to complete the same two psychometric mood questionnaires, the EPDS and GAD-7, completed at recruitment. The completed EPDS was briefly scrutinised to assess the severity of depressive symptoms and the score of three on question 10, 'The thought of harming myself has occurred to me', indicating self-harm. Information provided in the participant information leaflet and consent forms

ensured women were aware their details could be passed onto relevant authorities with or without their permission if concerns for their own wellbeing, or others, arose. Local perinatal mental health and safeguarding guidelines provided further direction for referral if required.

The option of drawing or using a timeline or mind map was provided as a way of discussing experiences. Drawing methods in the context of an interview can expand discussion, allowing thinking 'outside the box' using participants' own reflexivity (Bagnoli 2009). Visual inspection of a timeline can trigger memories. Including different life stages allowed opportunity to discuss feelings from childhood to the early postnatal period. The timeline served as a visual prompt for both women and researcher. The use of visual aids is often best introduced in person at a previous appointment to clarify the process and allow questions to be answered. The timeline would then be completed and brought back at the following meeting: this option was offered when the interview appointments were made.

With consent, the interviews were audio-recorded using an encrypted device, and assurance given that information collected would be kept confidential unless concerns for the women's health or others were noted. Participants were informed they could stop at any time. An interview schedule was used to guide the conversations, with room for additional questions to expand interesting topics which arose. Due to the stigma around mental health, the words 'moods' and 'emotions' were used during the interview and only changed to 'mental health' if first mentioned by the participant. Field notes were made as soon as practical following each interview about participants' behaviour, body language, context and place of interview (Bryman 2008). They are useful for adding texture to the interview or adding information recalled after the recording ceased. Reflecting on the quality and process became an iterative process and interview questions were modified to allow exploration of developing ideas.

In order to place the interview in context, data relating to birth outcomes were extracted from the women's NHS records after the baby's birth. This included the number of planned or unplanned antenatal appointments or admissions and delivery details: mode of birth, duration of labour, birthweight, APGAR scores, feeding intention, complications and length of hospital stay. This was added to the database along with the interview questionnaire data.

Audio recordings were uploaded and stored on a password protected server maintained by the University as soon as practical after the interview and deleted from the audio recorder. The first two audio recordings were transcribed verbatim by the

researcher and the remainder were encrypted using *7 Zip compression software* for windows and sent to a University approved transcription service via *fast file*. Anonymity was requested at the point of transcription.

Attention is given to ensure emotional wellbeing of study participants but often less so to other team members such as transcribers (Lalor et al. 2006). Due to possible upsetting or unnerving information in one audio recording, a note was supplied informing the transcriber of the nature of information and, if they felt uncomfortable completing the task, they could return it unfinished (Gregory et al. 1997). Large professional transcription services may have their own support for staff, but as a lone worker the option to turn down transcription was offered to avoid harm. The transcriber completed a third of one transcription returning it stating the audio was difficult to decipher. It is not clear if the transcriber had anticipated concerns as they had not reached the section containing the possible troubling events. The remainder of the audio was transcribed by the researcher.

During the process of sending audio recordings for transcription it was noted one was missing, PID 230. Field notes had been completed stating the length of interview taken from the recording device but an initial check of the audio recorder and password protected 'H' drive on the University server failed to find the audio file. The university information technology department was contacted. The recorder and servers were checked to locate any hidden or deleted files. They were unable to find the file which served as reassurance that the audio recorder could be returned without participant data attached. The only conclusion which could be made was the file must have been inadvertently deleted at source. Field notes were used to ensure the participant's contribution informed data analysis.

5.3   Recruitment process

Among the 211 women who consented to contact, initial inclusion criteria of EPDS ≥7 and/or GAD-7 ≥5 on the initial questionnaire resulted in 98 (46.4%) women eligible for interview (Figure 5.1). Recruitment was based on selecting women starting with the earliest estimated due dates to ensure sufficient numbers could be interviewed.

Initial checks of the NHS records when women were around 32 weeks gestation showed the inclusion criteria for interview were not met by 12 (5.6%) women due to: referral to PNMHT (1.8%, n=4) or fetal medicine (1.8%, n=4), miscarriage (0.4%, n=1), or given birth (1.4%, n=3). The records of 10 (4.7%) were not reviewed as the required number of women had already been interviewed. For personal safety, NHS records

were also checked to ensure there were no alerts indicating it unsafe to visit the woman at home alone, which was the case for one (0.4%) participant.

Records and contact details were re-checked immediately prior to contacting women (36.9%, n=78) who fitted the inclusion criteria at 32 weeks gestation. Of these, nine women (4.2%) had not provided sufficient information to enable contact. Three women were not contacted, one (0.4%) had given birth prematurely and two (0.8%) had complications in pregnancy which led to multiple hospital appointments and becoming inpatients in the maternity unit. Initial contact was made with 66 (31%) women via their preferred manner as indicated on the contact form. Emails were sent to four (1.8%) women but returned by the email provider and no other method of contact was provided, and five women (2.3%) declined. No reply to emails or telephone calls were received from 18 (8.5%) women. A second email was sent to women who did not reply. Messages were left on answer phones and women contacted again later the same day. Further contact with four women was not required due to recruitment numbers being reached.

Several women who had been contacted on more than one occasion were keen to take part and commented they had been busy or forgot to reply due to work or childcare. Of the 35 (6.5%) women who agreed to participate in the interview, one (0.4%) had moved and transferred care to another Health Board.

Agreement was sought to contact women the day prior to interview as a reminder. Of the 25 (11.8%) women provided with an appointment, one gave birth before the arranged interview and four (1.8%) cancelled. Interviews were conducted with 20 women taking place between 3rd May and 17th July 2018. The first interview was conducted in the hospital at the participant's request; this had originally been planned for the following week at their home, but a short inpatient stay led to the participant suggesting an earlier appointment. Home was the preferred choice for 11 participants, two opted for university premises; one because they worked there and one as it was close to another meeting and seven at the hospital; three arranged around antenatal appointments, one was an inpatient and one working onsite.

Women were 34 to 40 weeks gestation at the time of interview. It was noted the majority of women were working full time when contacted and attended the interviews in late pregnancy. All women were interviewed alone and unaccompanied. Consent forms and questionnaires were completed. EPDS question 10 was reviewed, and it was noted that none of the women had indicated they had considered harming themselves.
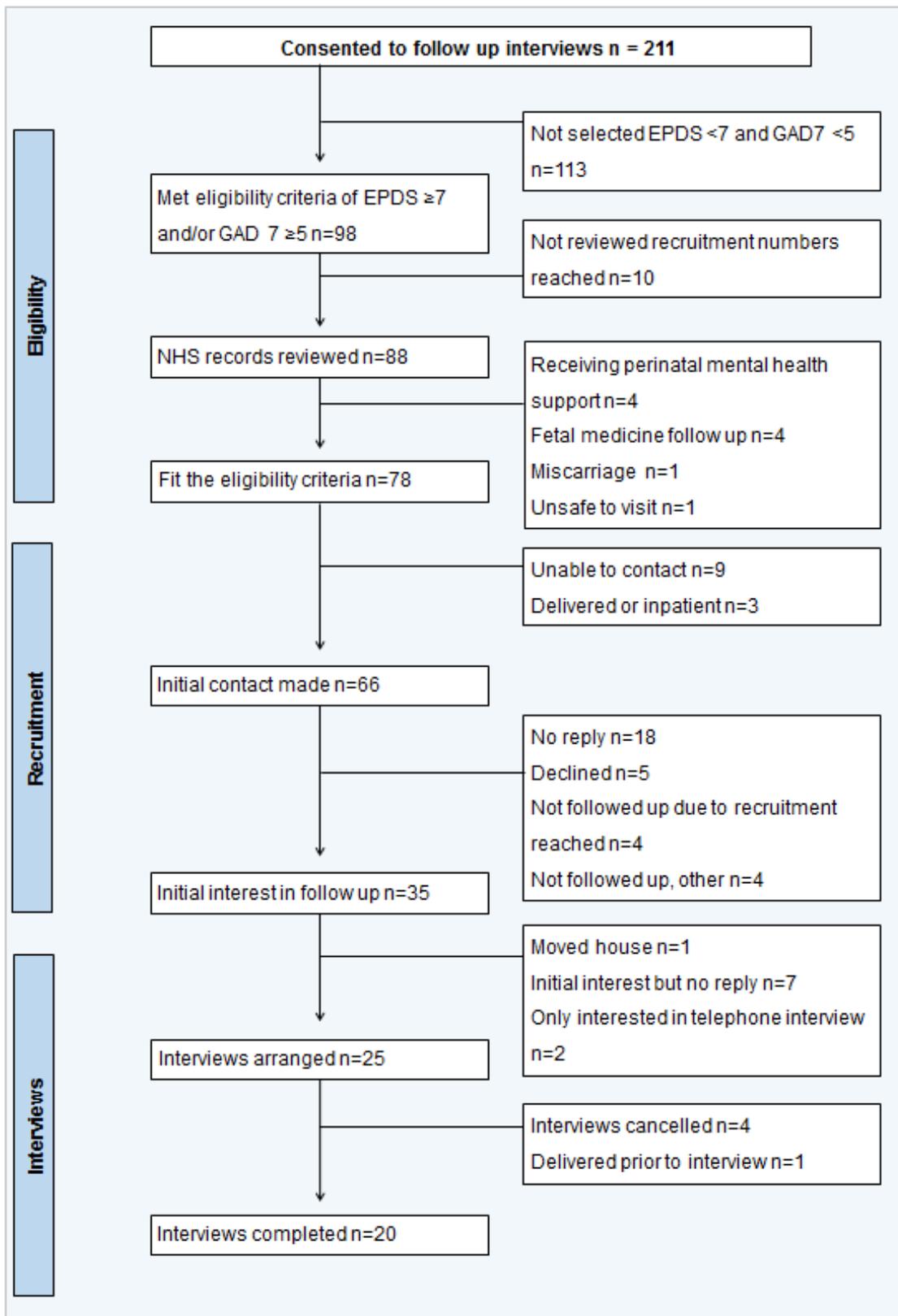
Figure 5.1 Follow up selection of women for interview with EPDS ≥7 and/or GAD-7 ≥5.

Women were offered the chance to choose their own pseudonym, but all declined. A laminated copy of the timeline was placed within view of the women during the interview and questions asked pointing out the different time points. Only one woman rejected using the timeline, but all declined the opportunity to draw their own. Several women referred to the timeline, apologising for jumping ahead during the interview. Some had reviewed it prior to the meeting and pre-planned what they were going to say. One woman stated it had made her think about her mental health over time (Field note – Olivia). It is difficult to know how, if at all, using this tool influenced the data generated (See reflexive comments – Appendix 22, p 382). Women interchanged moods and emotions with mental health and showed no signs of discomfort. During one interview the topic of stigma around mental health arose without any prompt. In subsequent interviews the question 'Do you feel there is any stigma around the topic of mental health?' was added, if not discussed by the participant themselves.

Interviews lasted between 20 to 84 minutes. A refund was offered to participants for public transport or parking costs if appointments were held on hospital or university premises, but none were requested. An opportunity was made available at the end of the interview to discuss support services for any woman who appeared distressed. Conversations after the recording ceased related to practical issues, which were discussed with three women (described below).

5.4   Results

5.4.1   Background characteristics for women eligible for interviews

Data from recruitment questionnaires were used to compare characteristics of women who were interviewed (n=20) and those eligible (according to the initial survey data) for interview but not interviewed (n=78) (Table 5.1). Background characteristics were similar in many respects aside from education and employment. The interview cohort had higher education levels with 75% (n=15) holding a degree or higher qualification, including 35% with postgraduate qualifications (n=7), compared to 43.6% (n=34) educated at degree or above level of those eligible. There were a higher proportion of women interviewed in full time employment 60% (n=12), with 55% (n=11) in the professional or associate profession as classified by ONS, compared to 43.6% (n=34) and 38.3% (n=30) respectively, in the eligible group.

There were similar rates of diagnosed mental health disorders, 45% (n=9) of those interviewed compared to 50% (n=39) who were eligible. Diagnosis were mainly in adulthood in both groups, 25% (n=5) interviewed and 26.9% (n=21) eligible. EPDS scores for women interviewed indicated more women with mild depressive symptoms

(80%, n=4) in the interview group compared to (74.4%, n=58) those eligible. No women had symptoms of moderate depression in the eligible group compared to (11.5%, n=11) those interviewed. GAD-7 scores for women interviewed showed 60% (n=12) with mild and 15% (n=3) with moderate symptoms of anxiety, compared to 52.6% (n=41) mild, 12.8% (n=10) moderate and 2.6% (n=2) severe symptoms of anxiety in the eligible group. None reported taking medication for their mood condition in the interview group but 10% (n=2) previously had, and 5% (n=1) were waiting for, counselling, whilst 9% (n=7) reported taking medication in the eligible group.

Table 5.1 Background characteristics of women eligible for interview.

Background characteristics	Interviewed	Eligible but not interviewed
	n=20	**n=78**
Age M (SD) R	31.7 (4.9) 20-37	31.2 (4.5) 20-43
Gestation at interview M (SD) R	36.9 (1.65) 34-40	NA
	n (%)	**n (%)**
Do you have a partner?		
Yes	17 (85.0)	60 (76.9)
Yes, but we don't live	1 (5.0)	13 (16.7)
together	2 (10.0)	4 (5.1)
I do not have a partner	0 (0.0)	1 (1.3)
Nulliparous or multiparous		
Nulliparous	9 (45.0)	33 (42.3)
Multiparous	11 (55.0)	45 (57.7)
National identity		
Welsh	9 (45.0)	41 (52.6)
English	5 (25.0)	3 (3.8)
British	3 (15.0)	27(34.6)
Other	3 (15.0)	7 (9.0)
Ethnic background		
White	15 (75.0)	69 (88.5)
Any other white background	2 (10.0)	0 (0.0)
Indian	1 (5.0)	0 (0.0)
Any other mixed/multiple ethnic background	1 (5.0)	3 (3.8)
Asian/Asian British	0 (0.0)	4 (5.1)
White and black Caribbean	1 (5.0)	0 (0.0)
Missing	0 (0.0)	2 (2.6)

Highest level of education		
Degree or above	15 (75.0)	34 (43.6)
Below degree	4 (20.0)	33 (42.3)
No qualification	0 (0.0)	1 (1.3)
Missing	1 (5.0)	10 (12.8)
Employment situation		
In full time work	12 (60.0)	34 (43.6)
In full time education or training	0 (0.0)	1 (1.3)
In part time work	3 (15.0)	24 (30.8)
In part time education or training	0 (0.0)	1 (1.3)
Both in work and education or training	2 (10.0)	2 (2.6)
Unemployed and seeking work	1 (5.0)	1 (1.3)
Out of work not seeking work	2 (10.0)	11 (14.1)
Other	0 (0.0)	3 (3.8)
Missing	0 (0.0)	1 (1.3)
Main occupation		
Managers, directors	0 (0.0)	3 (3.8)
Professional	7 (35.0)	17 (21.8)
Associate professional/technical	4 (20.0)	10 (12.8)
Administrative	1 (5.0)	6 (7.7)
Caring, leisure	1 (5.0)	17 (21.8)
Sales and customer service	2 (10.0)	7 (9.0)
Process, plant and machine operatives	1 (5.0)	5 (6.4)
No occupation	**4 (20.0)**	**11 (14.1)**
Student	1 (5.0)	0 (0.0)
Mother/housewife/care	1 (5.0)	5 (6.4)
No occupation	2 (10.0)	0 (0.0)
Have you been diagnosed with a mood disorder?		
No	11 (55.0)	37 (47.4)
Yes	9 (45.0)	39 (50.0)
Missing	0 (0.0)	2 (2.6)
If yes which mood disorder?	7 (35.0)	26 (33.3)
Anxiety	5 (25.0)	20 (25.6)
Depression	4 (20.0)	8 (10.3)
Stress		

Other		
OCD	1 (5.0)	0 (0.0)
Mild hallucinations	1 (5.0)	0 (0.0)
Mood/hormone disorder	1 (5.0)	0 (0.0)
Postnatal depression	0 (0.0)	3 (3.8)
Panic attacks	0 (0.0)	1 (1.3)
Bipolar disorder	0 (0.0)	1 (1.3)
PTSD	0 (0.0)	1 (1.3)
Diagnosis		
Adolescence	1 (5.0)	8 (10.3)
Adulthood	5 (25.0)	21 (26.9)
Childhood	0 (0.0)	1 (1.3)
Self-diagnosis	2 (10.0)	3 (3.8)
Unsure	2 (10.0)	4 (5/1)
NA	10 (50.0)	38 (96.2)
Missing	0 (0.0)	3 (3.8)
Treatment		
Medication (current)	0 (0.0)	7 (9.0)
Counselling (waiting)	1 (5.0)	0 (0.0)
Counselling (previously)	2 (10.0)	0 (0.0)
None	17 (85.0)	31 (39.7)
NA	0 (0.0)	38 (48.7)
Missing	0 (0.0)	2 (2.6)
EPDS*		
<7	4 (20.0)	11 (14.1)
7-12	12 (60.0)	58 (74.4)
13-19	4 (20.0)	9 (11.5)
GAD-7*		
<5	5 (25.0)	25 (32.1)
5-9	12 (60.0)	41 (52.6)
10-14	3 (15.0)	10 (12.8)
≥15	0 (0.0)	2 (2.6)

* EPDS and GAD-7 recorded at recruitment

5.4.2 Anxiety and depression symptoms of women at interview

Initial questionnaire data collected at recruitment indicated nine (45%) women interviewed had a diagnosed mental health condition. Of these, three stated they were unsure of diagnosis time or had self-diagnosed, or recorded stress rather than anxiety or depression as the diagnosis. Helena was one, yet from her EPDS and GAD-7 at recruitment she scored in the moderate range for depressive symptoms and severe for anxiety symptoms. She also reported mental health problems during the interview. Becky who said 'no' to the question 'Have you been diagnosed with a mood disorder?' went on to state she suffered from depression, anxiety and stress. The negative answer to the initial question might have been due to a misunderstanding or because no formal diagnosis had been received.

Women completed the EPDS and GAD-7 prior to interview to provide context and a comparison to early pregnancy (Table 5.2). At interview EPDS scores were lower or the same for 14 women and on the GAD-7, 10 scored lower or the same.

Table 5.2 Anxiety and depression symptoms for women interviewed.

	Recruitment	Interview
EPDS		
Depression not likely <7	4 (20.0)	6 (30.0)
Depression possible 7-12	12 (60.0)	11 (55.0)
Probable depression 13-19	4 (20.0)	3 (15.0)
GAD-7		
Minimal anxiety <5	5 (25.0)	8 (40.0)
Mild anxiety 5-9	12 (60.0)	9 (45.0)
Moderate anxiety 10-14	3 (15.0)	2 (10.0)
Severe anxiety ≥15	0 (0.0)	1 (5.0)

A paired sample *t*-test was conducted to compare the EPDS at recruitment and immediately prior to interview. Results showed that although women had higher EPDS at the beginning of pregnancy (*mean* =9.95, SD=3.07) than at interview (*mean* =8.15, SD=3.41) (Table 5.3), with this small sample size (n=20) the difference did not reach levels of statistical significance $t(19) =1.898$, $p=0.073$.

Table 5.3 Paired sample *t*-test of EPDS scores at the beginning of pregnancy and at interview.

		Mean	**n**	**Std. Deviation**
EPDS	Early pregnancy	9.55	20	3.07
	Late pregnancy	8.15	20	3.41

A paired sample *t*-test was conducted to compare the GAD-7 at recruitment and immediately prior to interview. Results showed that women had similar GAD-7 at the beginning of pregnancy (*mean* =6.00, SD=2.88) and at interview (*mean* =6.10, SD=4.06) (Table 5.4), with this small sample size (n=20) the difference did not reach levels of statistical significance $t(19) = -0.113$, $p=0.911$.

Table 5.4 Paired sample *t*-test of GAD-7 scores at the beginning of pregnancy and at interview.

		Mean	**n**	**Std. Deviation**
GAD-7	Early pregnancy	6.00	20	2.88
	Late pregnancy	6.10	20	4.06

5.5   Thematic analysis

To provide a detailed insight into the thoughts and experiences of women regarding their mental health and pregnancy, thematic analysis (described in chapter three) was used to detect, analyse and report on patterns found within the data (Braun and Clarke 2006). Transcripts were reviewed for accuracy using the audio recording and alterations made to ensure participant anonymity and correction of technical terms. This provided an added area of familiarisation as the transcripts were actively read, at the same time reflexive notes were made of the content and main areas of interest (Braun and Clarke 2006).

Transcripts and field notes were entered into QSR Interventional NVivo 11 qualitative data analysis software (NVivo 2015). The process of identifying initial areas of the text which appeared interesting, meaningful and reflected the aims of the study were assigned a code. These were generated by systematically working through the transcripts. A code is a label which captures an idea, object, event or topic interesting in relation to its context (Graneheim and Lundman 2004). Initial coding of four of the transcripts led to a list of 44 codes. To increase validity one transcript was coded independently by a supervisor, resulting in 15 codes which were subsequently reviewed, although wording for the codes differed, the inference was the same (Graneheim and Lundman 2004). Having experts in midwifery and mental health on the research team enabled a comprehensive review, ensuring clarification of technical and practical implications and recognising interesting information missed by over familiarisation (See reflexive comments – Appendix 22, p. 383).

Once the basic coding frame had been completed from all the transcripts they were systematically reviewed again to encompass new codes generated during later transcripts. This became an iterative process with codes generated, others added, combined and labels changed during the process of reading the transcripts to produce a final list of 27 codes. A similar process above was applied to the field notes.

Codes generated from interviews and field notes along with initial notes from the familiarisation stage of analysis were reviewed. These were transferred onto mind maps, handwritten reflections and post it notes with quotes were all used to start building categories and themes. Categories refer mainly to a description of the text whereas the theme is the resulting explanation of the categories (Graneheim and Lundman 2004). These were reviewed and rearranged numerous times to ensure themes remained distinct and categories within themes coherent. In the process of writing up the analysis, subthemes were rearranged and combined or sometimes moved to another theme to avoid repetition. Quotes were attached to theme names to provide context.

Three themes were generated, each with several subthemes.

> ➢ Theme one – Moods and emotions: past, present and future, describes the changes in women's mental health from childhood and looking forward to life with a new baby.
> ➢ Theme two – Expectations and control, discussed women's beliefs in relation to pregnancy and childcare and how these were shaped, revealing the sense of control women had over their everyday lives.
> ➢ Theme three – Knowledge and conversations presented women's knowledge and understanding of their own mental health, informal and formal support and alluded to barriers they face accessing support.

5.5.1 Theme 1 – Moods and emotions: past, present and future

The timeline, discussed in the methods section of this chapter, was used as a basis to follow women's mental health journey. Women were invited to provide information about their experiences during childhood, adolescence and on finding out they were pregnant, to assess if changes in their moods and emotions were pre-existing or pregnancy related. Then looking forward they were asked to discuss how they viewed the coming birth and early days looking after their newborn baby. A brief narrative of each participant is provided in Appendix 15. Women disclosed several conditions during the interviews: OCD; anxiety; depression; anorexia and panic attacks; symptoms of hallucinations; low and high mood and self-harm. Women without diagnosed mental health problems alluded to worries and stresses in their lives and emotional ups and downs, sometimes leading to mild anxieties which lasted for a short duration, at some point in their lives.

Reaction to pregnancy – 'I've been surprised because you hear how pregnancy can have such a drastic impact on your emotions'

When asked about moods and emotions during childhood, women without a mental health diagnosis described these in relation to their character. Two women described themselves as worriers, others as being a positive person or having a bubbly character. Most recalled a happy childhood, with no memories of any mental health problems. Adolescence and adulthood were stated as the times when mental health problems arose, often during times of change such as leaving home.

Another trigger was the pressure of student life whether self-inflicted, from peers or family leading to the onset of poor mental health. When asked about her experiences during adolescence and early adulthood Pippa described how trying to adjust to university life resulted in symptoms of anxiety and depression leading her to see her general practitioner:

> *…so there was one thing that I will admit, when I was in uni I was having, I was going to say it was somewhere between anxiety and depression and I was kind of under a lot of pressure… (Pippa, interview, line 488-490)*

Pippa noted this was probably due to insufficient sleep, drinking too much and needing a change in lifestyle to help stabilise her mood. There did not appear to have been any instances of depression since, but Pippa did discuss recent periods of anxiety, especially during busy times at work.

Women's reactions to finding out they were pregnant did not differ much from what could be expected (Carin et al. 2011; Bondas and Erickson 2001) (Figure 5.2). This was the first pregnancy for four women and five women had experienced previous miscarriages and no children. The pregnancies were unplanned for three, a further two had planned to have children in the future and sub-fertility made becoming pregnant difficult for four. Jackie was one woman who described how she was overjoyed and surprised at the prospect of being pregnant:

Reaction to pregnancy	n (%)
Happy	9 (45.0)
Surprised/shocked	6 (30.0)
Excited	3 (15.0)
Cautious	1 (5.0)
No emotion	1 (5.0)

Figure 5.2 Reaction to pregnancy.

> *Really excited and really nervous because we'd been to the doctor about two weeks before and they thought I had endometriosis and I probably wouldn't be able to get pregnant myself and hey presto. (Jackie, interview, line 16-18)*

For others the surprise of being pregnant was tinged with uncertainty about whether to continue the pregnancy, with two women considering termination.

>*…this one… was not planned at all…it took me a good long while to wrap my head around it…cause I have a three year old and a two year old right now and you know finances are fine but they're not like enough to have another kid (Sally, interview, line 35-39)*

Both women had to go through a process of coming to terms with their unexpected pregnancy. Sally who planned her previous two pregnancies 'to the day' found the lack of planning led her to assess if it was possible both financially and practically to have another child. Also Dawn who had been in and out of the Child and Adolescent Mental Health Services and stated she was 'in a bad place'. Having moved back home with her parents to support her poor mental health after an unexpected pregnancy, led to months of uncertainty about whether to continue with the pregnancy.

Similarly to Dawn and Sally the reaction to pregnancy made some women evaluate their lives and realise they need to make changes to accommodate the pregnancy. Tara, had delayed trying to get pregnant because of a change of jobs:

>*…it was a little bit of a surprise that I had a lot of emotions then because it was like not feeling ready and that kind of stuff… it was definitely exciting but it felt sort of having to manage the adult aspect also… (Tara, interview, line 43-46)*

The unplanned nature of the pregnancy caused mixed emotions from excitement to inadequacy and uncertainty. These emotions were common for women who had previously miscarried, their excitement was understandably mixed with anxiety at the thought of it happening again.

As well as the initial few months of pregnancy being an anxious time for those who had previously miscarried, many of the women could not accept they were pregnant until they had visual proof in the form of an USS. Previously confirmation of pregnancy was assured by having a positive pregnancy test, yet many women were reluctant to believe they were pregnant even with symptoms of pregnancy such as early morning sickness:

>*I think there's always a bit of anxiety in the back of my mind, you know before you get that kind of initial confirmation. Then you see it on a screen and then it's…I suppose I didn't want to invest too much*

in it before knowing that everything is okay. (Gwenda, interview, line 157-162)

It was this initial USS which caused a great deal of anxiety amongst the women interviewed, due to fear of finding a problem with the baby. It was only after this confirmation, women would allow themselves to tell friends and family about the pregnancy, even though there was still a possibility of miscarriage or other complications after the USS. Some women chose to keep a distance between them and the baby until they had seen the image on the USS, as a way of coping if something was to go wrong.

Ups and downs of pregnancy – 'I've felt alright and everything but I suppose, from my mood perspective it's been fraught with paranoia'

Pregnancy being a major life event understandably has an impact on a woman's health due to physical changes and coming to terms with the responsibility of carrying and nurturing a new baby. Women with children were more likely to described busy lifestyles, being older and pregnancy as physically more demanding. This resulted in them becoming tired and having less time to do things or relax which led to feeling stressed. Most women also acknowledge pregnancy as a time of change both emotionally and physically, with one affecting the other.

Gwenda, pregnant for the second time, noted physical symptoms such as lack of mobility and tiredness affecting her mood, leading to frustration:

> *Your body kind of lets you down a bit and it's frustrating. Yeah so after twenty weeks then I did find myself being a bit overwhelmed, quite emotional… (Gwenda, interview, line 162-163)*

The change in lifestyle and an effort to maintain normal activities such as running impacted Gwenda's mental health.

In contrast Laura, pregnant for the second time and due to give birth in a few weeks', explained:

> *…I would say I've enjoyed this pregnancy probably more than my first which is nice. (Laura, interview, line 15-16)*

Laura put this change down to feeling physically better. Likewise parous women felt, because they had been so busy this time, their pregnancy had gone quickly and they hadn't had much time to think about their pregnancy in relation to their mood.

Some women noted their mood became more stable once they were pregnant, describing the pressures and responsibilities of their jobs as the cause for their stress and anxieties rather than the physical aspects of pregnancy. Emma who described herself as a worrier, stated the nature of her job was the cause of her anxieties:

> *…one of the things I've wondered before I was pregnant at all was whether I might be the sort of candidate who might be quite anxious in pregnancy and actually both times I've been incredibly relaxed about it. (Emma, interview, line 46-48)*

Several women described how becoming pregnant meant they reassessed their priorities. The stresses and anxiety caused by work were no longer their main concern, leading to them becoming more relaxed about their jobs. These feelings were probably in line with most pregnant women, regardless of their mental health status.

There were women who appeared to remain positive during their pregnancy whilst suffering from what most people would see as major physical challenges. Isabel had developed hyperemesis gravidarum on her first pregnancy which lasted until the birth of her baby. It was so severe she had delayed becoming pregnant again. Unfortunately the second pregnancy followed the same pattern but this did not appear to have a major impact on her mental health.

In complete contrast Dawn, a young single woman with a history of mental health problems, found the whole of her pregnancy overshadowed with common minor ailments of pregnancy whilst coming to terms with the idea of 'being a mum' and deciding whether to continue with the pregnancy. This added strain had a detrimental effect on her mental health, for which she sought counselling:

> *No it was just so annoying because part of me was like am I doing something wrong, because I was… really struggling, not enjoying my pregnancy at all… I was like this is vile, no one ever says pregnancy is like this and then you just go somewhere and you just see all these women and they're like oh I love being pregnant. (Dawn, interview, line 418-421)*

As well as the mental and physical changes affecting Dawn she also alluded to the common perception of pregnancy, often seen as an exciting and happy time. Causing Dawn to question why she did not fit this viewpoint. Two other women also questioned this perception of pregnancy and disliked the attitude of others.

Karen was one such woman, she had not enjoyed her pregnancy at all, the polar opposite to public opinion. She explains succinctly her experience of her pregnancy:

> *I have hated it. (Karen, interview, line 23)*

Karen put these feelings down to a series of life events including a new job, change of boss and an illness of a close relative, as well as the physical symptoms of pregnancy which made her feel unwell. Furthermore, she worked in a job where she saw the sad outcomes of pregnancy and this had influenced her greatly and caused anxiety throughout her pregnancy, with every step of the way being scrutinised and assessed as a possible point where something could go wrong.

Karen and Becky, both expecting their first baby, described pregnancy related anxiety and a fear of childbirth and had convinced their obstetrician of the need for an elective caesarean section for birth. Another two women prepared themselves for possible issues throughout pregnancy and never really 'enjoyed' the whole event. Mandy describes her experience after five years of fertility treatment and multiple miscarriages:

> *You know there was no great emotion, and it took a long time for it to really sink in at all really, and even now there gets to the point, what are we two weeks away from D Day and there's still paranoia about movement and everything else. (Mandy, interview, line 62-64)*

The main issue which concerned women was overwhelmingly that something may 'go wrong' with their baby. None of the women were concerned for their own health even though they felt physically unwell and some stated even if the birth was difficult, as long as the baby was alright they would cope.

What the future holds – 'it's scary thing and in general I think you have this small thing that is completely dependent on you'

The conversations continued and women were asked to think about how they felt their moods and emotions might change in relation to the anticipated birth of their baby and early postpartum period.

As well as the two women who opted to have an elective caesarean section another three were worried about the impending birth due to changes in their plan of care and a lack of understanding of the implications. Tara explained her fears after being told her baby was in a breech position:

…now she's breech so we're trying to figure out the best solution for that and so that's how things have been a little worrisome. (Tara, interview, line 89-90)

Similarly Sally who had previously had a 'normal delivery' on the midwifery led unit (MLU) had been found to be a carrier of Group B streptococcus (GBS) during the pregnancy. This requires intravenous (IV) antibiotic cover in labour and meant she could not labour in the familiar environment:

I'm still trying to figure it out…because I (indistinct) birth on the MLU and now I have to go upstairs [consultant lead] and I have no idea what that entails, and getting an IV and stuff…

…it's the group B strep thing now, so it the kind of think that is worrying me. (Sally, interview, line 8-10, 108)

Both Sally and Tara were unsure of the implications of these new events and felt they should have been given extra information about the possible scenarios. Discussions were held with both women after the interview to address some of their concerns. Since the interviews, women who are carriers of GBS can now be cared for in the MLU, suggesting there may be other situations which could be considered low risk and not requiring obstetric care or changing the image and procedures in the obstetric unit, to improve women's experiences and reduce fears.

In keeping with an understanding of the processes of labour and birth, preparation was the key for most couples. Those who felt informed about the upcoming birth had decreased anxieties around birth:

…we've done most of the classes now…

…we've kind of had a big discussion about the birth plan and we've got kind of plan B's, and plan C's and D's as well…we're both kind of, we're of the opinion that it doesn't really, as long as we get from a to b, b being the birth of the child and everybody is happy and healthy… (Pippa, interview, line 401-412)

Unlike Pippa, Laura had given birth previously and even though she was not initially anxious about the birth as the interview progressed, she began to voice concerns about her previous birth:

…no worries during the pregnancy and I think after the birth of my first one I had quite a few issues with incontinence, I had quite a nasty forceps delivery…

…she ended up being a bit stuck and I've sort of tried to voice, I think maybe I should have said a little earlier, I am a bit worried and will you let me go as far over…(Laura, interview, line 50-51, 184-185)

Laura was almost reasoning with herself between it will be all right this time and should I share my fears with the health professionals. Later Laura admitted that if there were problems this time she would opt for support from Birth Afterthoughts. Laura recalled noticing a leaflet in early pregnancy.

Unlike pregnancy, the postnatal period was the first time women turned their attentions to their own needs. The main concerns surrounded the practicalities of caring for a new baby, especially for women expecting their first, leading to anxiety. For others it was the responsibility of caring for the baby after birth. Helena who had a history of anxiety and depression, and pregnant for the first time, explained her worries about looking after her new baby, even though she has looked after several newborn babies:

No because after I had that first one (referring to an USS) and saw the baby and saw it move, I was like okay she's fine, yeah. It's just now the worry is coming back a bit now. Not so much the labour, I don't care about pain… it's just the afterwards…(Helena, interview, line 109-111)

Helena went on to explain she had an apnoea mat and training in resuscitation ready for the baby coming home as she was worried the baby may stop breathing. This is not a normal part of care for a healthy term newborn baby.

Jackie was one of the few who mentioned being worried about her mental health in the postnatal period:

…do get nervous about the baby blues and postnatal and stuff, so I've read quite a lot…(Jackie, interview, line 228-229)

This theme reviewed the women's journey from childhood to present and a glimpse into the future regarding their mental health. The majority of the women discussed major changes in their life as triggers for poor mental health which arose in adolescence and adulthood and mostly prior to the present pregnancy. Their experiences revealed anxiety and depression to be at its greatest in early pregnancy due to fear of

134

miscarriage. A couple of women remained very anxious throughout and several stated they had not enjoyed their pregnancy; conversely one woman stated her mood improved. For others it was the minor ailments and physical aspects of a baby in utero which led to increased anxieties. During pregnancy the health of their baby was paramount with little regard to their own health. Most women approached the birth armed with information and a plan, yet a few who had complications during pregnancy felt uncertain about the birth which caused anxiety. The thought of early days with a newborn were tinged with worries about the practical issues of caring for them and was often the first time women actually thought about their own health.

5.5.2 Theme 2 – Expectations and control

Women's expectations of pregnancy and childcare revealed fears and frustration along with guilt at being judged by others. Women also explained how they were in control of everyday life. In order to remain in control there was a notable trend in absorbing knowledge throughout pregnancy.

The perfect mum – 'I was really worried about what people thought'

Women appeared to put a significant amount of pressure on themselves, especially when it came to raise their children. Failed expectations of their own making led to feelings of guilt and frustration. When asked about her previous pregnancy and early postnatal days Isabel, who had one child already, explained the pressure she had placed on herself:

> *…my expectations were so high on myself, I think like I just thought*
> *it's all down to the parenting, you know, get them into the routines…*
> *(Isabel, interview, line 152-153)*

In reality Isabel soon realised this was not the case and her inability to keep to routines and follow popularly held beliefs made her feel like a bad mother. This led to Isabel and several women who already had children envisaging past experiences would lead them to adopt a more relaxed parenting style this time.

Often the pressure stemmed not only from women's own views of pregnancy and parenting but how they felt threatened by the views of others. Several women used the word judgement in relation to the views of other people, including health professionals. Laura explained how she planned for the visit of her health visitor with her previous child and covered up how she was feeling:

…you feel like the health visitor comes and you need to be, oh everything is immaculate and I'm fine…(Laura, interview, line 290-291)

As there is little training on how to be a parent, women had built up their own views, constructed mainly from the stories of others. Laura admitted during the interview she had found the first six to nine months after her first daughter was born an anxious time. She had reasoned that anxiety had stemmed partly from trying to be the perfect mum; by doing the right things and comparing herself to others and was a normal part of life with a baby.

As well as the difficulties with breastfeeding and issues with incontinence after a traumatic forceps delivery, Laura explained how comments about the birth made her feel:

I always felt like I'd done it wrong or I'd let myself down and I think because then people going oh I'd never let myself have forceps and I was like oh god why shouldn't you…I felt awful that I'd put her through that… I think that sort of mummy shame thing…(Laura, interview, line 57-60)

During this time Laura had not spoken to anyone about her concerns and stated she wished she had been more open and talked to someone about how she had felt. Laura accepted it may well have been her perception of others judging her, rather than actually being judged.

Pressure from social media led to feelings of frustration when comparing themselves with women who appeared to be coping with pregnancy. Gwenda explained some of the comments she had seen posted:

Gwenda: I think there is that kind of expectation that you should, you need to keep going to the gym, you need to keep…

Int: … do you think there's a lot of pressure then on the social media

Gwenda: I think so, yeah…on Instagram there's people like fitness instructors who get pregnant and keep posting the pictures of themselves up until they're like 35 weeks. Just gone trail running, well I'm feeling a bit more tired than usual but I feel great now. (Gwenda, interview, line 725-730)

Both Laura and Gwenda commenced pregnancy with mild anxiety and depression which continued throughout pregnancy.

The inability to keep going physically meant some women could not continue their day to day activities. Tara and Becky worked full time during pregnancy and both described the guilt they felt at not being able to maintain their normal standard of care around the home. Tara became tearful when describing her situation:

> Int: How do you account for the ups and downs?

> Tara: I struggled a little bit with feeling like a bad partner because I couldn't do as much in the house…(Tara, interview, line 126-129)

Feelings of guilt were mentioned by several women, four related to partners and household tasks. They remarked on letting their partners down, having to get them to carry out roles they were not used to, such as childcare. The latter was explained as motherly instinct, feeling it was their role to look after the child rather than their partners'.

Many women questioned their abilities during pregnancy and as mothers, expressing guilt and frustrations when comparing themselves to others. In contrast Rhian, who had used social media and compared notes with friends, appeared relaxed and unconcerned by what she observed or experienced:

> I'm quite glass is half full kind of person, I think I'm quite laid back and try to not dwell on anything negative and you know, yeah I think I've got quite a positive outlook in general. (Rhian, interview, line 31-34)

Possibly Rhian's positive view of the world was the reason for her relaxed attitude and low anxiety levels which were reflected in her EPDS and GAD-7 scores in early and late pregnancy.

It was not always parenting and physical aspects where women felt judged by others. Dawn explained how she felt her history of mental health problems were being viewed:

> I think that was always a worry for me that I didn't want people to assume that I was going to be a bad mother or like think that I was incapable of being a good mother because of my mental health issues… (Dawn, interview, line 368-370)

Dawn made consistent reference about being judged because she was young, undecided about the pregnancy, and had drunk excessive amounts of alcohol before she was aware she was pregnant. She also felt unsupported by her original midwife. This culmination of negative experiences led to a new midwife taking over her care, instigated by her mother. The change in midwife had proved positive and at the time of interview Dawn had received consistent care from one midwife with whom she had built a trusted relationship, this in turn had improved her self-esteem and mental health.

The emotional turmoil felt during and after pregnancy demonstrated how internal and external factors affected perceptions and the pressure this led to. Feelings of frustration, judgement and guilt led to insecurity and reduced self-esteem, which in turn had a detrimental effect on mental health. Natalie expressed her thoughts:

> *You know. After a baby, I think if you give birth to a baby you give birth to a load of guilt as well and it's managing that. (Natalie, interview, line 468-469)*

Natalie whose mental health was stable throughout pregnancy was very practical about situations, managing issues as they arose. Natalie's self-esteem and knowledge that she could overcome situations by planning, helped her keep in control of situations and reduce anxieties. Natalie explained how she dealt with feelings of guilt and frustrations by discussing them with her partner or having time alone.

Control – 'The anxieties are more to do with kind of the things you can't really control'

One way of overcoming negativity was by taking control of situations, a topic that arose frequently during the interviews. When control was taken away stress and anxiety increased for the majority of the women. Emma explained what made the situation worse:

> *Just been too busy basically, so relaxed about the baby but quite stressed about the…wanting to get life under control you know and that's a personality thing again wanting to sort of be on top of things. (Emma, interview, line 163-165)*

Taking control included being organised and making plans, but sometimes even trying to plan a smaller task could be a source of anxiety. What might seem like a simple job for some women became a real sticking point for others. Jackie, pregnant for the first time, spent many weeks fretting about the number of items to put in her hospital bag.

Even though she understood that uncertainties, such as the type of birth and length of stay, would vary the contents of the bag:

> *Jackie:…there's so much information about what to take for your hospital birth but nowhere that goes this is what you need.*
>
> *Int:…there isn't a list?*
>
> *Jackie:… there's a lot of lists and they vary between taking one vest, one Babygro, something to wear to take the baby home in, kind of nothing else. All the way up to a suitcase for baby and a suitcase for dad. I know every circumstance is different and it depends how far away you live, whether you have a C section or what, what your birth is like, but it would be useful to say right three Babygro's, three sleepsuits…*
>
> *Int: Oh okay.*
>
> *Jackie: But they give you a labour pack at the 34 weeks, even in there there's no numbers or specifics, it just says a vest, a sleepsuit, your maternity pads… (Jackie, interview, line 435-436)*

Jackie had expressed how organised her life had been prior to pregnancy, situations where she could not be precise and organised had caused immense anxiety. Due to the distress expressed over this and other concerns brought up during the interview, another 20 minutes were spent discussing particular issues after the recording had finished.

The birth of the baby was an issue noted by two of the women as an area which caused concern, and also where there is little control. Becky, who was pregnant for the first time, had requested an elective caesarean section mainly because she was worried about safety in labour after her sister's traumatic birth. Her other reasoning was so she could be in control of the situation, as she explains:

> *…so I sort of felt at least that way I've got a bit of control and I can you know, not have two days of labour and no sleep before then have a major operation and then have to look after a baby. (Becky, interview, line 348-350)*

Becky went on to explain she had support at home from her husband because she knew she would need extra help after the caesarean section. She also expressed how

she felt better after she had made the decision. Choosing to have an elective caesarean for non-medical reasons is a contentious subject. Both women who had asked for an elective caesarean section had talked with their consultants and felt there was less opposition to their request than they expected.

Having a choice in their care gave them back control and was discussed by several women. Tara talked about an USS appointment she had attended to assess the position of her baby:

> *I was a little surprised when I went for the last position scan because the midwife that did it wasn't very supportive of the fact that I didn't necessarily want to go for the ECV…I was sort of taken aback by that. (Tara, interview, line 97-100)*

Tara felt affronted that someone else was making decisions about her and her pregnancy without listening to her views. There are options if the baby is presenting 'bottom first', one of which is external cephalic version (ECV) where a skilled clinician tries to turn the baby around by externally palpating the women's abdomen. This is not always successful and can result in severe complications in 0.45% attempts (Rogers et al. 2016), such as fetal distress requiring an emergency caesarean section. Giving women an informed choice is not only beneficial for the women's self-esteem but also their right.

Others mentioned insufficient information from health professionals had left them feeling uncertain about their options:

> *Because the consultant has just looked at your scan report, they've digested it themselves, plotted it, but I want that, someone just to explain to me, what does that mean to me. (Natalie, interview, line 562-563)*

Natalie explained it was her work situation in a data driven industry that led her to question the scan report. Understanding aspects of their care was important to all the women. They often noted they were given some information but not enough for their needs, resulting in them looking elsewhere.

Hungry for information – 'Just google and see what comes up'

Women were asked where and what information they had obtained, initially in relation to the emotional side of pregnancy, however this did not spark conversation and therefore the question was changed to a general enquiry around information gathering for pregnancy. Results of these questions and general discussions throughout the

140

interview showed women were eager to find information on all aspects of pregnancy. There did not appear to be any difference between women who were pregnant for the first time or those who had been pregnant before.

Locating information was summed up by Pippa:

Pregnancy Information Source	n (%)
Technology	19 (95.0)
Google	11 (55.0)
Apps	11 (55.0)
Online discussion	7 (35.0)
Official sites	6 (30.0)
Scientific papers	2 (10.0)
Antenatal classes	8 (40.0)
Paper	4 (20.0)
Relatives/friends	3 (15.0)
Health professionals	3 (15.0)

Figure 5.3 Pregnancy information source.

Int: Where have you looked for your information, have you googled it, have you gone on the bumps apps, have you spoken to relatives, where would you go for sort of information?

Pippa: All of them. (Pippa, interview, line 592-596)

Women spent much of their pregnancy gathering information which came from a variety of sources. Technology played a huge part with 95% (n=19) of women stating they had obtained information in a digital form (Figure 5.3). This might be because it is instant and easy to access due to mobile technology.

Over half of the women stated they used *Google* as the first avenue:

Int: Did you go on any specific health sites, or did you just google?

Amia: Just google and see what comes up. (Amia, interview, line 179-180)

Women indicated this was mainly around the developmental side and progress of the pregnancy.

In contrast Dawn, one of the youngest women, replied with a definite 'no' when asked if she used google for information. She felt she was not in a position to assess the accuracy of information, therefore relied on advice from health professionals. Sometimes women utilised Google and selected the first sites, irrespective of their validity. Although they did accept a lot of the information was unreliable:

To a certain degree I mean you tend to google stuff don't you, everyone does and then you take it with a ton of salt. (Karen, interview, line 231-232)

A range of websites was used by women, some via google, and others purposefully looked for, NHS online, NICE guidelines, scientific papers, sites for student midwives

and third sector organisations, such as Tommy's (a charity which funds research pertinent to pregnancy and provide information to patients) were all reported.

> *Int: Any particular websites that you sort of feel you can look at for information, are they the sort of NHS ones or pregnancy related ones?*

> *Gwenda: Yes I guess I'd probably start with the NHS one usually, and then if I feel like I want more information…then I'd kind of look at the more pregnancy ones. Things like Baby Centre…that maybe go into a bit more depth around things or the NCT's [National Childbirth Trust] website is good…online forums which are kind of useful for seeing people's experiences. (Gwenda, interview, line 514-522)*

Some women only used official sites and one only reviewed scientific reports for information and shared them with her partner. The majority used a variety of sites online dependent on the purpose.

Information was not always helpful, a few women mentioned information about babies' movements. Jackie explained how she felt when she was signposted to online information:

> *Jackie: With the leaflet about the movements and if they stop and it's got horrible statistics about how many of those are then stillborn and stuff and call immediately and you get to the hospital…*

> *Int: You found that quite scary reading those statistics did you?*

> *Jackie: Yeah, I just thought if I'm looking at this booklet that's because I'm worried that my baby is not moving and I don't need someone to tell me that it's going to be a still born…(Jackie, interview, line 243-249)*

Jackie explained how she felt concerned by the information, prompting her to attend the maternity unit urgently, but confused on arrival by the midwives who appeared calm and reassuring. Trying to get a balance between enough and too much information is difficult: information is needed to prompt action but without causing alarm, and individuals' needs differ.

Hospital specific information was often accessed via an app, where much of the information that used to be printed has now been uploaded (2018). Apps were used by

55% (n=11) of the women (Figure 5.3), with many using more than one. The negative aspect was some required personal details to customise the site or provide information leaflets for the relevant hospital, which some women disagreed with.

Even though over half of the women used apps and found them useful, Victoria stated how she felt the advice contained on one app could cause anxieties:

> *It's more of the five warning signs of beauty treatments…It doesn't tell you what those warning signs are it will be kind of bullets… And so aromatically that person is in panic. If they have put a bit of self-tan on their legs, they will worry because they have done it. (Victoria, interview, line 926-930)*

This information was also available online through the hospital's own website, yet no one stated this as a source. Whether this was due to lack of knowledge or preference was not explored. Very few women mentioned information in printed form 20% (n=4). Rhian stated she never read any of the paper copies she received in her early appointment. This appeared to be a common thread and may have been due to the transition period when the information was being made available in a digital format.

Another source of information with mixed response was the use of chat sites, used by 35% (n=37) of women. Several stated they used them more for emotional support rather than for pregnancy information:

> *Yeah, I suppose kind of talking about the placenta praevia and kind of moods around it, you know looking at the NHS website or the other pregnancy websites are very kind of factual…whereas if you look at the forums around it there are people who have experienced it and you do get a sense of people going through the same emotions as you, that kind of anxiety about not knowing what's going to happen… (Gwenda, interview, line 547-551)*

Gwenda explained how her preference for information depended on the issue. Conversely several women stated they found chat sites places of contradiction as they were based on experience rather than fact and advice.

Not all information was obtained from technological sources. Antenatal classes were attended by 40% (n=8) of women. They were a source of information about pregnancy and birth. Similarly family members were occasionally consulted. The mother of one woman was a retired midwife and the sister of another a student midwife. Only three

women (15%) stated health professionals as their preferred choice of information for pregnancy.

Many women found being aware of all the facts reassuring. Conversely Pippa, who had expertise around genetic conditions, stated knowledge may not be a good thing:

> *Yeah, a little knowledge and it was that little knowledge is a dangerous thing…(Pippa, interview, line 263)*

Knowledge was also an issue that arose whilst talking to Karen, who was pregnant for the first time and also a health professional. Her experiences and knowledge of what could go wrong was the underlying reason for her severe anxieties in pregnancy and the anticipated birth.

A desire to become knowledgeable about mental health problems was a stimulus to accessing information or support. Jackie was in the minority searching specifically for information on postnatal depression:

> *Int: Okay, how do you find the information on things like postnatal depression, did that worry you or was it helpful or does it make you aware…*
>
> *Jackie: Quite helpful actually, it just made me aware of what to look for and I feel like if I'm aware of it I will spot it and be able to work with it a little bit more or if I spot that actually it's going more towards the postnatal depression rather than just me being a bit tired and stressed, I know that's when I can start to speak to people, professionals and stuff… (Jackie, interview, line 334-339)*

It was often when looking for information regarding physical aspects of pregnancy that information regarding mental health was found:

> *Yes so I use [baby app], I used it with [daughter] as well, there are always things that like pop up like the symptoms about post, pre and postnatal depression, there is not a huge amount but at least links… (Olivia, interview, line 300-302)*

Several noticed the apps linked them to support sites for further information. Often discussing postnatal depression or mood changes in pregnancy and baby blues.

Some of the women thought poor mental health only affected women after birth, this could be a reflection of the information they read. Similar to information in the media, the majority related to the postnatal period:

> *I haven't read much no, I've seen a lot of leaflets and this is always around the hospitals aren't they because you can get that post traumatic stress or something when the baby, afterwards, you know.*
> *(Helena, interview, line 275-277)*

In summary theme two reviewed the expectations felt by the women which were often of their own making. Judgment from others leading to inadequacy when trying to be the 'perfect mum' were often only perceived, leading to guilt and frustrations. Those who already had children were more relaxed in their approach having learnt from previous experiences. Circumstances not within the woman's control often led to anxiety, such as inadequate information from health professionals or complications during pregnancy. In order to remain in control there was a notable trend in absorbing knowledge throughout pregnancy. Technology played a large part with 'Google' being the preferred source. However some were critical of its bias or unreliability and depended heavily on official sources such as scientific papers. Very little information about perinatal mental health was obtained.

5.5.3 Theme 3 – Knowledge and conversations

Formal support for women with mental health problems assumes the women themselves are aware of a problem, want help and there are services in place to provide this. This theme considered women's understanding of mental health and informal support. It also reviewed services available to them during the antenatal period and contact with health care professionals.

Knowledge and understanding – 'oh she's got the luxury of being able to have postnatal depression'

Discussions regarding women's own mental health in relation to pregnancy and pre pregnancy changes in moods and emotions were discussed in theme one. This section relates to women's knowledge and understanding of their own mental health. Women freely discussed this during the interview but at times appeared to question whether feelings they had were of concern or not:

> *…I didn't realise what it was, didn't tell anyone, I thought its fine everyone checks their house 50 times before they leave for work…*
> *(Olivia, interview, line 29-31)*

Even those extreme checking behaviours had not alerted her to the fact that there was an issue: it had become part of her normal routine. It was not until Olivia's first pregnancy that she sought help, realising it had a negative effect on her lifestyle and caused her anxiety. On reflection she recognised she had exhibited OCD behaviours from childhood.

Separating temperament from poor mental health seemed to be one of the issues causing confusion:

> …bit like this is normal, I'm just making a meal of it and the other part of me felt oh I feel like this isn't normal… (Pippa, interview, line 721-722)

Hormonal changes were also used to explain changes in emotions. Mandy expecting her first baby explained her thoughts:

> …I would like to think that I would check myself… could just be hormones and feel like I can talk to people about that so at least kind of say I've been feeling like this for a while now you know, is that normal? (Mandy, interview, line 566-569)

Mandy alluded to the presence of her symptoms lasting 'for a while' making her think they were more than to be expected. It was arguably more difficult in pregnancy or with a new baby to care for to know what was normal, especially as these were new events for half of the women, with tiredness and responsibilities they have not experienced before.

A couple of women suggested other triggers which might have led them to seek support:

> Int: …do you think if you had any symptoms, would you know what to look out for, for symptoms if you were getting sort of more stress or towards the anxious stage?

> Cath: Yes, I think if I was finding that I wasn't enjoying things and that I was, you know if I was having trouble… sleeping about worries…So I think I would recognise that if something was playing on my mind... (Cath, interview, line 213-219)

Women explained how they improved their knowledge of mental health. Mental health first aid training was completed through work by two women and this had increased

their awareness of what to look out for and how to ask questions. Becky stated how this had helped her talk directly to her sister when she developed postnatal depression, which resulted in obtaining treatment:

> *So I did directly…ask about suicide and because that's what they said to do, … I think before that you would think oh I wouldn't say that because you might put an idea into their, but actually it was only because I asked her directly, she was really trying to kind of mask what was going on but I found out how bad it was…(Becky, interview, line 577-580)*

Ideally access to classes for mental health first aid would be available for anyone, yet first aid training which has existed for decades is not universally available. Barriers such as time and cost result in the majority not receiving training.

Lack of awareness was not specific to the women themselves. Several times conversation turned to the public's perception and understanding of perinatal mental health, or mental health in general. A few women with diagnosed mental health problems described the ignorance they had come across from family members:

> *I definitely, maybe not so much my generation or younger generations but I remember before I got pregnant the first time my mum saying…sometimes they say the most stupid things, …I think they said oh you'll probably get postnatal depression but essentially my sister's sister-in-law had postnatal depression… they were like oh she's got the luxury of being able to have postnatal depression…if you've got support you can indulge in it a bit…(Isabel, interview, line 687-694)*

Isabel offered the explanation as a lack of understanding from the older generation, implying the younger generation was more informed. Similarly Olivia noted how her mother had failed to fully understand her condition:

> *I think particularly with OCD as well, like there are so many people say like oh well, it's just me being OCD, and you think if only you knew what OCD is like you would not be saying that, in fact, my mum said it the other day … she said 'I'm a bit OCD about the door knobs' and I … had to walk out. (Olivia, interview, line 428-431)*

As well as her mother's lack of understanding, Olivia noted how the public's perception of her condition often made her feel cross. The words OCD are often uttered as a

phrase for people who are clean and tidy as opposed to a condition which is about far more than cleaning.

Regarding a mental health condition as optional, under the person's control or discounting the symptoms shows a lack of understanding. Efforts have been made in recent years to educate the public about mental health, to enable open discussions and reduce ignorance and stigma around the condition. Specific questions were asked to explore the extent of stigma with mental health. Emma recalled a conversation with her colleagues in work:

> *I don't think personally there should be a stigma but I think there still is …I was sort of talking to a colleague in work …and he said well actually I think if you're too anxious…to hack the work then maybe you shouldn't be in this job… (Emma, interview, line 430-433)*

Emma described how she challenged the colleague and let him know she had previously struggled in work and his attitude was not helpful.

Even friends were not always thoughtful with regard to mental health. Laura stated she would have been very careful in whom she confided:

> *Int: So I'm wondering how do you feel about talking to people …would you talk to people about your mental health…do you still feel there's a stigma there?*

> *Laura: I think there is a stigma and I do, I think there's still a bit of this mummy shame…it's certainly made me very wary of who I spend my time with and yeah who I'd probably talk to about things like feeling a little bit low, it wouldn't be something I spoke about really openly. (Laura, interview, line 556-562)*

Laura suggested the stigma around mental health was slowly improving and everyone agreed it was an important topic to talk about.

In an attempt to find out what information was available to the general public in relation to perinatal mental health, women were asked if they had seen or heard anything regarding the emotional side of pregnancy. A specific question was asked relating to information in the media:

> *Int: I mean you mentioned in the media though you've seen a lot more though have you, about mental health in general?*

148

Rhian: Yeah, I would say, yes definitely, whether it's a celebrity talking about their experience of pregnancy…on social media yeah or just when you're…reading different news. (Rhian, interview, line 409-413)

Many of the women stated they did not watch much television and only one described the storyline in a popular soap about a woman who developed puerperal psychosis. This was instigated and informed by a leading perinatal psychiatrist in an attempt to educate the public to this serious illness. However Pippa explained how this and the portrayal of pregnant women she had seen dramatised on television, did not resonate with her everyday experiences.

An increase in media attention had been mentioned by a few women, the majority of whom recalled hearing about general rather than perinatal mental health, as Victoria noted:

Int: you think that it's mostly postnatal depression that they have heard of… or is it just general

Victoria: it tends to be more general, if you have got signs of depression, if you are feeling suicidal, if you are feeling low. It's never 'is pregnancy letting you down' 'have you got the pregnancy blues'. (Victoria, interview, line 908-909)

This seemed to be a common theme in media, information and awareness of perinatal mental health. The majority of women were familiar with the terms postnatal depression and baby blues even if they did not understand the condition and some had heard about puerperal psychosis, all of which occur after the baby is born.

Int: …so you haven't had any friends that have antenatally had anxieties and depression?

Rhian: No, so actually yeah because you mentioned something earlier about or you were asking during the pregnancy but actually in my mind, it's something that happens maybe after. (Rhian, interview, line 496-497)

This was the perception of several women who had only thought about poor mental health in relation to the postnatal period.

Support – 'A problem shared is a problem halved and I've shared it with everyone'

Local support services for perinatal mental health rely mainly on informal support for mild to moderate mental health problems, with a general practitioner for crisis and ongoing care. The PNMHT criteria for referral, supports women with newly diagnosed mental health problems relating to pregnancy or severe perinatal mental health problems such as

First choice for emotional support	n (%)
Partner	7 (35.0)
Family	6 (30.0)
Friends/colleagues	3 (15.0)
Self	2 (10.0)
Professionals	1 (5.0)
No preference	1 (5.0)

Figure 5.4 Choice of emotional support.

bipolar disorder and previous puerperal psychosis. Although some of the women interviewed had symptoms of moderate depression and severe anxiety none of them had been deemed severe enough to be accepted by the PNMHT.

Women were asked what support mechanisms they had to support their emotional health. Medication, talking therapies and counselling are popular solutions. Isabel who had hyperemesis gravidarum throughout both her pregnancies suggested her preference:

> *A problem shared is a problem halved and I've shared it with everyone. (Laughed) (Isabel, interview, line 571)*

Isabel's work environment often led to open conversations about mental health, similarly Olivia had friends who were psychologists which enabled her to feel comfortable discussing mental health.

Most of the women described how talking to others helped the emotional side of their pregnancy. Sally, who became pregnant unexpectedly, had felt anxious during pregnancy and explained her need to talk to others:

> *…the support system for me is the most important thing…I'm an extreme extrovert so if I'm by myself…I always have to make an effort to see people and that always makes me feel much happier, going it alone is not something that I really like to do…(Sally, interview, line 194-197)*

For Sally this meant going out and speaking to her friends enabling her to feel content. In contrast, some women suggested time to themselves as ways to support their mental health.

Zoe who was expecting her first baby said she found social situations and talking to others uncomfortable whatever the topic and described how she found it very difficult to

express in words how she was feeling. Zoe mentioned writing her feelings in a book and how after completion, she found it easier to speak to her partner (Zoe, field notes, line 30-31). Zoe was the only person who did not want to expand on her mental health problems as a child and found it difficult to express her feelings during the interview.

These discussions and support were mainly informal and conducted with family and friends (Figure 5.4). Partners were the most important source of support for seven women. This came mainly in the form of practical help, someone to bounce concerns off or as a prompt to get help:

> *Because I think my husband is my best friend so we are really open with each other so I would just tell him. (Amia, interview, line 683-684)*

It was often the different temperament that led to women confiding in their partners, even if occasionally they were less than sympathetic:

> *…he's very much you know oh don't be silly and then move on… (Laura, interview, line 92)*

This did not seem to have bothered Laura initially; on reflection she thought maybe she should have pursued the issues and been more open with her husband. Yet he was still the first person she would turn to.

Jackie also described how her mother would not be sympathetic towards emotional issues. Family members were the second most popular people to confide in (Figure 5.4), with female members, often mothers, being the preferred person to go to. Tara and Sally both had children, and parents who lived abroad. Sally explained her contact with her mother:

> *…we don't have any family, here, all our family is still in the US, but I talk to my mum on skype … and I'm always messaging her… so she is probably the first person I would go to (Sally, interview, line 159-161)*

Pippa was the only person who mentioned her father as one of the first people she would contact for support:

> *…my dad was the one I went to, to have a chat about being anxious and yeah he was very laid back…(Pippa, interview, line 284-285)*

Gwenda did have a mother nearby for help but still phoned her father first even when she knew he wasn't paying much attention. Even where there was no response to concerns, women felt listened to and able to express their worries which had a therapeutic effect in itself.

Female friends were also mentioned as a source of emotional support, especially ones with children themselves:

> *So I think I'm lucky because quite a lot of my friends were quite open, we wouldn't tell the world about all our personal problems…we would talk about things with each other and that's helped me a lot. (Becky, interview, line 568-570)*

Colleagues sometimes provided support even though they did not necessarily understand the mental health problems:

> *I do have a close friend who I work with, …I have been really struggling to cope 'can you just help me check this otherwise I am going to be coming back at 10 o'clock to check' and I don't think she entirely gets it, but it's still nice just to have a little bit of support… (Olivia, interview, line 345-348)*

The 'little bit of support' meant Olivia could go home without worrying she had not checked something which would have increased her anxiety levels and led to OCD behaviours. Practical assistance was as much help as being listened to for several women, this in turn helped their emotional wellbeing.

Often women had more than one source of support:

> *So I was quite lucky that I live close to my parents and they give me advice and they help a lot and I have got a really supportive husband, supportive workplace...(Gwenda, interview, line 675-676)*

This seemed to sum up the needs of most women, practical and emotional help, advice, and support from more than one source, providing an environment where they felt secure. Gwenda went on to say she felt she was lucky to have this network and wondered what it would be like going through the same experiences without it. Several women indicated they had been thinking about mental health problems and mentioned their concern for other women who may not be as lucky as them with their support networks.

Workplaces were often the cause of stress and anxiety, but sometimes a place of support, as mentioned by three women. Several workplaces had counselling services which women had benefited from:

> *I've had support from the wellbeing group…I got involved with a peer wellbeing group…you see people who are in the same position which is unfortunate but comforting (laugh) and that experience has been really helpful. (Tara, interview, line 21-25)*

Two women found being a source of comfort to others helped their own mental health. Similarly Gwenda, after the death of her brother, became a bereavement peer counsellor to help others. Focusing on others' rather than their own issues may have helped shift the focus off their problems.

Self-help played an important part in women managing their own mental health:

> *Yeah I'm a great believer in self-help and but I know there's people out there to help you if you need to reach out. (Natalie, interview, line 286-287)*

Forms of self-help expressed by women included taking part in samba bands, running, art classes, going to bed early, taking time out and changing work patterns, all of which the women felt benefited their mental health. Women with a diagnosed mental health issue who had received treatment before had some idea of where they could go for support. Olivia explained her first choice of help was to access her CBT resources.

Social media was used extensively for information about pregnancy and occasionally a source of emotional support. Isabel who had suffered from hyperemesis gravidarum, and consequently spent days in bed, found comfort in online forums:

> *…that was amazing, like I probably spent quite a bit of time just sort of lurking on that website forum just because it's all women in the same situation and…they're the only people that can really understand. (Isabel, interview, line 223-225)*

Isabel stated it kept up her morale on the days when she felt really ill. She knew that sympathy was being provided from women who understood exactly what she was going through. Several women agreed this was more of a help than if provided by someone who had no personal knowledge of the condition.

Not all women felt this way:

…oh I can't stand it, mum's pouring their hearts out on Facebook, right you should be talking to your partner about this…(Natalie, interview, line 76-78)

A further source of support heavily relied on by women was joining antenatal classes. These were in the form of NHS classes, hypnobirthing, yoga and NCT:

I did NHS and then I did [name of class]…it's more like active birth … they'll do a series of exercises and then they'll stop and do like the education part of it and explain that the exercises that you just did is for this… (Mandy, interview, line 452-454)

Joining group sessions had the advantage of education, exercise, and a supportive network of friends. NCT classes were mentioned by seven women, grouped according to the locality and estimated due date. As well as providing information they encouraged group discussion to facilitate friendships:

…it was a bit like just buying a group of really nice friends (laughter) and sharing experiences. (Gwenda, interview, line 120-121)

…looking back now it's like speed dating for new parents… that was a small price to pay than going back to the GP, with depression or therapy. (Natalie, interview, line 87-88)

The benefits seemed to outweigh the cost of classes. Most of the women mentioned the benefit for their partners as well as themselves, unlike classes such as yoga which focused on the women. Even women with good support networks mentioned it was the bond with couples who were also pregnant, they appreciated the most because they could understand each other's concerns and excitement. It was outside the classes where the friendships flourished. Natalie described how two mothers who had developed depression recovered faster and coped better because of the friendships, in addition to support from health professionals.

This was not universally felt, a few women had preconceived ideas about NCT and were sceptical they would fit in. Dawn had apprehension about NCT and explained how she thought they may not accept her as a young single mum. She was surprised to find this was not the case and had common ground with another mother who also had mental health problems (Dawn, field notes, line 16-19). The social nature of the classes did not suit women who found social situations difficult, such as Zoe. It was the interactive nature of the sessions which made her feel uncomfortable. The course leader had provided one to one for the remaining sessions for Zoe and her partner

when she realised the anxiety it would have caused her to go to the group sessions, which they found beneficial (Zoe, field notes, line 26-27).

Friends, family and antenatal classes were seen as a good source of emotional support for most of the women, but a few believed they needed more one to one help. Two women sought extra help from voluntary agencies. Helena explained how she arranged this:

> …if I've been anxious or if I want to cry, if I've been wanting to hurt myself I would definitely tell you, …I need support. That's why I had a support worker, she knows I'm not going to hurt myself…I actually went to the Citizens Advice Bureau they help you with everything…
> (Helena, interview, line 249-253)

This support had proved invaluable to Helena, who found both the practical as well as listening service met her needs. Similarly Dawn's mother had searched for help for her when she was trying to decide whether to continue with the pregnancy. Even though the services were designed to assist women make decisions around terminations, she had benefited from monthly counselling.

Service provision – '…it just felt like it was a tick box rather than a conversation…'

In addition to informal and voluntary support women were asked about their contact with health care professionals and services regarding their mental health. Rhian who had not had any concerns about her mental health considered who she would access:

> …maybe GP first although I think GP, midwife, very different, health visitor as well, I don't know, GP for me always feels a little bit more sterile whereas when I'm with the community midwife it's a lot more relaxed…it depends what it relates… (Rhian, interview, line 474-477)

Only one participant (Figure 5.4) stated they would choose health professionals as their first point of call for their mental health.

The majority of women received care during their pregnancy from midwives, some had seen obstetricians and others their general practitioner. At their initial appointment with midwives the antenatal notes containing information on all aspects of their physical and mental health should be discussed with the women. Yet mental health appeared to be discussed only if women had ticked yes to one of the mental health conditions listed.

When asked about conversations with health professionals, women often could not remember being asked about their mental health or appeared not to know what was being asked:

> Int: What about when you've seen the midwife since then, has anyone asked you specifically about sort of mental health side of your pregnancy, do you feel…?
>
> Emma: …I think most generally how are you feeling question and I've always interpreted it as a physically how are you feeling. (Emma, interview, line 275-281)

Regularly the question 'how are you feeling?' was taken as an opening statement rather than an opportunity for a discussion or as pertaining to physical health. Questions and appointments were both viewed as focusing mainly around their physical health:

> Only just go and check the heartbeat and that's how I see those checks to be honest… (Laura, interview, line 401)

Women were aware they had a limited time at the appointments and were reluctant to begin conversations that would take time. It was almost as if the baby was well, they were not worried about their own health. Neglecting the detrimental effect poor mental health can have to the unborn baby.

There was even more confusion around the questions pertaining to mental health, seven women mentioned domestic violence questions being asked.

> I think they asked both, at different times…there's tick box, 'everything okay at home'? and 'you okay in yourself'?...But the majority I've always felt has been around more they're really pushing the domestic violence… (Laura, interview, line 350-353)

Although Laura appeared to understand the difference between the questions, other women were unsure.

The All Wales Maternity Records since early 2018 has the questions 'Have you over the past two weeks felt unable to stop or control worrying?' Questions sounding like a 'tick box' exercise rather than a conversation, were mentioned by several women. Discussion on the wording of the questions received mixed reactions with a few women

stating they were too direct, some stating they were not direct enough, and many not knowing what was being asked:

> *So I think there probably is room for more, just slightly probing questions you know, just maybe even how are you feeling hormonal, how are you feeling, have you been tearful. (Emma, interview, line 313-312)*

Occasionally women felt they were asked directly about their mental health. Pippa mentioned a conversation with a consultant she had seen before, with a special interest in women's mental health, who used very direct wording evading confusion. In contrast, sometimes the direct questioning made women feel uncomfortable. One woman disliked being asked if she could 'cope'. The wording prevented her from opening up for fear of being judged.

The reluctance to ask about mental health by health professionals may be due in part to the relatively recent inclusions of routine questions, with midwives still assessing the question they feel confident asking. Women all agreed they would be happy being asked about their mental health. It was not the demeanour of the midwife or doctor but process and questions which caused discomfort.

Several times women mentioned the number of health care professionals, especially midwives, who they encountered at their routine antenatal appointments. With only nine appointments for first time mothers and seven for second or subsequent pregnancies, over a seven month period, it is easy to see how much of an impact sickness, holidays and change of staff can affect the continuity. This meant women did not build a rapport with many of the midwives. Continuity is one of the five themes recommended in the new maternity services strategy (Welsh Government 2019b). Becky explained her feelings:

> *Int: …if you had been really upset or depressed or anxious or something do you think you could have gone to the midwives and discussed it with them. Would you have felt comfortable or do you feel there wasn't really an opportunity if you had of needed to or?*
>
> *Becky: I think, now I've got a regular one I'd feel happier about it… I went there was a different midwife and so I spoke to one of my GP's because I felt that I had more of a long standing…… so I think if I'd had one midwife the whole way through I probably would say definitely yes… (Becky, interview, line 480-487)*

In contrast Olivia felt so anxious prior to one appointment she would have talked to anyone:

> *…it must have been 28 weeks then, because I went to the midwife and I had a particularly bad week and I was very anxious and I just burst into tears… (Olivia, interview, line 91-93)*

Becoming familiar with the midwife helped women feel comfortable enough to talk about their mental health. Cath who was pregnant for the third time described her thoughts:

> *This is the only pregnancy where I feel like I've seen the same midwife enough times to actually, for her to know who I am. (Cath, interview, line 264-265)*

This works the other way, if the midwife is familiar with the woman they may sense when they are unhappy or struggling.

If women appear to be suffering with their mental health, there are several places health professionals can direct them for extra support. They can be referred to their general practitioner, provided with information for websites and internet or, if severe, can refer them to the PNMHT or specialist midwife. Victoria who had mental health problems described her experience:

> *…if you ring your doctors or something like that, you've got no chance in my surgery. I've rung and said I've had a mental breakdown and I wanted to speak to a specific doctor… (Victoria, interview, line 875-877)*

At this point Victoria felt she was in need of immediate support and yet she had been informed she would need to wait two weeks for an appointment. Women with concerns regarding babies' movements or feeling unwell can access same day appointments via the maternity assessment unit, showing an imbalance between the physical and mental health concerns.

Even if women manage to see their general practitioner, they often have a long wait for counselling. Zoe who had an existing anxiety disorder had been referred via her general practitioner for counselling prior to pregnancy and was still waiting two years' later (Field notes). Olivia mentioned the options provided at an antenatal appointment when she had been particularly stressed:

…you can go to your doctor and get signed off, and I said to be honest I don't want to get signed off because I am happy at work, … I know that this is just a stressful time, like it could be more stressed at home… (Olivia, interview, line 209-211)

Workplaces were the cause of stress for many women but Olivia's preference was to stay at work, so taking time off sick was not a suitable option for her. The midwife also mentioned a referral to the PNMHT, which Olivia declined at the time. However the midwife called back a few days later, stating she had changed her mind about the referral:

…she said 'I've got a lady who is suicidal and she would be someone that I would refer, whereas like, you are someone who is just a bit anxious at the moment'…(Olivia, interview, line 221-222)

Midwives follow the guidance provided to try to reduce the number of referrals due to insufficient capacity but this does rely to some extent on a judgement by the midwife. Even though a few women were offered referral to PNMHT, they were either turned down or not referred.

In summary theme three examined women's understanding of their own mental health showing confusion around what was deemed poor mental health and what were everyday stresses and strains. Information in the media had focused on improving knowledge of general mental health disorders and some in the postnatal period. This lack of information showed the continued misunderstanding and stigma around mental health from friends, family and colleagues resulting in some women feeling misunderstood and unsupported, especially those with mental health problems.

Support for women was mainly accessed from friends and family. Some had supportive workplaces but few mentioned health professionals as the first port of call for help. Antenatal appointments focused mainly on the physical health of the mother and baby which allowed little time for discussion around mental health. Where help was sought from maternity services women found staff approachable but there were few avenues for actual support, even for those with moderate anxiety and depression.

5.6   Summary

In conclusion this chapter reviewed the data generated from interviews with 20 women towards the end of their pregnancy. The cohort of women interviewed was highly educated, more in employment and higher professional occupations compared to those eligible for interview. The majority had developed mental health problems prior to

pregnancy, during adolescence or adulthood. Women described a broad range of mental health problems. No statistically significant differences were found between the anxiety and depression symptoms of women interviewed at the end of the pregnancy compared to early pregnancy.

Thematic analysis of the interviews produced three themes. Early pregnancy was the point where most women became anxious, only reassured by the USS that they were pregnant. This reduced anxiety but was made worse again by physical symptoms and pregnancy complications. Multiparous women commented that their busier lifestyles led to less time to relax which in turn led to stress, although they commented that they would be more relaxed around raising their children this time around.

Women's high expectations of their lifestyle also increased anxieties during pregnancy, partly due to a lack of control over situations. To counteract this, women's hunger for information often via technology was evident. Information was often sought for physical symptoms of pregnancy, with little found regarding mental health and what there was mostly applied to postnatal issues. Information in the media had increased awareness of mental health in general but this has not filtered through to pregnancy issues. Limited information from health professionals around topics such as streptococcus infection led to anxiety relating to the unknown consequences for the woman and baby. In contrast information relating stillbirths to reduced fetal movements caused anxiety.

Lack of understanding by the women and general public resulted in stigma and confusion about what is normal mental health and when help is required. The limited amount of information obtained related predominately to the postnatal period. Health professionals were inconsistent in discussions with women regarding their mental health, appointments revolved around the physical care of women and their babies. Self-help activities and change of lifestyle were reported as ways women maintained their mental health. Family and friends were the main choice of informal support. When professional help was required women either had long waits or did not receive timely treatment.

The next chapter relates to the midwives' phase of the study. Midwives employed by the Health Board were invited to participate by completing a questionnaire and/or attend a focus group. The aim was to understand their experiences of supporting women's mental health during the perinatal period.

Chapter six – Midwives' experience of supporting women's mental health

6.1 Introduction

The previous two chapters focused on the experiences of women with mental health problems. The aim of the work presented in this chapter was to explore midwives' skills, knowledge and experiences of supporting women's mental health. As the main care providers for women during the perinatal period, an understanding of midwives' experiences could help inform service provision for women with mental health problems.

The decision to use questionnaires and focus groups for data collection was discussed in chapter three. This chapter provides a description of the recruitment process for the midwives' phase of the study. Midwives were invited to complete a self-administered questionnaire. To enable comparison with other studies, results of the data generated from the questionnaire are presented as descriptive frequencies. Recruitment of midwives into three focus groups and composition of these are described, followed by qualitative analysis, presenting the three themes generated from the data.

6.2 Questionnaires

The midwives' questionnaire was designed to gain a broad view of midwives' knowledge, skills and experiences of supporting women with mental health problems in the perinatal period. An explanation for the choice of questionnaire was provided in chapter three.

6.2.1 Method

All midwives employed by the Health Board were eligible to participate in the survey. Information was circulated to midwives via posters, face-to-face contact, personal NHS emails and a closed moderated Facebook page for maternity staff. In consultation with each ward area manager, posters were placed in the staff rooms along with paper questionnaires and an envelope for those completed. Explanation and distribution of questionnaires at community midwives' meetings, study days and one to one discussion with midwives, were also used to promote the study.

Paper copies were used rather than electronic as the method of distribution. NHS emails are restricted to work computers, where time and access are an issue. Also 'older' midwives commented they were not very computer literate and may have been discouraged from completing the questionnaire. Having access to both electronic and

paper copies could have resulted in duplication which could not be checked due to the anonymity of the questionnaire.

Paper based questionnaires were placed in each staff area and an envelope for completed ones. A long timeframe for completion was provided to overcome obstacles such as shift patterns, part-time hours, maternity leave and busy shifts. Information at the beginning of the questionnaire explained the study and anonymity, with completion implying consent. Anonymity was provided to encourage participation and honest answers (Pearlin 1961; Malvin and Moskowitz 1983). This was at the expense of being able to track who had completed the questionnaires or more importantly who had not.

6.2.2 Recruitment process

During the period of data collection 285 midwives were employed by the Health Board with 250 in work, the remainder being either on secondment, long term sick or maternity leave. Questionnaires were collected weekly from clinical areas between mid-February 2018 and 30th September 2018. Questionnaires provoked discussion amongst staff who noted it was an important topic and how unprepared they felt in looking after women's mental health.

Opportunities were taken on quiet days or at the beginning and end of meetings and community staff were approached at their team meetings, inviting them to take part. At one team meeting questionnaires were provided for each midwife and extras for the team leader to pass onto midwives who were not at the meeting. Out of the 26 questionnaires provided 10 were returned over the following three months.

Response rates were not determined for each work area because midwives move around the various hospital and community clinical settings. The anonymity and time frame resulted in several midwives questioning whether they had already completed a questionnaire. One reason might be due to an online survey relating to perinatal mental health which was sent to all midwives the previous year. A visual review of the data did not detect any obvious duplications, although this was difficult to assess. Data collection folders from one area went missing twice containing at least 20 questionnaires, some of which may have been completed. A total of 220 questionnaires were distributed with 145 returned, four were incomplete but the completed questions were included in the analysis.

6.2.3 Results

Descriptive analysis

Data from the questionnaire were entered onto SPSS and checked for errors by producing frequency tables for each variable and examining the minimum and maximum values and missing data. Possible errors were checked against the questionnaire and corrections made if necessary. Verification of data entry by a research assistant employed by the university comparing each variable against the questionnaire produced an error rate of 0.6%. These errors were documented and changed after discussion between the person originally entering the database and the second checker. Where ambiguity arose, data management queries were formed and agreed with supervisors and documented to ensure consistency.

The main issue related to support services, the phrase 'community mental health team' was used in the questionnaire and several midwives asked whether this was the same as the 'perinatal mental health team'. This issue was not detected when the questionnaire was piloted. In hindsight it would have been better to have changed the option to PNMHT as both exist but are distinct services. Descriptive statistics and frequency distributions were produced. This was the most appropriate method due to the categorical nature of the questions and to enable comparison with similar studies.

Characteristics of midwives

The mean age of participating midwives was 39.8 years (SD=11.7, *range* 21-65) (Table 6.1). All midwives' employed by the Health Board were female. The majority of midwives (61.4%, n=89) worked over 31 hours per week, *mean* 32 hours (SD=7.7, *range* 3-40). Midwives had worked for the NHS for an *average* 12 years (SD=10.0, *range* <1-36).

The majority of midwives (68.3%, n=99) worked in the hospital in clinical roles either in the antenatal clinic, midwifery-led unit, assessment unit, delivery suite or antenatal and postnatal wards. Midwives based in the community made up 15.9% (n=23). A small number of midwives looked after the most vulnerable women (3.4%, n=5) such as those with severe mental health problems, substance misuse problems or asylum seekers. Several midwives (10.3%, n=15) had worked within this team at some point in their career. Over a third (37.9%, n=55) of respondents also had a nursing qualification and a further 1.4% (n=2) were trained mental health nurses. Of the 55 (37.9%) midwives with a nursing qualification 9.0% (n=13) had experience working in a psychiatric setting and 7.6% (n=11) had experienced short term placements as student nurses.

Table 6.1 Background characteristic of midwives.

Background characteristics	n=145	
Age M (SD) R n=135	39.8 (11.7) 21-65	
Hours worked M (SD) R n=137	32.1 (7.7) 3-40	
Years worked M (SD) R n=137	12.3 (10.0) 0-36	
	n	**(%)**
Years in practice		
1 year or less	17	(11.7)
2-5 years	28	(19.3)
6-10 years	28	(19.3)
11-15 years	18	(12.4)
16 years and over	46	(31.7)
Missing	8	(5.5)
Hours per week worked		
12 hours or less	3	(2.1)
13-30 hours	45	(31.0)
31 hours and more	89	(61.4)
Missing	8	(5.5)
Age		
21-32	46	(31.7)
33-44	38	(26.2)
45-55	37	(25.5)
56+	14	(9.7)
Missing	10	(6.9)
Main area of work		
Antenatal clinic	13	(9.0)
Antenatal/postnatal ward	13	(9.0)
Assessment unit	10	(6.9)
Midwifery led unit	18	(12.4)
Delivery suite	45	(31.0)
Community	23	(15.9)
Management	3	(2.1)
Preceptor midwife on rotation	4	(2.8)
Specialist role	7	(4.7)
Other	1	(0.7)
Missing	8	(5.5)
Specialist role		
Research midwife	3	(2.1)
Social worker	1	(0.7)
Clinical supervisor	1	(0.7)
Breastfeeding team	3	(2.1)
Specialist community team	5	(3.4)
Examination of the newborn	1	(0.7)

Additional qualifications		
Registered adult nursing	55	(37.9)
BSc psychology	1	(0.7)
Diploma in nursing	1	(0.7)
Nursery nurse	1	(0.7)
Family planning practitioner	1	(0.7)
PGCE	2	(1.4)
Registered mental nurse	2	(1.4)
Experience working as a nurse / student in a mental health setting		
Yes	13	(9.0)
No	123	(84.8)
Missing	9	(6.2)
Experience of a specialist role working with vulnerable women		
Yes	15	(10.3)
No	121	(83.4)
Missing	9	(6.2)

6.2.4 Midwives' knowledge, skill and experience

The most common mental health conditions encountered by midwives

The questionnaire explored midwives' experiences of looking after women with perinatal mental health problems. All midwives reported they had cared for women with mental health problems, most commonly women with anxiety (95.0%, n=138) and depressive (87.0%, n=127) disorders (Figure 6.1).

Figure 6.1 Most common mental health conditions encountered by midwives.
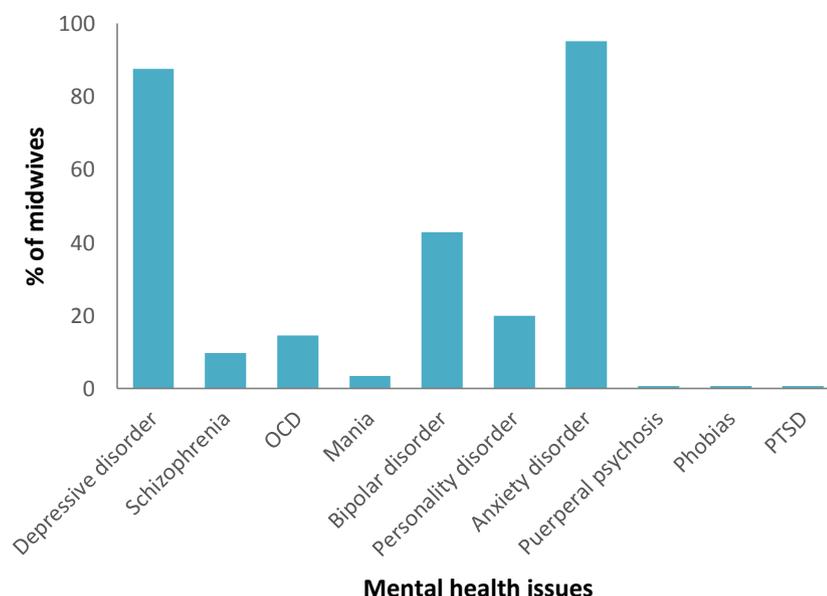
Attitudes of midwives

Midwives were asked to assess their colleagues' attitudes to supporting women with mental health problems (Figure 6.2). Over half viewed their colleagues as understanding (55.9%, n=81), tolerant (75.2%, n=109) and helpful (71.5%, n=103). They judged other midwives to be sometimes knowledgeable (76.6%, n=111) but also sometimes out of their depth (79.3%, n=115). They suggested their colleagues rarely ignored (75.2%, n=109), avoided (62.0%, n=91) or spent less time (75.2%, n=109) with women with mental health problems.

When asked if they thought the needs of women with mental health problems were recognised whilst under midwifery care, just under half (49.0%, n=71) recorded 'yes', a slightly lower proportion noted sometimes (44.8%, n=65) and only 4.8% (n=7) reported 'no'.

Figure 6.2 Midwives' attitude to women with mental health problems.
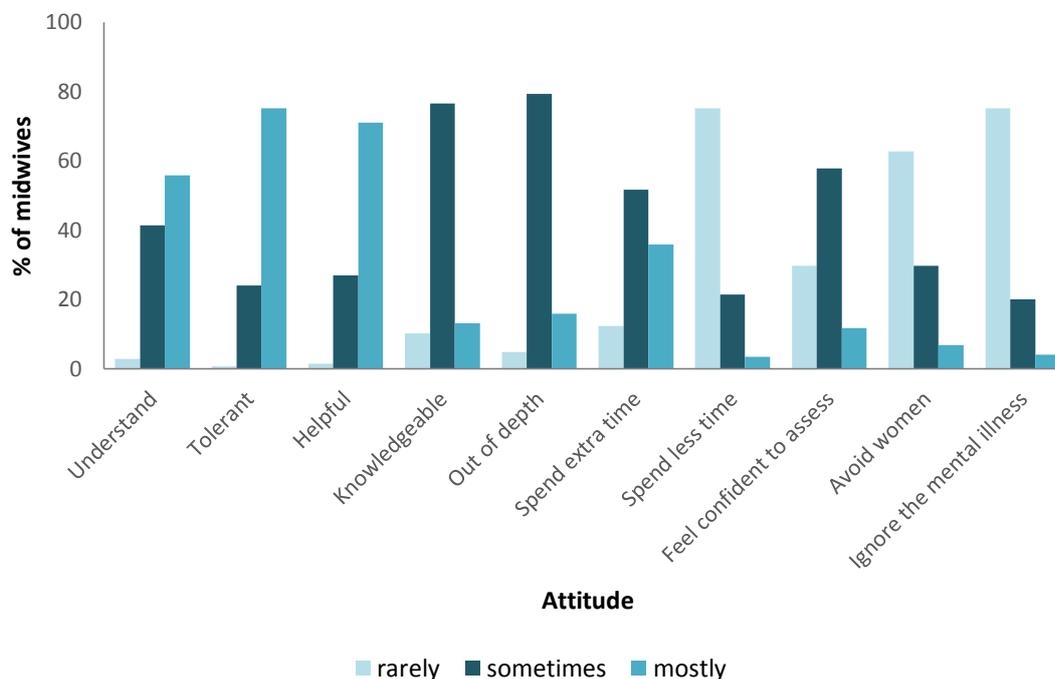
Midwives' views on the importance of skills and processes in clinical practice

The importance midwives placed on non-clinical skills and processes used in day to day practice were assessed (Figure 6.3). Communication was recorded as the most important skill by all midwives who answered this question (97.2%, n=141), of these 86.2% (n=125) recorded communication as extremely important. The next most important skills were empathy (80.7%, n=117), building rapport (77.2%, n=112), teamwork (75.0%, n=110) and quick and safe decision making (71.7%, n=104). The least important were relationship counselling (39.3%, n=57), psychiatric assessment (30.3%, n=44) and conflict management (16.6%, n=24).

Figure 6.3 Midwives' views on the importance of skills and processes in clinical practice.
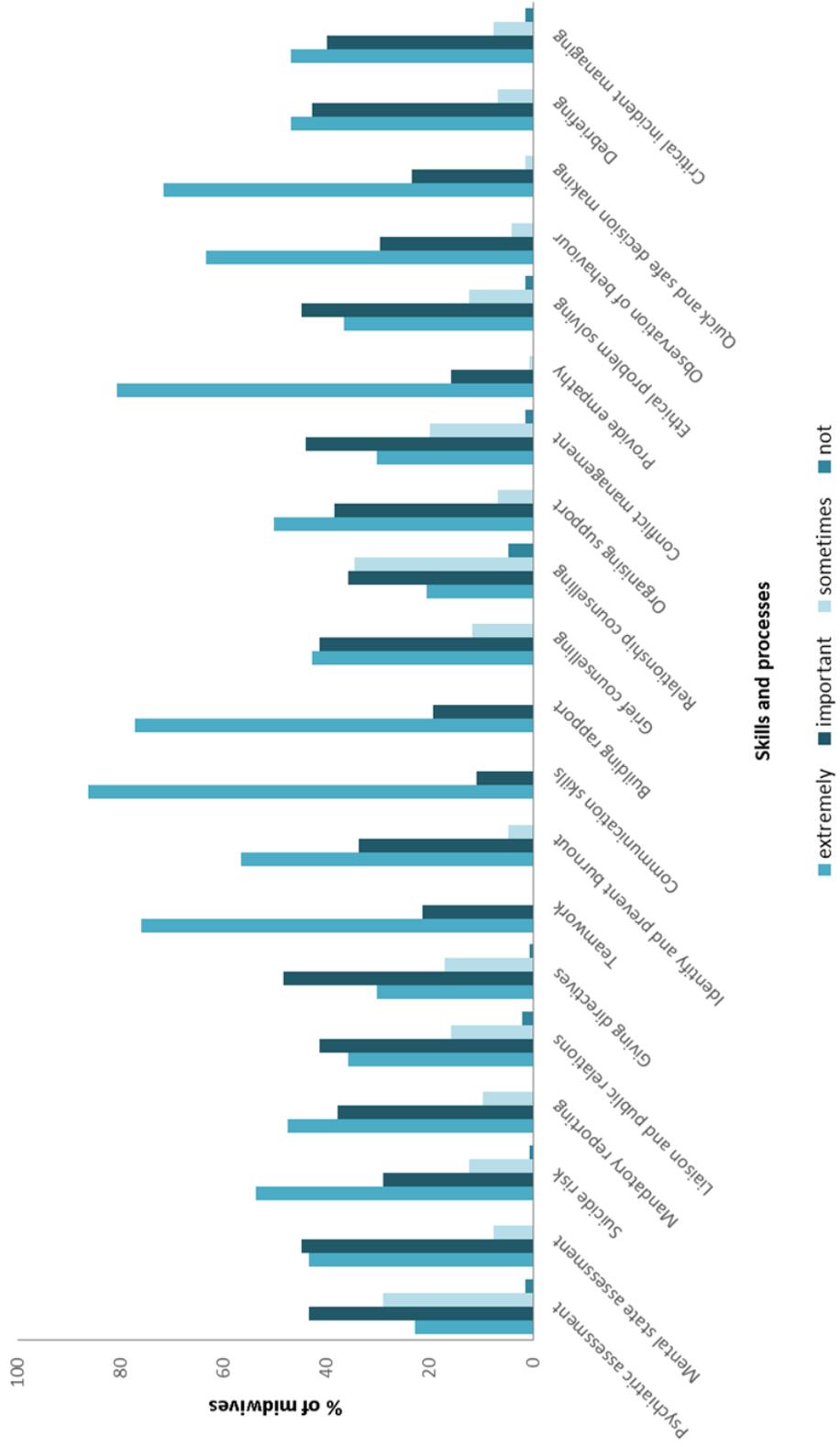
Potential symptoms checked for by midwives to assess women's mental health

Assessment of a woman's mood was the only symptom midwives unanimously agreed they look for (99.3%, n=144) (Figure 6.4). Anxiety levels (94.5%, n=137) and support (91.0%, n=132) the next most assessed signs. Anhedonia was rated the lowest, only 17.9% (n=26) stating they would assess for this symptom. During data collection several midwives questioned the word or searched the internet to find its meaning which could explain the low number who would assess this symptom. Memory (28.3%, n=41), insight (33.0%, n=49) and speech (37.9%, n=55) also scored low for potential symptoms assessed.

Figure 6.4 Potential symptoms checked for by midwives to assess women's mental health.
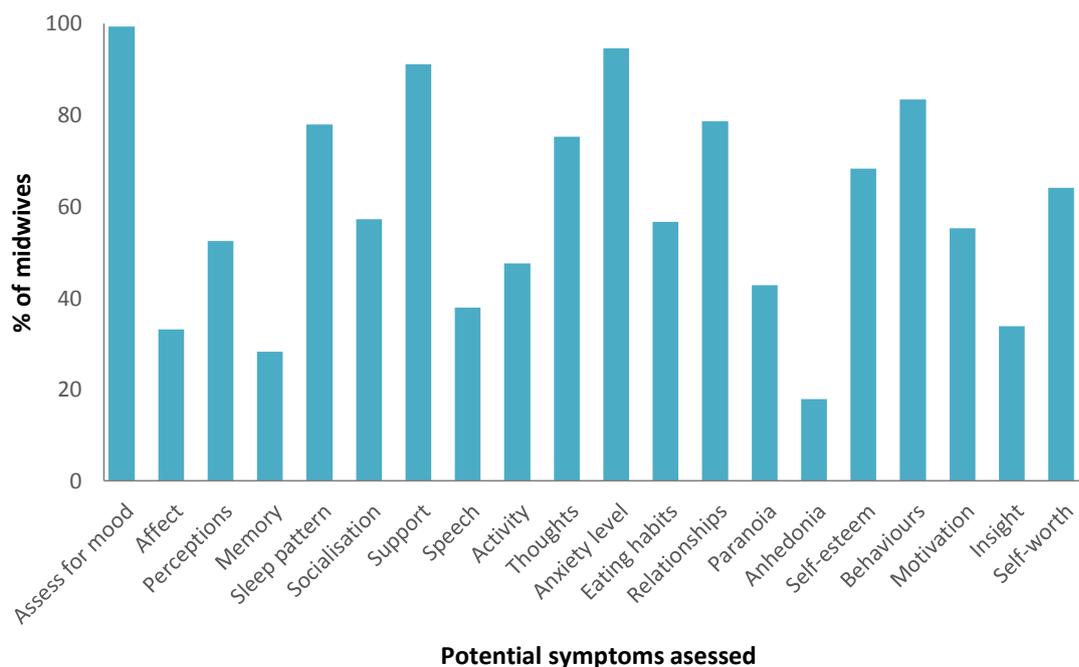
Frequency of assessment of women's mental health

Only 1.4% (n=2) of midwives reported they would never make an assessment of women's mental health and 4.8% (n=7) stated they did not know the frequency of assessment (Figure 6.5). The majority of midwives (82.8%, n=120) indicated they would make some sort of mental health assessment at least 50% of the time, with 48.3% (n=70) reporting they would make an assessment every time they met a woman.

Figure 6.5 Frequency of mental health assessment by midwives.

Frequency of mental health assessment
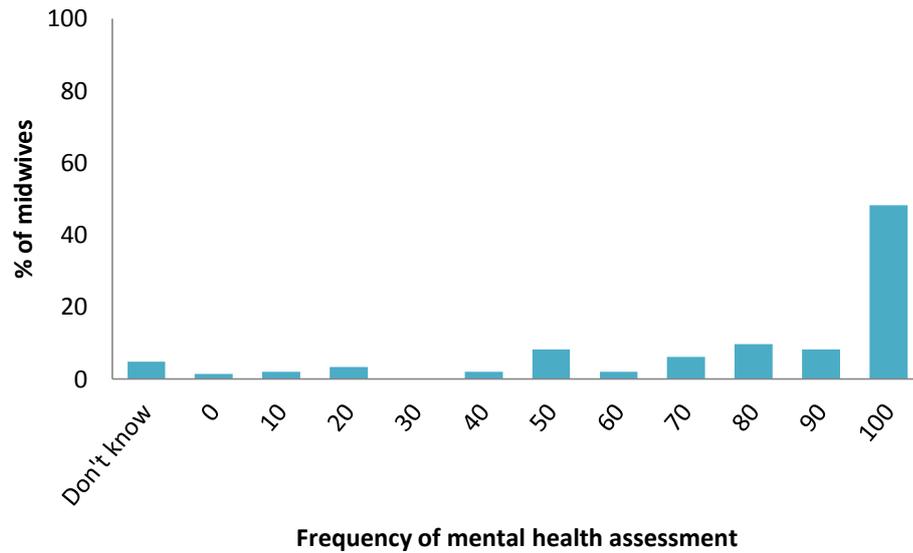
Tools midwives use to assess perinatal mental health

Midwives used a range of informal techniques to assess a woman's mental health (Figure 6.6). Noting the woman's mental health history (95.9%, n=139), behaviour (95.9%, n=139) and observations (93.1%, n=135) were the main ways used to assess women's mental health reported by midwives. This was followed by midwives using their 'instinct/intuition' (72.4%, n=105), clinical experience (70.3%, n=102) and around half (51.0%, n=74) reported using clinical skills. Other ways of assessing mental health noted by 9.7% (n=14) midwives, included their own experience (0.7%, n=1), concerns from family (1.4%, n=2) and rapport with women (0.7%, n=1).

Figure 6.6 Potential symptoms checked for by midwives to assess women's mental health.

Tools to assess
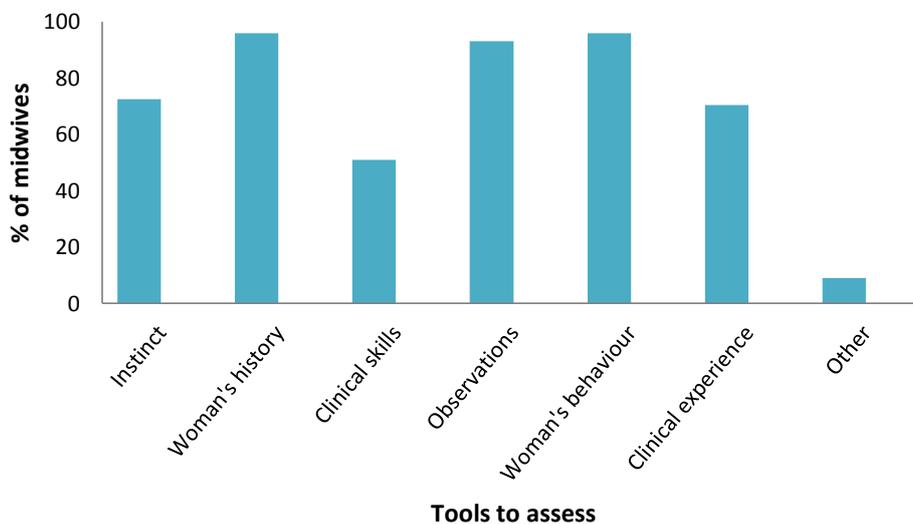
Community and professional referral pathways used by midwives

If concerned about a woman's mental health the majority of midwives reported they would refer to the community mental health services (93.1%, n=135) or to the general practitioner (88.3%, n=135) (Figure 6.7). The health visitor came third in the choice of referral source for 69.0% (n=100) of midwives. Although midwives have an understanding of the role of mother and baby units, there is no mother and baby unit in Wales. Written comments on some of the questionnaires suggested this was not an option or not their role to refer to this source, although 24.1% (n=35) midwives selected this answer. Midwives were least likely to refer to psychiatrists, social workers or occupational therapists.

Figure 6.7 Choice of referral pathway for midwives.
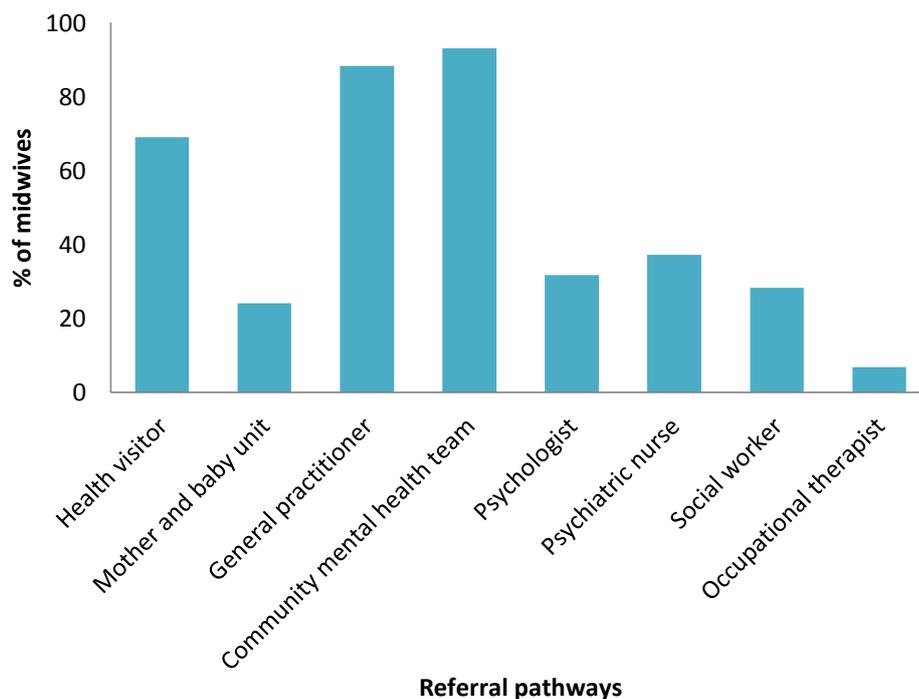
6.2.5 Midwives' training

Training

Around a third of midwives reported having received training on perinatal mental health (Figure 6.8). Reported training reflected aspects central to the midwives' role, for example in relation to alcohol use/abuse (42.1%, n=61), illicit drug use/abuse (33.8%, n=49), physical/sexual abuse (34.5%, n=50) and grief and loss (32.4%, n=47). Minimal training had been received by midwives around family (2.1%, n=3) or individual therapy (0.7%, n=1) which is not a core part of a midwife's role. Rates of training in mental health pharmacology (2.8%, n=4) and suicide risk assessment (3.4%, n=5) were also

170

very low. Mental status assessment had only been undertaken by 11% (n=16) of midwives.

In the previous two years 31.7% (n=46) of midwives had attended a course or training in relation to perinatal mental health, 10.4% (n=15) indicating it was through mandatory training or 4.8% (n=7) an e-learning package which are provided by the Health Board. Midwives noted conference attendance pertaining to perinatal mental health (2.1%, n=3), psychotherapy course (0.7%, n=1), volunteer Samaritans training (0.7%, n=1), and genetic counselling MSc (0.7%, n=1) as other sources of training. Midwives recorded training as important (15.2%, n=22) or extremely important (11%, n=16) to their everyday practice but only 21.4% (n=31) of midwives suggested it had helped them in their practice.

Figure 6.8 Types of training received by midwives.
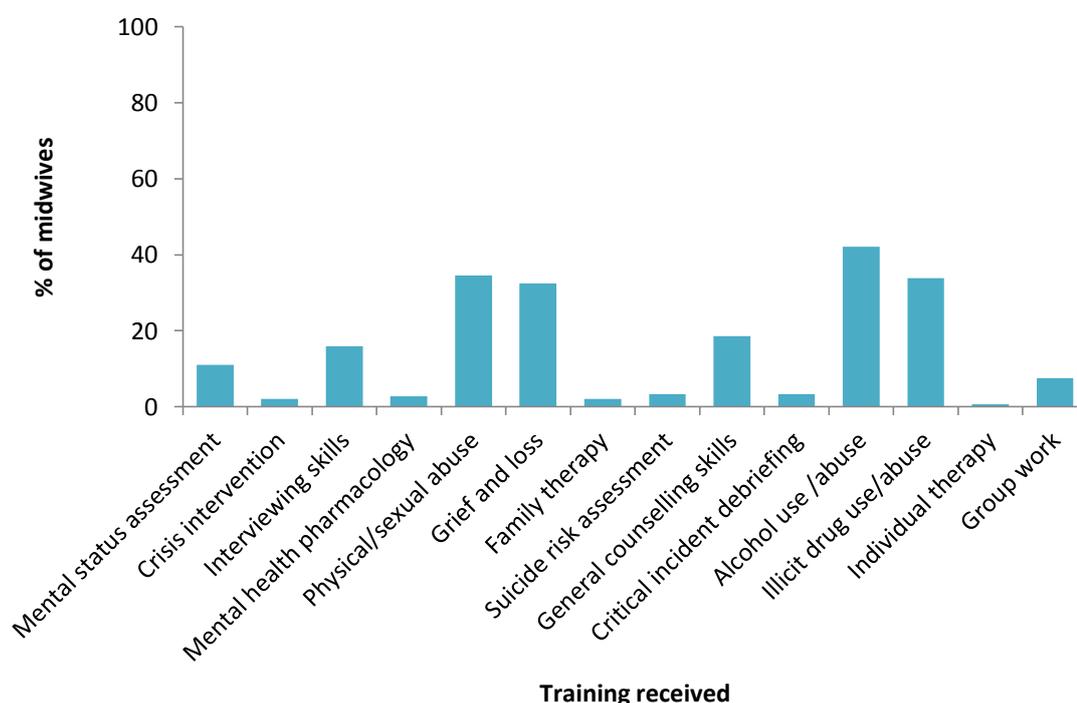
Source of learning

Midwives agreed they learnt most of their skills in relation to perinatal mental health on the job (86.9%, n=126) rather than by any form of structured education (Figure 6.9). Just over half specified their midwifery training was where they learnt skills (53.1%, n=77), even though around two thirds had qualified over five years previously (63.4%, n=53). Learning from peers was the second highest source (39.3%, n=57) of learning skills. Other experience was gained from either their own or families' mental health problems (3.4%, n=5) and advice from experienced health professionals was mentioned by 2.1% (n=2) midwives.

Overwhelmingly midwives (94.5%, n=137) thought they could be better prepared to look after women with mental health problems. Just under half (49.6%, n=72) felt confident working with women with mental health problems, 3.4% (n=5) strongly agreed they felt confident. One midwife (0.7%) strongly disagreed, 23 disagreed (15.9%) and 45 (31.0%) were undecided.

Figure 6.9 Where midwives learnt their skills to support women with mental health problems.
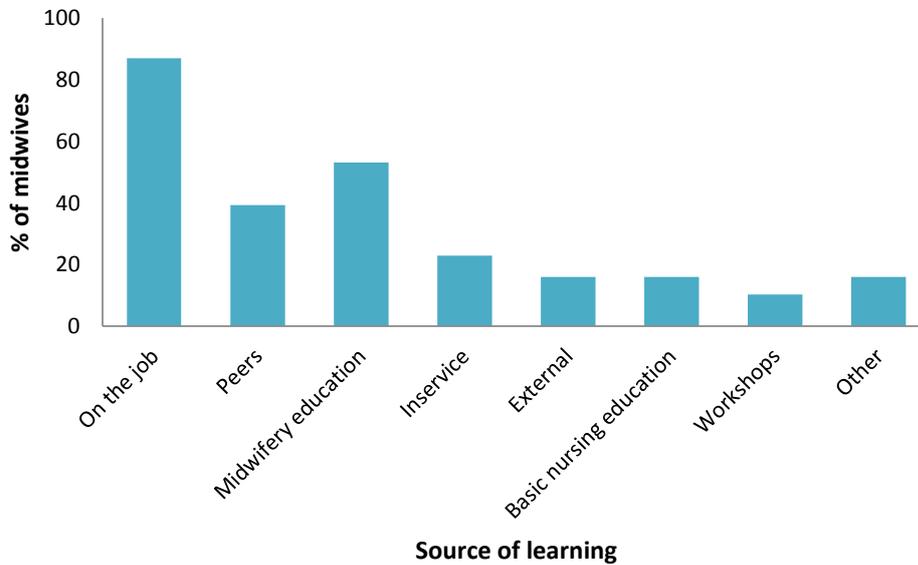
6.2.6 Summary

Questionnaires were completed by 145 midwives, with a *mean* age of 39.8 years, just under two thirds worked full time and over two thirds had been qualified for six years or more. The majority of midwives had cared for women with anxiety and depression. Colleagues' attitudes were assessed as understanding and tolerant but respondents also judged their colleagues to be 'out of their depth' when caring for women with mental health problems. Midwives felt women's mental health problems were recognised most of the time, with two-thirds stating they assessed women's mental health at least 80% of the time. Maternal mood was assessed by nearly all midwives, with only two stating they never assess women's mental health. They also used women's history of mental health and behaviour as ways of assessment and were aware they could refer to general practitioner or community mental health teams.

Midwives noted their training to be mainly associated with physical or social issues such as abuse of alcohol rather than specifically relating to mental health. Where perinatal mental health training was recorded it was mainly the one-hour session at the yearly mandatory study days and most skills were gained on the job. Although nearly a third had completed some training in the last two years, only a fifth stated it had helped

them in their practice. Overwhelmingly midwives felt they could be better prepared, although only half felt they lacked confidence in working with women with mental health problems.

6.3　Focus groups

The focus groups were designed to explore midwives' experiences of caring for women with perinatal mental health problems and their training needs. These expanded on topics covered in the questionnaires such as, attitudes towards women with mental health problems and conversations with women relating to mental health. Findings from the questionnaire noted training had been undertaken by some midwives but it had not helped in practice. Therefore this was one area which was explored with midwives. Allowing a better understanding of the types of training undertaken and usefulness as well as assessing what midwives wanted. Inconsistencies in mental health assessment was also another area discussed in the focus groups to explore in more detail the issues midwives face when speaking to women.

6.3.1　Methods

The aspects explored in the focus groups with midwives were similar to the questionnaire, with topics including clinical practice, knowledge, support, training and assessment of women's mental health. All midwives were invited to express their interest. Recruitment ran concurrently with interviews with pregnant women and questionnaire collection from midwives and was an iterative process to allow topics which arose to be explored further. A purposive sample of midwives was planned to encompass midwives with different levels of experience and areas of practice, consisting of up to 30 midwives over three focus groups. Information about the focus groups was circulated at the same time as the midwives' questionnaires.

To allow for discussion of themes that arose, the focus group topic guide was developed after a third of the questionnaires had been completed and an initial analysis conducted (Appendix 19). The role of facilitator is important for good group discussion, providing ground rules and introductions as well as asking the questions (Cronin 2014). The researcher acted as facilitator, with a plan for a moderator to provide assistance; helping with the practicalities of welcoming latecomers and timekeeping.

At the beginning of the recording midwives stated their pseudonym along with length of practice as a midwife and which clinical area they worked in at present to allow distinguishing between voices, assist name recollection and provide anonymity. To aid transcription during the focus group midwives were encouraged to state their pseudonym prior to answering a question.

Although midwives' mental health was not a focus of the study, discussion could have highlighted sensitive cases or personal issues. Written and verbal information about who to contact should any concerns arise were provided and details of the Employee Wellbeing Service highlighted. Additional notes were made by the researcher as soon as practical after the focus group about participants' behaviour, body language and context, and retained as field notes. Reflection on the first focus group allowed changes to be made to further explore issues and confirm emerging themes.

Audio recordings were uploaded and stored on a password protected server maintained by the University as soon as practical after the focus groups and deleted from the audio recorder. Recordings were encrypted using '7 Zip compression software for windows' and sent to a University approved transcription service via 'fast file'. Anonymity was requested at the point of transcription and recordings transcribed verbatim.

6.3.2 Recruitment process

Three focus groups were conducted over a period of three months, with 15 midwives encompassing a range of experiences and duration of service within the local Health Board. A purposive sample of midwives were approached for the first two focus groups. The specialist community team were approached first and invited to participate in a focus group. This team of midwives provide care for vulnerable women, many with mental health problems and therefore have more experience and work closely with mental health services. Practically this was feasible as they were a small team and met regularly. The focus group was arranged to take place at lunchtime after one of their weekly meetings. The second group of midwives were originally intended to be a group of community midwives but an opportunity presented itself during the recruitment period to conduct a focus group with a cohort of newly qualified midwives beginning employment at the Health Board. The study was introduced to the midwives during their induction week and were invited to participate in a focus group to share their knowledge, skills and experiences as students of supporting women with mental health problems. The meeting was arranged prior to the start of one of their inductions days. The third group comprised of midwives who had expressed an interest and were available on the selected day.

Midwives who showed an interest in attending were provided with an information leaflet prior to attending, in person or via NHS email (Appendix 20). The focus groups were conducted in the directorate office area in a quiet room. At the beginning of the session refreshments were offered and written consent obtained, including consent for audio-recording and use of quotations. One copy was given to each participant and a copy

placed in the site file (Appendix 21). Each midwife chose their own pseudonym, these were written on both sides of a card and placed on the table in front of them to remind them and others in the group of their name.

The researcher acting as facilitator reiterated the aim of the group and code of conduct emphasising The Code (Nursing and Midwifery Council 2015) with regard to confidentiality and disclosure of misconduct, as stated in the consent forms and information sheets. Questions were asked by the facilitator based on the focus group schedule with additional questions to expand on areas of interest. In the first focus group one supervisor acted as moderator. This provided both practical support in asking additional questions to encourage discussion on topics which arose and support for the facilitator as an experienced researcher. An observer was present during the first focus group to gain experience, in preparation to act as moderator for the second focus group. A decision was made that the third focus group with only four participants did not require a moderator.

The session continued until all the questions had been answered for the first and third focus group, duration 53 and 45 minutes respectively. The second focus group lasted 30 minutes and would have continued longer but had to be cut short due to the newly qualified midwives (NQMs) needing to go to their next meeting.

6.3.3 Composition of the three focus groups

Participants in the first focus group were midwives from the specialist community team (SCT) who support women with complex needs such as asylum seekers and women who abuse alcohol or drugs (Table 6.2). Midwives had usually been qualified for a couple of years prior to joining; gaining experience in other clinical areas. The duration of experience within this team ranged from eight months to 10 years.

Table 6.2 Midwives in focus group one.

Focus group one	Length of time in the community team	Midwifery expertise
Louise	4 years	Substance misuse
Nell	3 ½ years	Specialist community team
Lucy	8 months	Specialist community team
Jane	10 years	Perinatal mental health
Amber	2 ½ years	Asylum seeking women
Bramble	4 years	Safeguarding

The second focus group consisted of NQM who had started work in the Health Board the previous week (Table 6.3). They had trained in four different universities in England and Wales, one of which was the local university. Of 28 midwives invited, seven were interested, two of these were unable to take part due to prearranged clinical shifts.

Table 6.3 Midwives in focus group two.

Focus group two	Length of time in clinical practice	Clinical base
Lucy	NQM trained in another Health Board	Induction week
Georgia	NQM trained in another Health Board	Induction week
Carol	NQM trained in another Health Board	Induction week
Charlotte	NQM trained in another Health Board	Induction week
Jayne	NQM trained in this Health Board	Induction week

The third focus group was open to all midwives working within the Health Board, of 16 who expressed an interest, four attended on the day (Table 6.4). All midwives had experience in several clinical areas. Anna had been mainly community based, Sara on delivery suite and Lily had worked in all areas in her two years since qualifying, Lottie had again worked in most areas, with a substantial period in antenatal clinic.

Table 6.4 Midwives in focus group three.

Focus group three	Length of time in clinical practice	Clinical base
Anna	28 years	Mainly community
Lily	2 years	Working across all areas
Lottie	17 years	Currently on delivery suite but has worked across all areas
Sara	22 years	Mainly delivery suite

6.4 Thematic analysis

Thematic analysis was used to detect, analyse and report on patterns found within the data (Braun and Clarke 2006) to provide a detailed insight into the experiences of midwives providing care for women's mental health during the perinatal period. Transcripts were reviewed for accuracy using the audio recording and alterations made to ensure anonymity of the participant and correction of technical terms. This provided

an added area for familiarisation, as the transcripts were actively read. Thoughts were noted as a reflection of the content and main areas of interest (Braun and Clarke 2006).

Transcripts and field notes were entered into NVivo11. The process of identifying initial areas of the text which appeared interesting and meaningful and reflected aims of the study were assigned a code. These were generated by methodically working through the transcripts. Once all transcripts had been coded they were systematically reviewed again to encompass the new codes generated during later transcripts. This became an iterative process with codes generated and others being added.

Codes generated from the focus groups and field notes, along with initial notes from the familiarisation stage of analysis, were reviewed. These were then transferred onto mind maps, handwritten reflections and post it notes with quotes and used to build categories and themes. They were reviewed and rearranged numerous times to ensure the themes remained distinct and within themes coherent. During the process of analysis, subthemes were rearranged and combined or sometimes moved to another theme to avoid repetition, with quotes attached to the theme names to provide context.

Three themes were generated:

- ➢ Theme one – 'Conversations' reviewed midwives' contact with women and how they discussed mental health.
- ➢ Theme two – 'It's immensely complex', examined some of the issues midwives faced when supporting women's mental health such as the complexity of women's lives and referral systems.
- ➢ Theme three – 'There's another gap in their care' explored areas where midwives believed further provision was required, namely training for midwives and support for women.

6.4.1 Theme 1 – Conversations

Conversations with women regarding their mental health are important in order to understand women's needs and offer support if required. Discussions with women are recommended by NICE (2014) and local documentation provides prompts at routine appointments. Midwives were asked about their experiences and conversations with women during the perinatal period and the issues which stood in the way.

Asking the questions – 'If I'd just been asked I would have said yes'

Midwives are the main point of contact for the majority of women during the perinatal period, providing an ideal opportunity to speak to women about their mental health.

NICE (2014) suggests midwives ask about the women's mental health at each routine visit during both the antenatal and postnatal period.

Questions in the handheld All Wales Maternity Records provide a background into the woman's mental health and family history and offers an opportunity for midwives to assess women's mental health using the two Whooley (1997) questions at the initial visit. An additional question has been added since 2016 to ask at each routine visit, 'Have you over the past two weeks felt unable to stop or control worrying?' Jayne expressed her thoughts:

> *Maybe there needs to be more training to the midwives who are doing these booking packs, because it's not asked every appointment… (Jayne, focus group 2 – NQM, line 475-476)*

No formal training was provided to assist in this change of practice. All midwives who worked in the specialist community team stated they were comfortable and asked questions about mental health:

> *I agree what Amber said I'm comfortable talking about it but whether you're doing it right, you, but you do the best that you can yeah. (Lucy, focus group 1 –SCT, line 216-217)*

Midwives felt relaxed in their approach but also expressed a fear they might not be 'doing it right'. Carol, a newly qualified midwife who had trained in another Health Board explained her unease around conversations observed as a student:

> *Yes they had it in the one in this trust yeah, I don't know if they're the same but a lot of midwives will read them kind of verbatim and it's quite hard then for women…it's again like a tick box exercise so there's not really that flow to the conversation. (Carol, focus group 2 – NQM, line 178-180)*

No specific advice has been provided on whether these questions should be asked verbatim or whether they are for guidance, therefore the decision has been left to individual midwives as to how they approach the topic.

Although there were questions in the antenatal notes many of the midwives explained the different ways they began discussions:

> *I'd say there's also different ways of asking it … sometimes you might ask more than once in the same consultation…you start off how are*

you, how are you feeling and then you know throughout an actual antenatal check you can pick up on how their emotions are and then you might ask it in a slightly different way or you know, more probing questions or open questions…(Bramble, focus group 1 – SCT, line 47-51)

Bramble revealed how she used multiple ways of assessing mental health and treated each woman as an individual, tailoring her assessment accordingly.

Using different terminology and questions is important especially when women have cultural or language differences. Asking the questions in the antenatal notes verbatim would not be suitable in this situation as they often do not understand the terms mental health or depression. To overcome this, midwives suggested alternative questions:

I deal with a lot of people that don't speak English and have different cultures and backgrounds so I don't go in how is your mental health, I'll use different words. So I ask everyone but at different times throughout the antenatal period but I ask questions like how is your sleep pattern, do you sleep well, are you ever nervous, are you ever unable to sleep, can you concentrate, all those things…(Amber, focus group 1 – SCT, line 53-57)

Amber used questions to elicit symptoms of mental health disorders, whether this was through training or from experience was not explored. None of the midwives suggested using the EPDS and GAD-7 screening tools as a method of assessment, even though they are recommended by NICE (2014) if there are concerns about a woman's mental health.

Midwives' employed other ways of assessing mental health such as observing women's reactions:

…when you listen in [to the fetal heartbeat] you get that reaction from them and I can really get a good view on if they're just not bothered or sometimes they're elated…(Amber, focus group 1 – SCT, line 351-352)

Ambivalence on hearing the fetal heartbeat could be an indication of poor bonding with the baby. This could indicate an unwanted pregnancy or an underlying mental health issue, such as depression, both of which warrant further discussion with the woman.

Midwives who work in the hospital may only encounter women once during the antenatal period, during inpatient stays or unscheduled care. Records for these visits make no suggestion of asking about the woman's mental health, although midwives stated they were aware of its importance and explained how they made an assessment:

> *Int: …anyone else got experience of speaking to women at various points in their pregnancy…*
>
> *Lily: I think if you kind of ask them in the delivery suite, you do a labour assessment and then look through the hand held notes…you know would be key questions whether they'd had a past history or whether they've ticked … if they've been down or depressed because they ask it throughout the antenatal bits. And I also just ask them you know, is there anything you're really anxious about, you know with the labour and delivery specifically. (Lily, focus group 3, line 29-35)*

Lily also suggested when working on the wards during a 12 hour shift, despite having never met the woman before she could detect signs of anxiety from discussions and observations.

> *…like the other week I was like going around and like just pop in to do their postnatal check-up and one of the women like crying… just being able to sit down and chat with her, she seemed to find it really helpful…(Lily, focus group 3, line 131-133)*

Lily went on to advise the woman that her feelings could be due to 'baby blues', common in women a few days after giving birth and recommended if she continued to feel unhappy and tearful, she should speak to her general practitioner.

Midwives are in a unique position to provide a platform for women to discuss mental health problems, yet this opportunity is not always being optimised due to external factors.

> *I would say that a lot of them [midwives] treat mental health in clinic as a tick box exercise really because the clinic appointments are so short, so in 10 minutes you have to go through all of the physical elements of pregnancy and you check that everything is okay and then mental health is really pushed aside. (Georgia, focus group 2 – NQM, line 122-125)*

Despite the detrimental effect poor mental health can have on the unborn baby, the majority of time at the antenatal appointments is taken up with checking physical aspects of the woman's and baby's health.

All focus group participants agreed it was important to ask women questions about mental health and had discussed this with the women they supported:

> *Women are like 'if I'd just been asked I would have said yes'… I think a lot more women would disclose about mental health problems but the opportunity isn't there. (Jayne, focus group 2 – NQM, line 483-485)*

Providing a platform for women to discuss mental health is important as they may not disclose an issue voluntarily. Continuity was also seen as an important part of caring for a woman's mental health.

Continuity – 'I think it's to do with the trust and continuity'

Continuity has the benefit of building up a trusted relationship, allowing women to feel comfortable confiding in their midwife and disclosing any issues they may have.

> *…they're feeling down but because you've got that regular contact covering the pregnancy they do trust you…the first step has been made really is the important thing… (Lottie, focus group 3, line 117-121)*

After building a trusting relationship with the women and enabling them to be open about their mental health, midwives felt inadequate that all they could do was refer to another service where the woman would have to discuss the whole conversation again.

> *…it's really important that you talk to us about it but then once they disclose I'm then like, thank you for telling me, go and tell your GP again now and that must be really hard for them and I would imagine a lot don't go and speak to the GP. (Jayne, focus group 2 – NQM, line 163-165)*

Continuity is also important from the midwives' viewpoint. Building relationship enables them to detect when the women might not be 'themselves'.

> *Yes exactly it's not just disclosing, it's that you get to know the woman, …that's not just with things like anxiety and depression, it's kind of postnatally with things like psychosis and things like that …if*

you already know them you can tell if they're being different from how
they otherwise would, so I think continuity is really important. (Lucy,
focus group 2 – NQM, line 245-249)

Tiredness and baby blues are common in the postnatal period but when the feelings continue for several weeks it could be a sign of depression or anxiety. Knowing the woman previously or being able to assess the woman at more than one point in time would increase the chance of detecting an ongoing issue which needs treating. Comments in the field notes relating to midwives in the specialist community team indicated the compassion they felt towards the women their cared for.

Anna specified how important continuity was to her as a professional:

I think it's paramount actually, continuity of care actually you know
you build that relationship and you understand your ladies' needs and
that you can also monitor whether if you made a referral whether that
referral has actually made an impact or made a positive outcome on
the actions that you've taken… (Anna, focus group 3, line 103-106)

In summary, theme one reviewed midwives' conversations with women. Midwives are ideally placed to assess women's mental health during the perinatal period and were keen to undertake this as part of their role. Although midwives did not use formal assessments of women's mental health they all agreed it was important and described how they assessed women as individuals. Time restrictions were a barrier to discussing mental health with priority given to the physical health of mother and baby. Continuity was seen as imperative to building a trusting relationship which enabled women to feel comfortable disclosing issues and allowed midwives to discern changes in mood, as well as an opportunity for midwives to assess suggestions they had made to women under their care.

6.4.2 Theme 2 – 'It's immensely complex'

Midwives described how a lack of knowledge and understanding from the women, society and health professionals often led to stigma, preventing women receiving support. The complexity of women's lives, complicated diagnoses of mental health intertwined with social concerns make it difficult to know which source of support is required.

Complicated lives – 'You can't put them in little compartments, that's the complexity of it all'

Mental health problems vary from everyday stresses to anxieties or depression and severe mental health problems such as bipolar disorders or schizophrenia. The NQM were asked which mental health conditions they had encountered the most during their training. Their experience matched midwives who had completed the questionnaires or attended the focus groups, they had all supported women with anxiety and depression:

> *Yeah I, again a lot of women with anxiety and depression during pregnancy that had come to a booking appointment having had those things already. Quite a few women who have disclosed maybe anxiety as teenagers, anxiety and depression early on in life but maybe not experiencing it now…(Carol, focus group 2 – NQM, line 48-51)*

Many midwives noted these conditions were often pre-existing, several commenting the conditions became worse during pregnancy. When it came to severe mental health problems NQMs stated they had only encountered a few women with bipolar disorders and schizophrenia during their three years training, similar to the majority of midwives.

Midwives in the specialist community team usually support women with more severe mental health problems, compounding the lack of experience for the majority of midwives. They described the rate of women with mental health problems in their team:

> *Moderator: So what proportion of the women that are on your caseloads will have adverse mental health issues in one form or another?*
>
> *Amber: Really high proportion.*
>
> *Louise: Around 85 percent even.*
>
> *I'm Nell and I think because our group have got social problems on times it has an impact on them so I'd say yeah it would be quite a high proportion, yeah, yeah.*
>
> *Bramble: I'd say the same, maybe 80, 90 percent yeah. (Focus group 1 – SCT, line 107-113)*

In some cases women reported mental health problems where there was no formal diagnosis. Jane the specialist perinatal midwife described how one woman claimed she

had bipolar disorder despite no evidence in her records. More time and experience meant Jane was able to access additional records for women and recognise some of the symptoms to provide a fuller understanding of the woman's needs. She described how she supported women:

> *…'go on this website, have a look and have a look what symptoms you've got', they normally diagnose themselves and then that'll tell and they'll say 'oh no I haven't got bipolar, it looks like I've got an unstable personality disorder'. (Jane, focus group 1 – SCT, line 139-142)*

Most women supported by Jane did have severe mental health problems which were diagnosed pre-pregnancy, some of whom were already receiving support but required specialist perinatal services as well.

In contrast women with mild to moderate issues might not be aware of a problem, choose to ignore or not disclose conditions due to the stigma or perceived pressure from others. Anna mentioned her view of women's experiences:

> *…depression, about the baby blues, how common it is, they know the percentage, they know one in 10 ladies gets postnatal depression but sometimes unless you've actually gone through it you think it won't happen to me and sometimes it's very hard to admit that you are having postnatal depression because it's still considered as a negative aspect of your wellbeing. (Anna, focus group 3, line 173-175)*

Midwives described how women become concerned about taking medication for mental health problems. Women are given advice in early pregnancy and informed of the need to stay in hospital after birth so their baby can be observed for signs of withdrawal. Louise described some women's reactions:

> *If they are thinking what damage am I doing. Actually some ladies are adamant they want to stop their medication when actually they need it…making a big thing about that postnatally and keeping them for four days, it makes them all feel guilty. (Louise, focus group 1 – SCT, line 556-559)*

Taking medication during pregnancy is known to be dangerous. When it comes to certain conditions such as mental health, in a similar line to women with epilepsy, there is a balance between keeping the mother well and the possibility of harming the baby.

As well as a lack of knowledge, midwives were aware of the perceived stigma around mental health and noted how this led women to withhold information or decline referral:

> …I went to see a lady today, she'd declined referral so perinatal had sent her to me…when I'd spoken about it further, and she was like oh yeah, okay, I will be referred to them but very often you find initially they've said no to that team…(Nell, focus group 1 – SCT, line 605-608)

It is not only stigma which reduces mental health disclosure, it is often complicated by social issues. Midwives, especially those working in the specialist community team, support women with multiple needs and complex lives for example asylum seekers, or women who admit to substance misuse:

> What I've come across quite a few times when if it's like domestic violence and things, and there's a lot of mums will say the partner has said I'm going to have the baby because you're mental… so then they're reluctant to say how they're feeling because he's already said you're mad, and your family are mad and I'm going to take the baby. (Nell, focus group 1 – SCT, line 544-548)

Pressure from families could reduce the chances of women in these situations discussing mental health, delaying diagnosis and support. Other reasons noted by midwives were the fear of social workers becoming involved and removing their children:

> She's afraid because she's in a foreign country and the Home Office, is the Home Office going to take my children. It's really important we tell us because we can help you. (Amber, focus group 1 – SCT, line 533-534)

Midwives described how this fear led women to take matters into their own hands. Lucy explained one woman's strategy:

> …she had got several mental health problems and she'd increased her dosage of medication on her own because she said she was scared to go into the GP or speak to someone about her mental health, how she was feeling, get social services involved and she thought it was going to be like negative against her. (Lucy, focus group 1 – SCT, line 536-539)

The fear that worsening mental health would cause social service involvement shows how the woman's misunderstanding around mental health during the perinatal period reduced the chance of the support she needed.

There is a perception the general public lack understanding around mental health and require educating and discussions to reduce stigma. This attitude was also noted amongst healthcare staff.

Women with severe mental health problems are mainly cared for by the specialist community team but when admitted into hospital for the birth of their baby and initial postnatal care they are cared for by hospital midwives unfamiliar of their history and circumstances. Midwives in the specialist community team described several instances where either they or the women had noted a lack of compassion and understanding.

> *Mod: How do you find when women come, you know they have all this support from you antenatally, then they come in to have their babies and their care for staff who don't have the level of experience. How do you feel about the care they get?*
>
> *Jane: With my women I feel they are judged and I feel that you know, I think if you've got a lady coming in that is unwell with her mental health, I think staff are a bit scared to look after her, they're frightened because they don't know what to expect … there is some stigma still with mental health and I think it's just sort of breaking the barrier really. (Focus group 1 – SCT, line 425-429)*

Midwives cited a lack of skills and knowledge leading to a fear of looking after women with mental health problems, resulting in negative attitudes and derogatory language. Bramble explained how one woman had overheard a midwife calling her *bonkers* and classed as a *challenging patient*, which had a detrimental effect on her anxiety. Jane and Amber recounted what women had said to them:

> *Jane: And I think again, sort of handovers and the stigma of the patient, you know they might say in a handover, oh the patient bed six is awkward or she's mad…*
>
> *Amber: And it gets passed on and on and on and then people judge people before they even meet them, before they've even got to the bedside. And they've got this so I've got an awkward patient and I've got a patient that's got schizophrenia.*

Int: Have you heard staff saying, using those words then, I've got an awkward patient?

Jane: Yeah to be honest, yeah I have (general agreement)… (Focus group 1 – SCT, line 453-459)

Experience through clinical practice or training could inform midwives and help them become more confident caring for women's mental health and consequently reduce stigma.

The combination of mental health problems and pregnancy appeared to be especially concerning for mental health nurses, unfamiliar in caring for pregnant women:

…we had a lady that was sectioned [under the Mental Health Act] and she was coming over for delivery and they brought her over two weeks before her delivery because they were scared in the hospital [psychiatric] section in case she had the baby, so they got her over [to maternity] and then people could see because she was schizophrenic, people were scared, schizophrenia, they get this picture of people in their minds and it's all this hoo ha…the lady was fine, delivery went well but it's just that difference in professions and the way we're trained. (Jane, focus group 1 – SCT, line 433-439)

Health professionals are often experts in their own narrow field. Mental health nurses are not trained to look after pregnant women and midwives are not used to supporting women with severe mental health problems. To overcome some of the issues, the specialist community team had developed a strategy to support the staff:

…we tend to put on our system when this lady gives birth please contact us, because I like to come in and sort of follow them up, so I'll go on the postnatal ward…(Amber, focus group 1 – SCT, line 448-449)

Being able to contact staff who have provided care and understand the women's needs is beneficial for the hospital midwives who may be unaware of the complexity of issues. Limited time to assess and complete a plan of care can cause added anxieties for midwives.

Complicated referrals – 'they had to go to the GP first, the GP then refers to the primary mental health services, primary again refer to a community mental health team…'

There was confusion from midwives around the referral criteria to PNMHT who specialise in the assessment, diagnosis and treatment of women affected by moderate to severe mental health problems in the preconception and perinatal period. This multidisciplinary team consists of Jane the specialist perinatal mental health midwife, nurses and a psychiatrist. Due to an increase in referrals, the local PNMHT has had to change its referral criteria. Lottie explained how she had seen a shift in the service provision:

> *…now because of the influx of women to the service and they've only got a very, very small team and they can't accept obviously everyone, so they've had to tier it and only accept the very, the very unwell women…(Lottie, focus group 3, line 284-286)*

Consequently there has also been a change in the threshold for referrals for the specialist community team:

> *….so for example our team we used to be more of a TLC [tender loving care] team whereas now, the child protections so high we haven't got capacity, our criteria has changed…(Louise, focus group 1 – SCT, line 278-280)*

This has had a knock-on effect, with women once supported by the specialist community team, no longer getting extra support. They are now being cared for by community and hospital midwives.

Jane described the difference between midwives and the PNMHT:

> *…I think their threshold is a lot higher than a midwives threshold would be so whereas midwives sort of worry quite a lot and we're concerned about someone, you speak to the perinatal team and they're not so concerned…their cut off is very different and I think that's confusing for women. (Jane, focus group 1 – SCT, line 234-240)*

To reduce numbers, the referral criteria to the PNMHT has been altered to only include women with pre-existing or pregnancy related severe perinatal mental health diagnoses. The moderator, observer and facilitator commented after the focus group

that they were not aware of this criterion (field notes). This could provide a reason for confusion amongst midwives.

Working out whether the issue is pregnancy related is not always straightforward, Amber explained her dilemma:

> *…some of them are, whatever has happened to them, the trauma, when they come in they're pregnant, the pregnancy makes it worse so it's really hard to differentiate then isn't it, is it pregnancy related or is it from their other stuff…(Amber, focus group 1 – SCT, line 335-337)*

Some women supported by the specialist community team are asylum seekers and have fled from war zones or other traumatic situations. As one of only three 'dispersal' destinations for newly arrived pregnant asylum seekers arriving in Heathrow, some women require post torture counselling available only in London. Making the decision about whether the trauma is pregnancy related, and therefore referred to the PNMHT is required or if it is trauma but not related to birth, requiring a posttraumatic stress disorder (PTSD) clinic, is difficult. Furthermore the waiting lists for treatment are long.

> *Amber's lady with the PTSD, yes probably referring them to trauma clinic or those clinics is the best option but when you have a wait time of up to 18 months and they're pregnant and more than likely get worse in the pregnancy…(Bramble, focus group 1 – SCT, line 385-388)*

Sometimes the convoluted process for referral delays access to care:

> *…I've got one patient who's been in [city] for over two years and still hasn't had an appointment yet with trauma clinic, she's been on the wait list for because they had to go to the GP first, the GP then refers to the primary mental health services, primary again refer to a community mental health team, community mental health team then refer to another clinic who then refer her now for the specialist. (Bramble, focus group 1 – SCT, line 391-395)*

Even when women appear to fit the referral criteria, midwives were critical of the PNMHT and their lack of understanding of the women's complex lives:

> *Not always but sometimes within the perinatal team they don't always see that women can have mental health problems as well as other*

> *problems and sometimes they can be a bit judgemental. Again even*
> *if they've got a social worker or substance issues or they tend to be a*
> *bit blinkered…(Louise, focus group 1 – SCT, line 499-502)*

Louise expressed her concern around barriers to accessing the PNMHT. This was further complicated if women had their baby removed at birth, as they were then denied care:

> *We see some of our ladies are referred to the perinatal mental health*
> *team and there's significant social concerns and I did have the*
> *perinatal nurse ring me up to see whether the baby is going to be*
> *removed because if it was then she probably wouldn't have worked*
> *with her. (Lucy, focus group 1 – SCT, line 512-514)*

Jane explained how working alongside the PNMHT had led to them changing their services to support women for a month after birth, even if their child was removed from their care. There were still changes midwives felt required input from PNMHT. At present they do not receive referrals for women whose babies have died during pregnancy or birth, an area where women are understandably traumatised.

When midwives decide a referral to the PNMHT is appropriate, the process can take several weeks. Once the referral has been received the women are contacted and have to opt-in:

> *…that means that women need to ring back to say that I'm happy to*
> *meet before the appointment but if the women feels quite vulnerable*
> *she may not have that strength or confidence to call back… (Anna,*
> *focus group 3, line 257-259)*

Women struggling with their mental health may not have the inclination to ring back and ask for an appointment.

In addition, women who are asylum seekers and dispersed to another area have to begin the process all over again. Once the woman has opted into the service she then requires a first assessment, via telephone, difficult if there is a language barrier or limited phone access. The specialist community team had the added advantage of being able to spend more time to assist with the referral system.

Despite the narrow criteria for referral and assessment process, women who are accepted by the PNMHT receive good care:

They're under our care [midwives] for 28 days [following birth], keep them a bit longer but you know perinatal mental health team keep these women for a year. (Jane, focus group 1 – SCT, line 523-524)

This only applies to a minority of women who become pregnant each year.

In summary theme two reviewed midwives' experiences of caring for women with mental health problems. For the majority the conditions encountered were anxiety or depression but when mental health problems were severe and combined with social issues, inexperienced health care professionals found caring for women a challenge. A lack of training and knowledge was noted as a possible cause of negative attitudes by staff. Obtaining support beyond the midwives' remit was confounded by inconsistent service provision. Access to specialist services was complicated by the high threshold for acceptance into care of the PNMHT, leading to some of the most vulnerable women lacking expert support.

6.4.3 Theme 3 – 'There's another gap in their care'

The third theme relates to aspects of service provision that midwives suggested need improvement to enable them to provide appropriate support and care for women's mental health. Areas such as training to improve midwives' knowledge and confidence, and services to support women were seen as major gaps in service provision.

Training – 'We're the experts who haven't had any training'

Midwives were generally sympathetic and aware of the negative effects of poor perinatal mental health on the mother, baby and family:

I think there is recognition that you know, conditions like mental wellbeing as well as social and environment can impact on adverse childhood you know, so but how do we reduce it…(Anna, focus group 3, line 505-506)

They want to help but revealed they did not know how to speak to women with mental health problems or what to do if women disclosed a problem.

Conversely a few NQMs commented older midwives were less understanding and knowledgeable implying experience was not the issue but an absence of training in the past as the cause:

I looked after one lady who we visited at home and the midwife I was working with, absolutely amazing midwife, really quite old school in her approach and this woman said…oh I feel a bit teary and her

husband said actually yeah she is not quite right and the midwife had said oh you know, it's probably just baby blues… I went to visit her with another midwife a week later and the woman had gone to her GP and she was put on some medication…(Carol, focus group 2 – NQM, line 189-196)

Even though Carol stated she had worked with a few older midwives who held this attitude, there did not appear to be a consensus between all midwives. Midwives trained 'long ago' would have received information regarding postnatal depression and puerperal psychosis as the topic has been covered in midwifery text books for decades (see chapter one).

Despite Carol's comment, implying younger midwives were more informed and less judgmental, comments by other midwives did little to back this up. Charlotte described her view of training:

The only thing I would say is, thinking about it, I think midwives are much more hotter on recognising postnatal depression, that's a big one for us, postnatal depression but depression developing in pregnancy I don't think is ever thought about or discussed or anything else…(Charlotte, focus group 2 – NQM, line 453-455)

Charlotte alluded to the fact that training had changed little over the years with postnatal depression still the main mental health disorder discussed. Considering midwives care for women for around six months in pregnancy and only 28 days after giving birth, midwives highlighted the lack of training on antenatal mental health.

There was agreement training overwhelmingly focused on the physical health of mother and baby:

…as a student I think my training didn't fully prepare me for mental health and for sort of discussing mental health, I don't feel as confident with mental health in comparison to the physical side of pregnancy. (Georgia, focus group 2 – NQM, line 128-130)

Midwives are experts in their own field and follow the NMC Code. Referring women to appropriate services if needed, working within the scope of their practice using only skills where they have been trained, assessed and feel competent. If women present with reduced fetal movements or raised blood pressure, midwives know what to do, they follow the procedure, use their skills and knowledge to assess the woman, make

decisions and refer to the appropriate service if necessary. However when it came to women with mental health problems they felt there was no clear pathway to follow.

Even where training had been undertaken midwives felt it had not fully prepared them for supporting women:

> *It felt like loads of theory, facts and but I don't think it really helps you, it doesn't really help you when I'm in that situation where I am with somebody who's…mentally just struggling a little bit…(Lily, focus group 3, line 385-387)*

This was a general view of midwives, knowing the theory was important but it was the day-to-day care of women which midwives were more concerned about. Their main requests were practical aspects of how to talk to women, to ask questions and information relating to medication and its side effects.

The NQMs were asked about their training, anticipating it would be better than those who qualified several years ago.

> *Int: …what sort of training do you think you actually had during your three years of midwifery training, just briefly.*
>
> *Carol: …we had a really useful multi professional day at uni… talking about how to refer, how to access them, we had a question and answer session which was really useful…we all just kind of had case studies and talked about what our role would be and how to tackle the different sort of women…(Carol, focus group 2 – NQM, line 368-377)*

The NQMs trained in several different Health Boards and had mixed opinions in how prepared they felt to deal with women who presented with mental health problems. A similar day to the one Carol attended was provided for students in another Health Board but they did not find it at all beneficial, stating poor organisation.

Formal training is not the only way to learn and 50% of students' time is spent in clinical practice. Lily stated how she had gained experience:

> *…I think that's more come from experience and watching other people, talking to them and hearing how other people have handled it. (Lily, focus group 3, line 387-389)*

Midwives' keenness to learn about mental health was evident and other forms of study had been undertaken in their own time:

> …all of my knowledge is from my own personal interest in it and me knowing that I need to know about mental health issues…(Georgia, focus group 2 – NQM, line 403-404)

Some of the midwives had opted to attend training and conferences as a way of gaining more experience:

> Int: Have you done anything outside your official training…

> Jayne: …we got invited to the birth trauma conference last year and you had to…I went and I felt like in that day, that seven and a half hours I learnt so much more than I ever did in my training. (Jayne, focus group 2 – NQM, line 428-430)

In addition books can be purchased and free online modules relating to perinatal mental health are available, although none of the midwives mentioned these.

Expectations that midwives in the specialist community team, due to the nature of their job, would have attended more training were unfounded:

> Int: Going onto training, has anyone had any specific training in talking to women about perinatal mental health or gone on any courses, any e-learning?

> Jane: I do the mandatory training for midwives, but myself no, (all laugh), but you know although I've worked in this scene for a long time I've picked up a lot and I do work alongside the perinatal mental health team so I pick up a lot from them but myself and Louise, we did the training and we're going to get the perinatal mental health on board for midwives but that's it I think.

> Amber: I've had no training.

> Louise: the only one I've done is the level three safeguarding with mental health…

> Jane: I've done that.

Louise: No, No, but it's not actually that applicable to caring for women.

Bramble: I know a couple of us have done the motivational interviewing training as well which is obviously a way of speaking to the women and encouraging change and talking you know about any concerns that they've got so that was like a two day course.

Jane: that was years ago though (laugh).

Lucy: I was going to say I've had no training. (Focus group 1 – SCT, line 173-202)

The motivational interviewing had led to changes in the way Bramble had conversations with women, whether this had any impact on the women and their mental health is not known. Although the specialist community team had received some training, most of their education had come via working on the job and learning from each other with some input from the PNMHT:

They [midwives] tend to ask us questions don't they, you know they come to our team and we do some joint work with them don't we sometimes. (Amber, focus group 1 – SCT, line 623-624)

…and the mandatory you know, every midwife goes on that every year, it's more of a refresher really. We're the experts who haven't had any training. (Louise, focus group 1 – SCT, line 625-626)

Despite the limited training Louise highlighted they were providing the one hour yearly training for qualified midwives. Midwives noted this was the only post qualification training provided in relation to mental health they were aware of.

Attempts by midwives to improve training to support women with mild to moderate mental health problems had led to two members from the specialist community team attending a course designed to be cascaded to other midwives. This was never completed due to the cost and midwives feeling unprepared to support women, let alone train other midwives. Jane described her concerns:

…just to be left to go off and do it and you worry that you're going to make women worse… (Jane, focus group 1 – SCT, line 635-636)

Suggestions were made from several midwives about how training could be improved.

…I do think scenarios would be a fantastic idea and I think the same as we do with the PPH and shoulder dystocia associate and we know it just in our sleep but with mental health I would love to do that where we would know from start to finish what to do with women with mental health issues. (Georgia, focus group 2 – NQM, line 470-409)

Understanding how to assess and support women's mental health was a major issue discussed by midwives, citing a lack of training. Even with the training provided, midwives felt there were inadequate resources to support women who have mental health problems.

Support services – 'women with mild and mild to moderate anxiety or depression are often left with very little resources to access'

The previous theme mentioned referral to the PNMHT for women with severe mental health conditions. Even so midwives will still be providing some care during the perinatal period supported by the team.

Midwives were asked if they knew of any services they could refer women to if they were not eligible for referral to PNMHT but felt the woman required more support than they themselves could provide. For mental health problems this was often to primary health care services, which appeared to depend on geographical location. Anna described some services she was aware of:

If you're in a large practice there may be some mental health nurses who actually work one day a week to see the general public mental health needs…as midwives we are able to make a referral to them… but that's only if you've got a very large practice…(Anna, focus group 3, line 249-253)

Sometimes women decline referral. Midwives described how they felt unsupported and were unsure how they could provide support themselves:

Mod: What sort of gaps do you see?

Louise: For example I went through our referrals yesterday, I had a referral for a lady, her mood is lower, she's progressing through the pregnancy but she declines medication and she declines counselling and she declines seeing her GP…

Int: What do you do then, yeah, okay.

Louise: As a midwife how are we meant to make that better when we've had no training, the mental health services for pregnancy won't necessarily take her to support us so we're kind of sometimes managing these ladies with no mental health input. (Louise, focus group 1 – SCT, line 379-381)

Although an extreme example of someone who declined several services, it is the midwife who continues to provide support throughout the perinatal period. It was clear from the field notes midwives were enthusiastic in supporting women's mental health but did not feel confident in knowing what to do if women disclosed a problem.

Midwives frequently described their frustration at not being able to provide care for the women themselves and did not always want to refer them to another service:

I think that's it, I think midwives are generally really good at talking to women, building rapport and gaining trust and things like that we're great at that but it's not being able to act on it and it's really frustrating to just say oh just go see somebody else because we don't do that with anything else, yeah we deal with it ourselves as midwives but with mental health we don't really seem to have any toolkits apart from saying to go elsewhere. (Charlotte, focus group 2 – NQM, line 225-229)

There are some services for specific mental health problems. A recent addition in services to support women's mental health has been set up specifically to deal with the increasing number of women who revealed the birth experience has left them traumatised. The need for the service is clear, the Birth Afterthoughts service is run by midwives but support from the PNMHT is absent:

…psychology and the perinatal mental health team were keen to get involved in that but it wasn't evidence based…they said if you open up that little can of worms it'll turn into a terrible can of worms. (Jane, focus group 1 – SCT, line 646-648)

The services are being used, although information is not always getting to the women who could benefit from the sessions The session is designed to take place six to eight weeks after the birth, using the three steps rewind technique, which includes hearing the woman's story, relaxation and responding differently to any negative thoughts around the birth.

A suggestion was 'debriefing' women straight after the event would be more appropriate. Several midwives discussed the expectation that they should 'debrief' each woman in the postnatal period:

> *I think some evidence has shown that actually debriefing when you're forcing women to relive what they went through can actually be harmful. (Lucy, focus group 2 – NQM, line 319-320)*

Space is provided in the postnatal notes where the midwife can document the conversation. No advice has been given to midwives on the timing and discussion of this practice.

For general mild to moderate mental health problems, there were examples of resources which had been developed to assist midwives in making decisions about the best source of support:

> *That's one of the questions I ask and I got that from the flow chart that you [Jane, specialist community team] sent me, it really helped. We were all given flow charts to know whether they're pregnancy related.*

> *So we sort of look at the referral and sometimes we refer back to the generic midwife get the GP to see this lady, there's counselling services in the GP, there's third sector agencies and obviously the apps we use, we've got a list of apps that we can give to women on the internet so they can be able to sort of self-help really, mindfulness and things like that which has been given to all community midwives...(Amber, focus group 1 – SCT, line 120-124)*

Amber appeared to be aware of many services available to women yet this list of information and referral pathway did not appear to have been disseminated to other midwives. Jane who provided the annual training for midwives explained the resources she had sent out:

> *Jane: …through mandatory training I've been and I've said have you had the email about and some of them say yes and some say no so it's just about filtering it through, getting it through to people…But yeah we've tried.*

> *Int: See how many people are seeing it.*

Jane: Yeah.

Mod: A lot of people out there who haven't.

Jane: To be honest there are a lot of emails. (Jane, focus group 1 – SCM, line 580-588)

The increasing number of emails received by midwives, lack of time to read them and inboxes which fill up quickly has resulted in useful information being missed.

Most midwives were aware they could refer women to the general practitioner, yet even this has problems. Midwives suggested general practitioners are often quick to give out medication:

You know also if, certainly in my experience your GP is very quick to go for the medical route…here we go have an antidepressant to help you with this situation and it can be quite often without the extra support and all the talking therapy but because that's expensive and there's a longer waiting list, it's a pathway they can go down. (Sara, focus group 3, line 206-209)

Conversely several midwives noted general practitioners suggest women stop medication during pregnancy due to confusion over its effects on the baby. NICE guidelines suggest general practitioner referral for advice, which is where midwives refer women, yet appropriate consistent care may not be provided.

An example of good practice was given, where a general practitioner and midwife had a plan of care to support a woman. Previously she had postnatal depression which deteriorated after her last baby and it had taken two weeks to get an appointment with the general practitioner:

…this woman every pregnancy took herself off of her antidepressants but this midwife spoke with the GP and they made it so that this woman had a prescription ready as soon as she went home so that she would then start, she didn't have to then, you know if she went home in the middle of the night she would start her medication as soon as she got home or she would bring it into hospital with her and take it straight after she'd had the baby…(Unknown, focus group 2 – NQM, line 210-215)

Working together, the general practitioner and midwife ensured a suitable plan was made for the woman and enabled her to take control of the situation.

Knowledge of other services for women was limited, noting mental health received poor support compared to physical health in pregnancy:

> *I think it's just underfunded and underrepresented and it's so common yet there is very little investment in it because it's very hard to measure the productivity of supporting mental wellbeing and it's not seen as a priority in our maternity care really. (Anna, focus group 3, line 471-473)*

Pregnancy surveillance indicators measure and assess outcomes in each Health Board in Wales (Public Health Wales Observatory 2017). These include breastfeeding rates, number of caesarean sections and now include mental health. Only rates of women who have existing mental health problems and a care plan in place are included. Therefore the majority of women with mental health problems are not accounted for and provision of services difficult to justify.

Midwives were asked if they had noted any other services or support. One midwife noticed women with a leaflet regarding an 'app' for general use containing mindfulness techniques:

> *Int: Specifically for pregnancy or just for general*

> *Lily: General, yeah but it was quite specific saying that you put in your data… and you track them and it comes up with like mindfulness techniques…and it would give you little YouTube videos and so it was like that so it was a kind of like self-help…(Lily, focus group 3, line 315-318)*

Midwives were not sure where the information about the app had come from. There was disagreement among the midwives about its suitability. Apps for the general population may not work for women in the perinatal period:

> *…I didn't like the app I'm really sorry, I just, I found this postnatal woman who was struggling and tiredness…I just don't think they'd have used it…(Lottie, focus group 3, line 323-326)*

Apart from the birth trauma clinic midwives stated they were not aware of any other services to support women's mental health. Whereas there are services for weight

reduction, food choice and breastfeeding support, all of which are encouraged and facilitated by health professionals within the local health service.

Suggestions for support for women were recommended by several midwives:

> *… an outreach service…one of the things about mental health is that people aren't likely to reach out necessarily are they…Or a maternity specific mental health helpline. (Carol, focus group 2 – NQM, line280-284)*

> *I think what would be good is that we have, how we prioritise mental health as well because we have drop in clinics for yoga or we have drop in clinics for different things that women can do in pregnancy and a drop in clinic for mental health would be really good. (Lucy, focus group 2 – NQM, line 269-271)*

Lily commented on a clinic in Sweden which some of her fellow students had visited on placement during training:

> *…they had this midwife there they called her the aura midwife and sounds airy fairy but the women would come and just to talk, talk about how they were feeling, like I'm really anxious about this, I want to talk about this, similar like you have schools you know the drop in counselling clinic… (Lily, focus group 3, line 511-514)*

The service was run in the hospital and facilitated by a midwife. It was run alongside the antenatal clinic to avoid the stigma of going to a separate counselling service. Lottie suggested the service need not require health care staff to facilitate them, in a similar way to peer supporters who help women with breastfeeding, reducing the cost implications.

Providing training for midwives and services for women were seen by all midwives in the focus group as the areas most in need of improvement.

Louise sums up the issues:

> *Int: Thank you very much, is there anything else when you read the information you thought might come up that you want to share about?*

> *Louise: There's still just a lot of work.*

> *Int: …you mean to improve the services…*

In summary theme three reviewed midwives' concerns in caring for women's mental health. They felt they lacked the skills and experience to assess and support women's mental health, especially in comparison to physical health. There did not appear to be a link between attitudes, experience or quality of training and length of time as a qualified midwife.

Midwives expressed their desire to support women and gained most of their knowledge in an informal way by working with or asking other midwives for advice, rather than formal training. Even the midwife who provided training was not trained herself.

Little understanding of available provision for women with mental health problems left midwives struggling to know how to support them. Physical health of mother and baby took priority over women's mental health, with services to support breastfeeding and healthy gestational weight gain. Apart from the Birth afterthoughts clinic, midwives were not aware of other services available for mothers with mild to moderate mental health problems.

6.5 Summary

This chapter described the recruitment and data collection for the midwives' phase of the study. Questionnaires were completed by 145 midwives relating to their knowledge skills and training of perinatal mental health. Focus groups with 15 midwives expanded on the findings from the survey phase. Overall the number of years since qualifying ranged from newly qualified to 36 years in practice. Midwives worked in both clinical and managerial positions within the hospital and community.

As the primary carers for women in the perinatal period midwives are ideally placed to support both the mental and physical health of mother and baby. Findings from the questionnaires and focus groups suggest midwives were keen to support women but lacked confidence discussing mental health. They were afraid initiating a conversation would make circumstances worse and subsequently would not know how to deal with the situation should an issue arise.

The majority of midwives stated they did assess women's mental health using women's history and by observing behaviour. None of the midwives mentioned using formal tools to assess women's mental health, preferring to use questions depending on the individual situation. Inconsistencies in asking questions were acknowledged. Barriers to assessing women's mental health were time constraints at appointments with priority

given to the physical assessment of mother and baby. Additionally continuity and relationship building were thought important for women to feel confident disclosing mental health problems and enable midwives to acknowledge changes in women's demeanour.

General practitioners and PNMHT were the main referral sources for midwives, with little knowledge of other support services. However midwives voiced concerns about the long wait for treatment and shared frustration when trying to access specialised care due to changes to PNMHT referral criteria. Encouragingly women accepted by PNMHT are looked after for a year after birth. The only other service mentioned by several midwives was the birth trauma clinic. Other avenues of support were not as well known. Primarily it was midwives in the specialist community team who were aware of a number of options for extra support but this had not filtered out to the majority of midwives.

Midwives reported experience of supporting women with anxiety and depression but lacked confidence when women presented with severe mental health problems, which were often combined with complex social issues. The lack of understanding and confidence could be a reason for negative behaviour directed towards women with mental health problems. Women themselves lacked knowledge, leading to unresolved issues and stigma resulted in women hiding their condition.

Unanimously midwives stated they had not received enough training to assess and support women's mental health. NQMs expressed concern that the majority of their training had been in relation to the physical care of mothers and baby. Postgraduate training was mainly seen as the one or two hour mandatory training received each year from the specialist community team. A few midwives had felt the need for further training and had found their own source whereas the majority had relied on mandatory yearly in-service updates. Not all agreed it helped their clinical practice. Suggestions for training included the practical aspects of supporting women, such as how to ask questions. Experience was gained mostly through clinical experience. Midwives in the specialist community team expressed more confidence even after similar training, suggesting it was the experience of looking after women which provided the knowledge and skills. In addition they had built up a list of resources, frequently asked questions and supported each other.

Chapter seven – Discussion

7.1   Introduction

This study adds to the growing body of literature concerning adverse perinatal mental health, an important topic associated with potential long-term negative consequences for women, children, families and society. The aim of the study was to understand the prevalence of mental health problems in pregnancy and their relationship to maternal sociodemographic characteristics, self-efficacy and support networks. The study also aimed to provide an overview of women's experiences of mental health problems, barriers to accessing support and to understand the experiences of midwives who support them. The purpose was to contribute to the knowledge relating to needs of women with perinatal mental health problems, particularly among women who do not meet the criteria for referral to PNMHT. As all women receive midwifery care during the perinatal period, understanding midwives' experience of providing care will help inform training and service provision, which in turn might help reduce the burden of poor perinatal mental health.

In this final chapter an overview of the study is provided. Discussions pertaining to the study's findings in relation to existing literature included the prevalence of perinatal mental health problems and women and midwives' knowledge around the topic. The experiences of women and midwives in relation to perinatal mental health consider service provision and access to support. Midwives' understanding and readiness to support women's mental health, including training opportunities are presented.

The discussion highlights the study's unique contribution to perinatal mental health research. This is the first study to assess the prevalence of mental health problems in early pregnancy in a South Wales Health Board. The timing of the interviews and the use of timelines represent novel approaches to data collection in this area of study and concurrent data collection with women and midwives to describe experience of receiving and delivering care in the same NHS organisation has not previously been undertaken. Findings also point to a difference between this more representative cohort of women and previous research among low sociodemographic groups. In this study a lack of control and need for information were related to increased anxiety as opposed to social and economic issues.

Recommendations for practice and further research are provided, study limitations explored, and plans for dissemination are described.

7.2 Overview of the study

A questionnaire was completed by 302 consenting women in early pregnancy providing data relating to their mental health, socioeconomic characteristics and support networks. Over half (53.6%, n=152) lived in the least deprived areas served by the Health Board and three quarters were employed (78.8%, n=238). A high proportion of women completing the questionnaires had qualifications above degree level (53%, n=160), slightly higher than the 50.2% of 17-30 years olds attending university in 2017/18 (Kershaw 2019). Of these women 22.8% (n=69) had postgraduate qualifications; perhaps an indication of the government encouraging young people to stay in full time education. The majority identified as British (87%, n=263) possibly due to the inclusion criteria stating women required sufficient spoken and written English to complete the study questionnaire and be interviewed in English. The majority of women reported their ethnicity as White (84%, n=254). This was in contrast to previous studies which have primarily focused on experiences of poor perinatal mental health amongst women in minority groups such as black Caribbean women (Edge 2010) or those living in areas of social deprivation (Jesse et al. 2008; Kopelman et al. 2008; Raymond 2009; Raymond et al. 2014).

A subset of 20 women with EPDS ≥7 or GAD-7 ≥5, was interviewed after 34 weeks gestation. Recollection of a smoking habit during pregnancy (Pickett et al. 2009) and the events of childbirth have a reported degree of accuracy, yet negative events in pregnancy have been reported as being perceived as more negative over time (Waldenström 2003). Literature on the accuracy of memory recall in relation to mental health and emotions, not related to significant events, was not found. Interviews were conducted during pregnancy to explore women's recent experiences, without being influenced by childbirth. This was in contrast to previous studies where data were mostly collected during the postnatal period, sometimes several years after the birth (Edge 2006; Bennett et al. 2007; Raymond 2009; Byatt et al. 2013c; Henderson et al. 2018), giving a clearer indication of their experiences and needs of living with mental health problems during pregnancy.

The majority of previous literature focused on exploring women's experiences of postnatal depression or severe mental health problems among women already receiving support (Bennett et al. 2007; Kopelman et al. 2008; Habel et al. 2015; Higgins et al. 2016b). In contrast this study placed an emphasis on interviewing women with mild to moderate anxiety and depression symptoms in pregnancy who were not receiving support from the PNMHT. Women who took part in the interviews had different social experiences and feelings about pregnancy. Some were pregnant for the first time, several shocked by unplanned pregnancies and others excited but also

anxious after long awaited pregnancies. Four women recruited for interview, based on their EPDS and GAD7 early in pregnancy, no longer had symptoms of anxiety and or depression when measured immediately prior to the interview. It cannot be known how many women who screened negative in early pregnancy later developed anxiety or depression. Other mental health problems were disclosed by women at interview including, OCD, panic attacks and anorexia. This provided an ideal opportunity to explore the experiences of women with a range of mental health problems.

Midwives are the prime carers for women during the perinatal period. For this study questionnaires were completed by 145 midwives. To further understand their experiences of supporting women's mental health, focus groups were conducted with 15 midwives to explore areas raised in the midwives' questionnaires and women's interviews. Midwives' experience ranged from newly qualified to 36 years, offering an opportunity to consider if experience alters perception and confidence in supporting women's mental health. Previous literature focused on assessing midwives' experience has been conducted with student midwives (McCann and Clark 2010; Jarrett 2014; Phillips 2015; Davies et al. 2016; Higgins et al. 2016a; McGookin et al. 2017) or focused on reviewing training packages for maternity health care professionals (Ross-Davie et al. 2007; Gawley et al. 2011; King et al. 2012).

7.3 Prevalence of mental health problems

Prevalence of mental health problems was obtained from the women's questionnaires (n=302) and anonymised data extracted from the maternity information system. This related to all women booked for care at the local Health Board between 1st June 2017 and 31st May 2018 (n=6312), which included study participants. Previously prevalence rates of mental health disorders (10-30%) have been noted in the perinatal period (Priest et al. 2008; Ayers and Shakespeare 2015; Marcano-Belisario et al. 2016). Data from the questionnaires indicated 32.5% (n=98) of women had a history of one or more mood disorders, compared to 23.6% (n=1490) in the booking population and 30% (n=92) in the Grown in Wales study conducted in the same hospital as this study in 2016 (Janssen et al. 2018). Reasons for higher reported mental health history among study participants might be increased recognition of mental health and women with mental health problems being keen to share their experiences. In addition under reporting mental health history during the maternity booking appointment may have occurred as this is not the specific focus. As in other studies (Janssen et al. 2018) anxiety and depression symptoms assessed on the EPDS and GAD-7 from the booking questionnaires were significantly correlated (r_s =0.75, p<0.001).

A larger proportion of women (22%, n=67) in this study completing the questionnaire reported a history of anxiety compared to the booking population (12.8%, n=810). The questionnaire asked if women had previous mood disorders whereas questions at booking clinic are based on tick boxes in the All Wales Maternity Record, for example, anxiety or depression. Possible explanations were women's reticence to share information which would be documented in their NHS records whereas information disclosed on the questionnaire would not influence their care. It is unlikely due to the high proportion of participation that selection bias was an issue. The rate was also higher than the Grown in Wales cohort which indicated 8% (n=7) of women reported a history of anxiety and a further 11% (n=10) anxiety and depression (Janssen et al. 2018).

In this study some women at interview explained how early pregnancy was an emotional time due to an unexpected pregnancy, and excitement for others combined with the worry of miscarriage. Although only a small sample (n=20) this is consistent with previous research and an indication of physical symptoms of early pregnancy such as nausea and the worry of miscarriage may increase the chance of anxiety (Matthey et al. 2013b). This could account for the higher levels of reported anxiety in this study compared to the Grown in Wales study, who recruited women in late pregnancy. Rates for depression were similar for both groups (Janssen et al. 2018).

In contrast to self-reports by women at booking, the EPDS and GAD-7 screening tools indicated lower rates of anxiety (8.3%, n=25) and depression (8.6%, n=26). Possible reasons include women with a previous diagnosis being well at the time of questionnaire completion, or because women with mild symptoms were not identified due to the cut off scores which indicate moderate anxiety and depression. As with many conditions anxiety and depression exist along a continuum and it may be difficult to determine an exact level when a condition has a detrimental effect and requires support. This necessitates continuous monitoring of mental health, similar to assessments of physical health.

7.4   Challenges to women's mental health

During interviews with women, as well as exploring their knowledge of mental health, opportunity was provided to share experiences of living with mental health problems over the trajectory of their life, to assess changes. Timelines have not been used for this specific purpose before in a pregnant population. They have previously been used to map substance misuse (Berends 2011) or used during pregnancy as an aid to discuss major life events in relation to infant feeding (Grant et al. 2019).The timeline provided a visual stimulus to pinpoint how women's moods changed at different stages

from childhood, through pregnancy and looking to the future with their newborn baby. In the interviews it was evident several women had obviously reviewed the timeline and related their life story from childhood to the present day. Another woman reported how the timeline had made her think specifically about her mental health over time. The timeline gave a focus to the interview for both woman and researcher and provided a unique opportunity to uncover aspects which may trigger mental health problems.

Consistent with this study, it has been reported women regard the cause of their poor mental health as fluctuations in hormones (Boots Family Trust Alliance 2013; Staneva et al. 2017), living up to unrealistic expectations, work pressures (Boots Family Trust Alliance 2013) and changes in physical health (McKillop et al. 2010; Prescott and Mackie 2017). In the interviews women described physical symptoms as aggravating their mental health, hence health care professionals should be vigilant and assess women's mental health when presenting with physical concerns. Women also reported busy lives especially for women who had children, leaving little time to rest which affected their mental health. Pregnancy involves a shift in responsibility and change in lifestyle resulting in anxiety for some women. Anxiety has been described as a normal emotion, often felt when anticipating an event (Dotson et al. 2017) and anxiety specific to pregnancy as a unique and distinct condition (Henderson and Redshaw 2013) often linked to fear of labour and childbirth. Understandably some issues faced by women were the same as the general pregnant population. However in the interviews, for women with anxiety, such as Jackie, the issues became more pronounced. When provided information regarding her baby's movement, rather than the information reassuring her she became distressed by the link with stillbirths.

Gwenda in the interview recalled how she had been upset by pictures on social media showing active pregnant women. Relating how it made her feel frustrated due to tiredness and the physical effects of her growing baby, resulting in her becoming less active. Feelings of frustration and comparison with others were discussed, conversely none of the women reported body image in pregnancy issues identified in the literature (Staneva et al. 2017). Exercise was described in the interviews as a way woman improved their mental health and therefore being unable to continue activities such as running led to frustrations and decreased mood, as reported by Staneva et al. (2017). An unexpected finding was the feeling of guilt mentioned by several women, four related to partners and household tasks and their inability to physically continue in their usual role. Several issues causing a change in mood could be related to a lack of control over pregnancy, which has been suggested as the biggest concern with pregnancy related anxiety (Bayrampour et al. 2016) and noted in this study. Lack of

control over pregnancy led to women searching for information to ensure they understood every aspect of pregnancy.

In order to have control during childbirth, a request was made by Karen for an elective caesarean section. Previous negative experience of giving birth has a strong association (aOR 7.6, 95% CI 3.8-15.2) with fear of childbirth and a preference for an elective caesarean section (Storksen et al. 2015). This study adds to these findings, in Karen's case, it was not fear due to a previous birth, as she was nulliparous, it was the experience of negative outcomes of birth due to her clinical background which led to her fears. Similarly Becky, also nulliparous, expressed a severe fear of childbirth from being exposed to her sister's experience of birth. In previous studies an unaddressed fear of birth can lead to negative birth experiences (Storksen et al. 2015) which in turn are associated with postnatal depression (Bell and Andersson 2016). Indicating discussions around birth should be universal to detect underlying concerns and provide support to consider options for birth.

It is not always the safety of the baby that is the trigger for requesting an elective caesarean section. The increase in safety of operations and knowledge of poor outcomes of vaginal births, fear of childbirth and being in control are all reasons for the global increase in requests (O'Donovan and O'Donovan 2018). However, these need to be balanced against possible complications and implications for future pregnancies and increased risk of admission to neonatal intensive care unit (National Institiute for Health and Care Excellence 2019). Women receiving an elective caesarean section are at increased risk of hysterectomy (aOR 3.38, 95% CI 1.73-6.59), admission to intensive care unit (aOR 2.27, 95% CI 1.89-2.73) uterine rupture in subsequent pregnancies, blood transfusions (aOR 2.11, 95% CI 1.79-2.48) compared to spontaneous vaginal birth (D'Souza 2013). In contrast the Lancet series 'Optimising caesarean section use', reviewed the risks of caesarean section and concluded there was a reduced risk of urinary incontinence in primiparous women giving birth by caesarean section (OR 0.56, 95% CI 0.45-0.66) and pelvic organ prolapse (OR 0.29, CI 0.17-0.51), compared to vaginal birth (Sandall et al. 2018).

All women who receive a caesarean section are given antibiotics prior to birth and new but disputed studies have assessed the effect of microbial colonisation, suggesting a reduction in beneficial microbiome (Sandall et al. 2018). A study comparing neonatal outcomes of planned caesarean section showed neonatal admissions remained lower and meconium passage higher in the planned vaginal group (Geller et al. 2009). There are also cost implications for health services, including extra staff and bed occupancy. Risks and benefits of an operative birth are explained and consent gained; in contrast

the risks of a vaginal birth are not discussed in the same way. This was highlighted in Montgomery V Lanarkshire Health Board. Information on the risks of proceeding with a vaginal birth with a large baby were not discussed and subsequently complications during the birth led to the baby born with severe disabilities (Term 2015).

NICE (2019b) recommend women requesting a caesarean section without medical indication should be provided with a discussion to ensure they are aware of the risks and benefits. If the request is related to anxiety, women should be offered expert perinatal mental health support to address anxiety prior to the birth. If after discussion, a vaginal birth is still not acceptable then they can be offered an elective caesarean section. In practice women are often not offered specialist mental health support, even if they have some measure of anxiety. Rejecting the request for an elective caesarean section without support for women with severe pregnancy related anxiety has been shown to result in a negative view of subsequent childbirth (Waldenström et al. 2006). Although clinically indicated caesarean sections at a rate of 10%, reduce maternal and infant mortality and morbidity, higher levels do not equate to reductions in maternal and newborn mortality rates (World Health Organisation 2018). Obstetricians may decline an elective caesarean section due to pressure to reduce the rates.

Unsurprisingly there were several instances where women's anxieties increased after health professionals informed women of pregnancy complications. Sally was given a diagnosis of GBS colonisation in pregnancy and Tara informed her baby was lying in a breech position. Both considered the verbal and written information provided insufficient for them to confidently understand the implications and left them wondering about their choices. Unable to ask questions results in feeling uninvolved, uninformed or not listened to (Henderson et al. 2018) increasing anxiety. Natalie in the interview expressed concern after an USS to check the growth of her baby. The comment from the doctor stating everything was fine, for her was not enough. She wanted to understand exactly what the measurements were and be given a chance to ask questions. In this instance it was Natalie's work situation in a data driven industry that led her wanting to know more, not an underlying mental health problem.

This study adds to the literature describing women's experiences of unplanned USS for fetal growth or presentation. Previous literature focused on women's experiences and perception of USS for the purpose of routine screening (Molander et al. 2010). All women are offered booking and anomaly USS and these have been part of antenatal care for decades. There was a sense of women only being convinced they were pregnant after the first USS. Women, though expressing some anxiety prior to the routine USS, left feeling reassured. Even though reassurance was provided Tara and

Natalie left feeling even more anxious, with unanswered questions. Furthermore, undoubtedly USS are important to assess fetal wellbeing, but there appeared to be an expectation by women that if they report a problem in pregnancy an USS was the only way to assess their baby's wellbeing.

Communication is obviously important for all women but even more so for those with mental health problems as they have been shown to perceive staff interactions as poor and are more anxious about birth (Henderson et al. 2018). Providing information and an opportunity to ask questions, whether women have a mental health issue or not, might reduce stress and concerns. Gauging how much information is required is often difficult and issues that may seem trivial to some people are a major cause of concern for others. In this study Jackie who had a history of anxiety had many questions in pregnancy, causing increased anxiety and became almost obsessed with the contents of the bag to take into hospital for the birth of her baby. Extra time for questions especially for women in their first pregnancy, or with mental health problems, might help reduce some of their concerns and lower anxiety.

Another trigger for women's mental health was attitudes of others. Karen was upset by the way healthcare professionals and general public assumed because she was pregnant, she must be happy. This was not the case and Karen remained extremely anxious throughout her pregnancy due to the fear of something going wrong, indicating the need for health care professionals and general public to be sensitive and not make assumptions. There is evidence to suggest women were often reluctant to admit feeling stressed at a time society perceives as happy (O'Mahen and Flynn 2008).

7.5   Knowledge of perinatal mental health

The study interviews with women found some participants either not understanding they were symptomatic, or not wanting to allude to problems with their mental health. A previous large study reported 28% of women hid their symptoms and 46% were not honest about their mental health problems when talking to health care professionals (Boots Family Trust Alliance 2013). This suggests information gathered at booking could contain lower rates of mental health problems than there actually were. In addition disclosing mental health problems in a first visit with unfamiliar staff could result in artificially low rates (Viveiros and Darling 2018). This emphasises the need for questions at each visit and continuity to assist mental health assessments.

Stigma has long been known to reduce openness about mental health, an issue highlighted in the interviews. Emma and Laura explained how they were careful about who they spoke to regarding their mental health with Emma recalling how she had

heard her employer talk negatively about staff with mental health problems. Olivia felt even close family were not always aware of the impact of poor mental health, as reported previously (Jesse et al. 2008; Staneva et al. 2017). In contrast women were keen to join this study and stated it an important topic. It is possible the use of words *moods* and *emotions* in the participant-facing documents led to women feeling comfortable with the topic, as suggested in the literature (Jesse et al. 2008). Most women in the interviews were aware this study related to mental health. Perhaps discussing the subject with a health professional was easier knowing the conversations were confidential as opposed to when speaking with family, friends and colleagues.

In an effort to break down barriers and stigma there has been a recent rise in media attention discussing mental health problems. This has focused on positive stories regarding general mental health (Regan 2018). A campaign to raise awareness around perinatal mental health was led by the Maternal Mental Health Alliance, intending to increase knowledge and understanding and improve services (Granville et al. 2016). As well as the stigma preventing discussions a lack of knowledge around mental health was evident. In keeping with the literature (Boots Family Trust Alliance 2013) the majority of women had heard of postnatal depression and some knew about the 'baby blues' but their understanding around mental health during pregnancy was limited; several women acknowledged they had not considered mental health problems could occur at this time. Only one woman interviewed mentioned reading about antenatal anxiety, she had also seen a storyline about puerperal psychosis aimed at increasing people's awareness of severe mental health problems. Lower rates of help seeking have been reported where there is minimal understanding around mental health problems (Sambrook Smith et al. 2019).

Becky in the interview explained she had attended a course in 'Mental Health First Aid' in work and how this had improved her knowledge and given her the tools to recognise and ask questions. Laura described how looking back she might have had mild depression after the birth of her previous child; had she known the signs and symptoms, she might have sought advice from her health visitor. This is in keeping with the literature, in a large (n=1500) national survey one in 10 women did not recognise their symptoms as an issue and suggested the first step to getting better was knowing there is a problem (Boots Family Trust Alliance 2013). NICE (2019) recommend informing women of postnatal blues and postnatal depression but not about antenatal mental health problems, surprising, knowing the negative effect of poor mental health in the antenatal period. It would be unwise to send women away with a list of negative consequences to poor mental health and advise them to stop worrying. Providing information on mental wellbeing in early pregnancy and increasing women's

understanding of particular symptoms such as prolonged low mood would be beneficial and in line with recent recommendations (Welsh Government 2019a). Signposting to free online resources such as 'Enjoy Your Bump' from MIND Cymru or Living life to the full website (2019) provides information specifically for mental health and wellbeing during pregnancy.

In the focus groups midwives described how women were afraid of discussing their mental health, fearing their baby might be taken away; they altered their medication themselves during pregnancy to avoid having to go back to their general practitioner. In a nationwide survey of 1,500 women suffering with a range of mental health problems, 25% were so worried about their baby being removed they hid the fact they were struggling (Boots Family Trust Alliance 2013). Similarly, the media ran a story about journalist Anna Ceesay, a public figure who had kept her feelings of depression quiet in pregnancy because she was afraid her child might be taken away from her (BBC 2019). The inference social services will remove the baby could be due to the women's misunderstanding of perinatal mental health problems. Alternatively fear could be due to paranoia from a mental health problem. Reluctance to disclose problems with mental health reduces the chance of support, with potential harm to mother and baby.

Misunderstanding mental health does not just relate to pregnant women and the general public. A recent survey of women (n=1738) or partners (n=241) of women with mental health problems in England rated support from health care professionals as poor (Healthwatch England 2019). Midwives in this study cited a lack of skills and knowledge leading to a fear of looking after women with mental health problems. Evidence provided by the Royal Colleges of, Midwives and General Practitioners, Institute of Health Visiting, third sector and Health Boards in Wales, all recognised a lack of knowledge and confidence amongst health care professionals, suggesting they are not able to detect and support women with early signs of poor mental health (National Assembly for Wales 2017).

Experience through clinical practice did not appear to improve awareness; two NQM commented older midwives were less understanding and knowledgeable, suggesting training and practice in the past has not equipped midwives to support women's mental health. Carol, a NQM, suggested even the most 'amazing' midwife she worked with was not alert to the signs of postnatal depression implying training, not experience, was the issue. Not all midwives concurred with this belief. In this study only seven midwives (4.8%) thought women's mental health needs went unnoticed under midwifery care, the majority suggesting they were either recognised (49.0%, n=71) or sometimes recognised (44.8%, n=65). Most midwives (82.8%, n=120) indicated they would make

some sort of mental health assessment at least 50% of the time, and 48.3% (n=70) reported they would assess every time. Experience gained by midwives in the specialist community team improved their confidence. Having a specialist team care for women with complex backgrounds, including mental health problems is beneficial for women (Witcombe-Hayes et al. 2018). Yet this leaves the majority of midwives without experience of caring for women with severe mental health or complex needs, resulting in feeling uncomfortable and not knowing how to handle such situations.

Midwives were overwhelmingly keen to support women with mental health problems acknowledging it part of their role but also indicated their peers were 'sometimes out of their depth'. This might explain the negative attitudes and derogatory language from some midwives overheard by women in hospital. The poor understanding and insecurities were mainly in relation to caring for women with severe mental health problems and complex needs. This is consistent with previous literature, where women and student midwives reported negative attitudes by qualified midwives towards women with severe mental health problems (Jomeen et al. 2009; Lees et al. 2009; Hauck et al. 2015). A study using the same midwives' questionnaire identified more than 60% of midwives' colleagues had a negative response towards, or avoided women with, mental health problems (McCauley et al. 2011). Reassuringly, questionnaires completed by midwives in this study described their colleagues as 'mostly' tolerant (75.2%, n=109) and helpful (71.5%, n=103), rarely ignoring (75.2%, n=109) avoiding (62.0%, n=91) or spending less time with (75.2%, n=109) women with mental health problems. When asked if midwives understand women with mental health problems only 55.9% (n=81) of midwives stated mostly and a further 41.4% (n=60) stated sometimes.

Use of medication for perinatal mental health disorders was another issue discussed by midwives. Louise a specialist midwife described how guidelines in the hospital led to some women wanting to stop their medication. Women are informed of the need to stay in hospital for observations on their baby to check for symptoms of withdrawal such as breathing difficulties and poor feeding. This made women feel guilty that they must be causing their baby harm. Discussing the risks and benefits of taking medication for mental health problems with women is suggested by NICE (2014). Midwives are trained to be knowledgeable about common drugs used in pregnancy but as indicated in the focus groups they had insufficient knowledge about medication for mental health disorders and therefore referred women to their general practitioners for advice. However it appeared some general practitioners also lacked knowledge and had discontinued women's medication in pregnancy leaving women confused, with possible deterioration in their condition. Previous studies have reported similar issues

with health care practitioners (Byatt et al. 2012b) and some general practitioners (Bennett et al. 2009) lacking knowledge about medication for mental health problems in pregnancy (Knight et al. 2016).

Women interviewed were very motivated to obtain information throughout their pregnancy. One study found women with higher education were three times more likely to look for information (Sayakhot and Carolan-Olah 2016), which could explaine the numerous accounts of information seeking in this study where the majority were educated to degree or above level (75%, n=15). Use of paper information leaflets regarding immunisations and screening during pregnancy were being phased out during the recruitment period. This could explain the number of women who stated they did not receive any printed information. Considering the women's intensive review of information, they did not appear to read the leaflets provided by health care professionals in early pregnancy.

Health care professionals can signpost women to official sources of information such as one of the baby apps containing hospital-specific material, additionally the NHS recommend several apps (National Health Service 2018). Research has indicated non-English speaking and low-income women use apps less, maybe due to cultural and linguistic issues (Hughson et al. 2018). There is an obvious need to provide online information in an appropriate form for all women. This study in line with other literature mentioned the most common source of information was the internet (Larsson 2009). Despite the concern women had about the health of their baby it seemed surprising how many women just 'Googled' and followed the first link regardless of the potential accuracy of the information.

This study asked pregnant women specifically about information they had sought concerning their mental health, in contrast to previous studies which have explored general information seeking in pregnancy (Song et al. 2013; Sayakhot and Carolan-Olah 2016). Most women reported an absence of information on mental health from health care professionals, online, or in print. This may be because they did not look for information regarding mental health or more likely because they did not recognise the importance of the topic. This resulted in women remaining unaware of signs to look out for, and if required where to access support. Signposting from health care professionals is required to ensure women access appropriate advice and support. There is a small amount of information about perinatal mental health in the *Bump, Baby and Beyond* booklet (Public Health Wales 2019) which is provided to all women in Wales in early pregnancy. This information is being reviewed at present with women and health care professionals. Assurance has been given that there will be a lot more

mental health information in the new version including 'signposting to MIND and NHS Direct' (Personal correspondence, Public Health Wales 2019), which cover universal mental health but not perinatal specific information.

7.6   Asking the questions

Asking questions regarding mental health is an important part of perinatal care, acknowledging women are sometimes unaware of, or reluctant to admit to, a problem. In line with NICE (2014) opportunities to discuss mental health occur early in pregnancy when women complete their handheld All Wales Maternity Records and discuss these with a midwife. In line with the literature (Henderson and Redshaw 2013; Janssen et al. 2018) a history of mental health problems was strongly associated with depression or anxiety (OR 3.95, 95% CI 1.37-11.33, p=0.011) in women who completed the questionnaire in early pregnancy. This shows the importance of recording and being aware of previous mental health diagnosis. Reassuringly 96% (n=139) of midwives stated they would take note of the woman's mental health history when making current assessment of their mental health status, in line with other studies (Ross-Davie et al. 2006).

A history of mental health problems may not be specific enough to detect all women with current symptoms of anxiety or depression. In this study one woman who scored high on the EPDS (18), and high on the question regarding intention to self-harm and another four women with high EPDS scores (18, 15, 14, and 13) reported no history of mental health problems. To assist health care professionals, alongside mental health history, NICE (2014) recommends at the first antenatal appointment asking the Whooley:

> 1) During the past month, have you often been bothered by feeling down, depressed or hopeless?

> 2) During the past month, have you often been bothered by having little interest or pleasure in doing things?

and GAD-2 questions:

> 1) Over the last two weeks, have you been feeling nervous, anxious or on edge?

> 2) Over the last two weeks, have you not been able to stop or control worrying?

Despite this, only the Whooley questions are printed in the All Wales Maternity Records and should be asked regardless of the women's mental health history. Using only the

NICE guidelines may not detect women with worries and anxiety. Discussion should include previous birth trauma and miscarriage and could alert health care professionals to pregnancy related anxiety (Furber et al. 2009). In addition a large national UK survey of women's experiences suggested there should not be an overreliance on Whooley questions at the booking visit, but health care professionals should also use their experience and expertise (Boots Family Trust Alliance 2013).

It is important to repeat the questions and not rely on a single discussion to avoid detecting short term stressful periods which may resolve but also pick up new or ongoing concerns. In line with NICE recommendations there are explicit questions provided in the All Wales Maternity Records for health care professionals to ask at each routine antenatal and postnatal appointment. Space to assess emotions is also provided in the postnatal pathway for midwives to document at each postnatal check. The majority of midwives who completed the questionnaires (82.8%, n=120) and focus groups indicated they would make some sort of assessment at each appointment, only 1.4% (n=2) stated they would never ask about mental health. Two thirds (66.3%, n=96) stated they would assess mental health at over 80% of appointments. In contrast, Jane the specialist perinatal mental health midwife felt midwives were afraid to ask about women's mental health and suggested they needed more training. This could explain how, consistent with the literature, women in this study stated they were not routinely asked about their mental health (Byatt et al. 2013c). A recent study in Wales found 73% of women recalled being asked about their mental health by healthcare professionals during the perinatal period, which is concerning as the women in the study had experienced mental health problems (Witcombe-Hayes et al. 2018).

This study adds to the literature concerning midwives experiences of discussing mental health with women throughout the perinatal period. The majority of previous literature concerns midwives' experiences of asking women about their mental health history, asking the Whooley questions at the initial booking appointment or midwives' knowledge of mental health. Midwives explained how they would take opportunities to discuss women's mental health even if there were no explicit questions in the NHS records. One midwife described how she took an opportunity during a labour assessment to check the notes for any history of mental health problems and ask the woman if she was anxious about anything. The specialist community team described how they tailored the assessment to each woman, taking account of individual circumstances especially with those who did not speak English or where mental health and depression were not words understood in their culture. One midwife explained how she asked about their sleep pattern or if they were nervous about anything.

An explanation for limited discussions around mental health between the women and midwives in this study lay in the way questions were asked, especially when asked verbatim. Carol one of the NQMs explained how as a student she had observed midwives and felt the specific question was asked like a 'tick box' exercise which reduced the flow of conversations; this has been reported in other studies (Jarrett 2014). This study found one woman at interview who was particularly upset by a question she was asked at several appointments, resulting in keeping quiet about how anxious she felt. No specific advice was provided on how midwives should ask women these questions or respond to positive answers, which may have resulted in reading them verbatim rather than fitting them into conversation.

Midwives suggested another reason for the lack of discussions, stating they were unaware of where to refer women if problems were disclosed; this may reduce the frequency and format of questions, as previously reported (Ross-Davie et al. 2006). Rephrasing the question led to ambiguity over what was being asked. Several women confused a question about domestic violence with that of their mental health such as 'Everything okay at home?' Generally women welcomed the chance to discuss their mental health. In one study 100% of women felt it acceptable to be screened for mental health problems and 50% stated it raised their awareness of mental health problems (Leigh and Milgrom 2007). Midwives need to be aware of these issues and modify questions for individual women to enable them to feel comfortable discussing their mental health.

None of the midwives in the focus groups described asking formal questions or used screening tools to assess women's mental health, apart from the Whooley questions at the first visit. Assessments of women's mental health were more informal, midwives selected maternal mood (99.3%, n=144) and anxiety (94.5%, n=137) as the most common symptoms, along with support (91.0%, n=132). Other than using the questions in the All Wales Maternity Records, midwives in the current study chose assessing behaviour (95.9%, n=139) and observations (93.1%, n=135) as the main ways of evaluating mental health. Using their 'instinct/intuition' (72.4%, n=105), were also high on the list. It is more likely intuition plays a part with feelings based on previous or learnt experience (Baker 2011) rather than purely instinct. Olafsdottir (2009) described three types of intuition; one based on experience in practice, one on spiritual awareness and the other on the relationship with women, noting these can overlap. In a similar study midwives reported mood, anxiety level, sleep pattern, support and behaviour as ways of assessing mental health (McCauley et al. 2011). In the focus groups midwives described how they assessed women's behaviour, body language and appearance, corresponding with the literature (Jarrett 2014).

Consistent with the literature, women regarded health professionals as generally approachable (Jesse et al. 2008; Kingston et al. 2015d) and the second most likely person, after their partner, to be informed about mental health concerns (Boots Family Trust Alliance 2013). Even though midwives expressed a desire to support women's mental health, both midwives and women noted barriers preventing conversations about mental health during appointments. One barrier was midwives' fear of not 'doing it right'. This was also mentioned in the focus group by the specialist community team, which is concerning as they are the midwives with more training and experience in caring for women with complex needs including mental health problems. Some midwives were worried about 'opening a can of worms' as reported previously (Phillips 2015) and concerned they would not know what to do next (Ross-Davie et al. 2006; Higgins et al. 2016a). They feared they might make the situation worse and suggested they required training to know what to say or where to signpost women for help.

An important finding in this study was women did not feel their health was important during pregnancy; priority being given to their babies' wellbeing. This overlooks the fact their mental health can affect their baby. It was only when women had given birth to their babies they began to think about their own health. In keeping with previous research, women noticed the physical assessment of themselves and their baby received priority over their mental health at antenatal appointments (Edge 2011; Darwin et al. 2016; Higgins et al. 2016b). In addition it was felt questions such as 'How are you feeling?' related to their physical wellbeing (Boots Family Trust Alliance 2013; Darwin et al. 2016). Time constraints also resulted in healthcare professionals focusing on the mother's and baby's physical wellbeing (Darwin et al. 2015; Megnin-Viggars et al. 2015). Many women welcome greater attention for their emotional health in pregnancy (Megnin-Viggars et al. 2015; Higgins et al. 2016b; Evans et al. 2017). Unfortunately, when women have discussed their mental health, it has been noted how health care staff lack knowledge about treatment and support options (Williams et al. 2016). There have been calls for antenatal and postnatal appointment times to be increased by 10 minutes to ensure adequate time to provide personalised care and cover all the points required (NHS England 2016). This could help facilitate more time for assessment of mental health care, equalling that of physical care (Granville et al. 2016).

Women and midwives reported the duration of appointments limited discussions around mental health, in other research this was reported by 54.7% of midwives surveyed (Jones et al. 2012). The list of tasks carried out and documented in the antenatal records reflect NICE (2019) with a clear schedule of antenatal check-ups, even so appointments have remained the same duration for years, one hour for the first

and 10 minutes for subsequent appointments in the local Health Board. Consequently, adding extra assessments to the list over the years has led to tight appointment schedules, reducing the opportunity to discuss mental health (Boots Family Trust Alliance 2013; Higgins et al. 2018) which is the latest addition to the list of questions to ask. Midwives also require pathways to follow when women disclose mental health problems or evidence based interventions which they can provide.

More time in appointments would undoubtedly help discussions around mental health, as would improving continuity of carer. Helena carried on communicating with her previous midwife, after she moved location, because she felt they had built up a relationship and trusted her advice. Conversely, Olivia had become so desperate for help she would have talked to whoever was in clinic that day. Continuity in maternity care is important and endorsed by NICE, NMC and UK government policy (Department of Health 2016; NHS England 2016; Scottish Government 2017b; National Institute for Health and Care Excellence 2019a; Nursing and Midwifery Council 2019; Welsh Government 2019b). As noted in the literature, continuity of carer (Hunt 2004; Higgins et al. 2018) was mentioned by a few women who felt having the same midwife at each appointment would have led them to discuss their mental health as they had built a trusting relationship. On the other hand if there were clashes of personality between midwives and women such as with Dawn, a change of carer was more appropriate. Continuity in this specific case would not have helped build a rapport and was a clear case where carer should be changed.

Continuity of midwife could reduce the need for repeated introductions and an understanding of ongoing concerns, enabling more time to discuss new issues. Surprisingly only one midwife (0.7%) stated a rapport with women would assist mental health assessment on the questionnaire. This could have been because it was not provided as an option but reported as free text under the category 'other'. As not all women will acknowledge feeling anxious or depressed, being aware of signs of poor mental health is important as a way of opening a conversation. Midwives in the focus groups explained how they may be able to pick up a change in a woman's demeanour if they knew her well and prompt further discussion (Jomeen et al. 2013). Even though several midwives supported the idea of continuity in the focus groups, reservations were reported by midwives (n=798) in England through an anonymous online survey after the introduction of the 'Better Birth' report recommending continuity schemes (Taylor et al. 2018). Many had work-life balance concerns, only 35% were willing to work in continuity based models, 41% stated they were unable to work different patterns from their current role and 37% stated they could not work on calls or nights, lived a long way from the hospital or had childcare commitments. In addition 59%

reported they needed to update their clinical skills to work across settings. Plans to introduce continuity models for antenatal and postnatal care in Wales are also recommended and being cautiously introduced (National Assembly for Wales 2017; Welsh Government 2017; Welsh Government 2019b).

7.7   Support services for mental health

Mental health problems vary in severity, requiring individual assessment and support from different services and health care professionals. Midwives in the focus groups described how an increase in referrals locally resulted in a higher threshold for receiving care from the PNMHT. The criteria for referral were women with or a family history of severe mental health problems or new onset of severe pregnancy related mental health problem, such as suicidal ideation. Midwives in this study reported referral to the PNMHT (93.1%, n=135) as one of their main options for women with mental health problems. Maternal Mental Health Alliance (2015) produced a report with the aim of increasing the number of areas with PNMHTs in 'Turn The Map Green' campaign. In response, investment from all four nations has now been pledged for perinatal mental health services. This has seen an increase in the number of areas with PNMHTs across the UK including Wales, where all Health Boards now have a PNMHT, differing in staff and referral criteria (Witcombe-Hayes et al. 2018).

Services were described as a 'postcode lottery' by some women; confusing women and health care professionals (Ross-Davie et al. 2006; Rothera and Oates 2011; Witcombe-Hayes et al. 2018); in this study by one woman who was initially offered referral to the PNMHT, then later informed by the midwife that on reflection her mental health problem was not severe enough for referral. In this instance Olivia already had self-help materials from previous CBT sessions which she decided to use to help her through the problems she was experiencing. Clear standardised pathways for referral have been suggested by NICE (2014) and National Assembly for Wales (2017). Due to the different services and referral thresholds in each Health Board these need to be specific so health professionals can provide appropriate information to the women they support.

Another issue raised by midwives was the process of referral. Anna described how the local opt-in service reduced chances of the most vulnerable women receiving care. It is known those with mental health problems are least likely to engage and may not have the confidence to call back to accept an assessment or leave their home for therapy (Raymond et al. 2014). In addition Amber explained how non-English speakers were unable to understand the appointment letter sent out. Midwives in the specialist community team suggested they had more time which enabled them to assist women

in this process. Advice from the All Wales Perinatal Mental Health Group and Community of Practice (2018) stated health care professionals should have specific training to enable a better understanding of the barriers to engagement with women from a range of backgrounds. This could benefit service delivery and an understanding of individual needs. For successful implementation resources are required to allow training and changes in an already overstretched service.

Jane the specialist perinatal mental health midwife explained how previously women with social service involvement were not able to access the PNMHT at a time when they were vulnerable. Changes to the service by midwives working alongside the PNMHT have seen support offered to women for one month after birth, even if their child has been removed from their care. In addition until recently, the local PNMHT did not accept women until after 20 weeks gestation, over half way through pregnancy. Recently PNMHT have accepted women from 12 weeks gestation. Offering support as early in pregnancy as possible may be important to reduce the negative effects on the mother and baby, even better if this is provided in the preconception period. A preconception service is available for women with severe mental health problems, allowing conversations about medication and its implications for pregnancy. Midwives suggested further changes to the local PNMHT such as referrals for women whose babies have died during pregnancy or birth, an area where women are understandably traumatised.

Women who do not meet the threshold for PNMHT care can be supported by midwives in the specialist community team. Often women have complex issues such as safeguarding concerns or seeking asylum, not just mental health problems. Midwives in this team have a smaller case load and described how they were able to build a relationship with women, understand their needs and have time to provide extra support. It is undoubtedly helpful to have a team with experience and time to support women with multiple needs, they can also act as a source of information for other staff. Cascade training of interventions to support women with mild to moderate mental health problems by two midwives in the specialist community team was planned, but the course was not completed due to financial cost and duration. Midwives also stated they did not feel confident enough to support women or cascade the training to other midwives.

In the midwives' questionnaire and focus groups, general practitioners were the second most reported option for referring women with mental health problems (88.3%, n=135). Sara a midwife was concerned these referrals would result in women receiving medication as a 'quick fix' due to the long waiting lists and the expense of counselling

services. Zoe had been on the waiting list for two years to see a counsellor when she attended the interviews. One midwife mentioned that some large surgeries had counselling services within the practice, again highlighting the disparity in service availability (Witcombe-Hayes 2018). Locally, for women in need of immediate care, the PNMHT recommend women contact their general practitioner. However Victoria described how she had to ask repeatedly for an appointment at her doctors' surgery when she felt her mental health had deteriorated. Furthermore, Jayne expressed her concern that women who had built a trusting relationship with their midwife, disclosed a problem, would have to retell their story when referred to their general practitioner. If the midwife felt it appropriate, referral straight to a counselling or support service would prevent a duplication of services and extra appointments for women.

Health visitors ranked third in the choice of referral options for 69.0% (n=100) of midwives. Health visitors' remit in Wales includes extra support for women with mental health problems because of its relation to ACEs (Ashton et al. 2016). A mandatory visit is expected from health visitors for all women around 28 weeks gestation, where one topic discussed concerns women's mental health but if problems arise later in pregnancy referral will be required. Target visits after 28 weeks gestation are suggested for women in need of additional support for emotional or mental health problems (Welsh Government 2016b). Health visitors can provide extra support in the form of listening visits. These are designed to develop self-help strategies and include non-directive counselling delivered in the home for women with mild to moderate mental health problems. Despite having been removed from NICE guidance since 2014, and limited evidence of their benefit, they are still used and recommended in Wales (All Wales Perinatal Mental Health Group and Community of Practice 2018).

As well as the services above, midwives were aware of the Birth Afterthoughts clinic which uses the rewind technique (Chapter six), a service for women traumatised by birth. Locally this is run by midwives and has been available for several years and many similar ones exist UK wide. One midwife suggested it was not well publicised and women who needed it most were not aware of the service. Laura recalled how she had seen a leaflet in her antenatal information pack and suggested if she had been aware of the service she would have attended after her last child was born. She wondered whether if she had spoken about the issues, her experience with a new baby might have been better. However Jane the specialist perinatal midwife described how the PNMHT were not supportive of the service as they felt it was not evidence based and not provided by a trained therapist.

Midwives were divided in their opinion of this service and suggested *debriefing* women after birth rather than waiting for an appointment was more beneficial. Space is provided in the All Wales Maternity Records to document a debrief but is often left blank, possibly due to a lack of guidance and training regarding what this should entail. Asking women how they perceived their labour and birth as Lily described in the focus group, could open up opportunities for women to discuss concerns and feel listened to which in this case proved beneficial. This is not the same as an official debriefing session by a trained psychologist. A systematic review of RCTs of debriefing women after birth, mainly by midwives, reviewed seven studies. While two reported positive findings, one showed possible short term harm and the others lacked statistical significance (Rowan et al. 2007). Another study followed up women six months after a midwifery debrief and found possible emotional harm (Small et al. 2000). A Cochrane review did not find evidence of debrief versus normal postnatal care in reducing psychological trauma following childbirth (Bastos et al. 2015).

Rather than one service for women with mental health problems, there are several services run by the local Health Board to support women's mental health as discussed above, and several more which were not mentioned by midwives in the focus groups. Specialist antenatal clinics were available for women who have had a stillbirth, worried about childbirth and one run by an obstetrician with an interest in supporting women with mental health problems. The latter clinic is run alongside other antenatal clinics as there was concern women would feel stigmatised if there was a specific mental health clinic (Goodman 2009; Keefe et al. 2016). Midwives in the focus groups were keen to suggest extra services they felt should be available to women including: an outreach service such as a home visit to avoid women having to leave their house; a maternity specific mental health helpline or drop in clinics similar to those for breastfeeding, provided by the NHS. One midwife mentioned a service in Sweden for women to discuss anxieties usually around fear of childbirth, where midwives provide CBT, mindfulness or psychotherapy. Amalgamating services for poor mental health in one place could provide better care for women as the staff would become skilled and experienced at providing support.

Although confident in their care of physical issues, when it comes to mental health, midwives were keen to support women but felt unprepared. The current study revealed midwives were quick to refer women to the general practitioner and PNMHT, similar to previous research (Jones et al. 2011), possibly due to midwives' perception of mental health problems being a deviation from the norm. The NMC Code states midwives are to 'accurately assess signs of normal or worsening physical and mental health' and 'make a timely and appropriate referral' (Nursing and Midwifery Council 2015, p. 11).

Welsh guidelines for perinatal mental health state women with mild to moderate problems should be referred for psychotherapy, listening visits, medication or specialist help as appropriate (Welsh Government 2019b). Difficulties arise with mental health as several conditions are on a continuum, leading to problems deciding what is normal and when a condition needs a label to enable support provision. Working out what is normal in pregnancy and when it becomes clinically significant and in need of support is not easy. This relies on judgement from the women and midwives, which could explain why midwives are quick to refer on.

Midwives also mentioned they were not aware of where they could send women for extra support apart from the PNMHT or their general practitioner. Although Amber from the specialist midwifery team reeled off a list of possible support services, they were not widely known amongst the other midwives. Guidance for perinatal mental health services in Wales has been provided in the form of a flow chart for suggestions of how to support women's mental health (All Wales Perinatal Mental Health Group and Community of Practice 2018). Midwives require skills in asking questions as well as a list of options for women for further support in order to build their confidence in providing support for women's mental health. In addition, despite calls for health professionals to promote mental wellbeing (Boots Family Trust Alliance 2013; National Institute for Health and Care Excellence 2014; Welsh Government 2019b) to reduce the incidence of perinatal mental health problems, none of the midwives mentioned promoting mental health wellbeing.

There are many ways midwives could provide support themselves. Close to one third of midwives in a large postal survey (n=815) in Australia stated they would offer empathy and understanding to women with moderate to severe postpartum depression (Jones et al. 2011). Emotional support has always been part of midwifery (Myles 1955), asking questions and listening to women is sometimes enough; several studies have reported the therapeutic effect of taking part in interviews (Furber et al. 2009; Staneva et al. 2017). The fact women are being listened to may be as important as providing advice. Communication has been found to be important regardless of care setting, those who built up a relationship with midwives felt valued, respected and cared for, some felt empowered and in control (Luo 1999). Disappointingly NQMs noted qualified midwives who spent time talking to women about their mental health were classed as 'slow' by their colleagues, in keeping with the literature (Phillips 2015).

7.8   Support networks

Statutory services and counselling are not always required by women, there are options for women to support their own mental health. Women in the interviews

described self-help strategies, similar to previous studies (Raymond et al. 2014). Long term solutions for poor mental health were mentioned by Natalie such as changing work patterns, for Olivia it was returning to her CBT books. Art classes and talking to others, or conversely time alone, were among the options tried by women as ways of supporting their mental health. Tara joined the wellbeing team and Gwenda became a peer counsellor after her brother died. Seeing other people in the same situation was comforting, knowing they are not the only one normalises experience and provides hope (Biggs et al. 2015). Self-help was reported as beneficial by Furber et al. (2009). Encouraging women to find out what works for them would be advantageous and limit the need for extra costs for statutory or voluntary services.

Third sector agencies and online support may also be helpful in supporting women's mental health. Lily a midwife, mentioned self-help apps, although they were not specifically for the perinatal period, and there was disagreement between midwives as to the usefulness of these. Online chat sites were used by women, finding it particularly beneficial to gain support from their peers with similar conditions such as hyperemesis. The feeling of mutual support and knowing they were going through the same experiences was more beneficial than advice from relatives or health professionals, making them feel less alone. Women did not appear to know any non-statutory services to support their mental health, apart from Dawn, whose mother had found a private counselling service. Dawn found the service invaluable and they supported her throughout the pregnancy alongside her midwife.

Support networks are frequently explored in relation to mental health and are especially important in areas of low socioeconomic environments; these can include support from partner, friends and family (Raymond 2009). Perceived lack of social support has been shown to be a significant independent predictor of depression (OR 4.14, 95% CI 2.69-6.37) (Miszkurka et al. 2012). Previous studies have reported significant associations between neighbourhood deprivation and increasingly poor mental health (Fone et al. 2014), whereas in this study association between support from friends and family appeared to override any socioeconomic influences. Gwenda was one of several women who discussed the importance of a network of support and wondered how women without this could cope with daily life. Network support offers a sense of belonging and affiliation (Morrison and Bennett 2006), different types of support are required at different times (Balaji et al. 2007).

Surprisingly in the current study, lack of support from significant others was not associated with symptoms of anxiety or depression (OR 0.884, 95% CI 0.695-1.025, p=0.088). This might be because the MSPSS unlike other screening tools does not ask

specifically about partners in the questions, only 'significant other'. In the interviews, women described their partners as generally providing practical support such as cooking and childcare, which gave women time to rest, in turn helping support their mental health. Blanchard et al. (2009) described how partners expressed confusion over moods, perhaps explaining why women in this study asked for practical support from them. Perceived partner support shows a moderating effect on depression and birth outcomes (Nylen et al. 2013) and is particularly important to the wellbeing of women (Blanchard et al. 2009). Literature supports this study, concluding grandparents as a major source of support (Blanchard et al. 2009). In the interviews women described female members of the family such as mothers or sisters as their main source of information and emotional support. Raymond (2009) suggested women appreciate support from female family members as they have 'been there before'. Friends and work colleagues were often used to express frustrations or talk to but often not about mental health problems. Results from this study found low support from family (OR 1.13, 95% CI 1.00-1.27, p=0.044) was a significant predictor of poor mental health. Contrary to existing research, low support from friends (OR 0.83, 95% CI 0.70-0.99, p=0.040) was a protective factor for adverse mental health. Inconsistencies may be due to the low number of screen positive women (n=35) and missing possible reverse scoring of the MSPSS screening tool.

Emotional and social support and self-confidence have been reported as 'protective factors' for mental health (Edwards et al. 2008) and psychosocial interventions to target and enhance protective factors could be offered in pregnancy to improve women's sense of coherence (Staneva et al. 2016). Higher levels of social support are correlated with fewer symptoms of anxiety and depression regardless of age, education, income or parity (Glazier et al. 2004; Aktan 2012). Peer support in the form of antenatal classes were discussed by several women in the interviews, particularly NCT classes, where women felt support from likeminded couples, in the same situation and geographical area. They described how socialising outside the classes was more important than the information they received. Gwenda described the class like 'buying a group of friends'. This is consistent with another small study in the UK reporting on antenatal classes and their supportive nature as a network of friends in the same situation enhancing self-efficacy (Nolan et al. 2012). The cost of classes did not put women off attending and although they are available at reduced or no cost for women who could not afford them, this was not alluded to in the focus groups or interviews.

Self-efficacy, described as an individual's belief that a person can reach their goals and is able to manage future situations (Bandura 1986), is an important aspect of mental wellbeing. Low self-esteem can lead to low self-efficacy; both are associated with

228

anxiety and depression. The current study reported low self-efficacy was a significant predictor of anxiety and depression (OR 1.27, 95% CI 1.12-1.35, p=0.001) but not as significant as having a previous mental health problem. This is consistent with literature. Low personal self-esteem has been reported as a significant predictor of anxious status (Jomeen and Martin 2005) and self-esteem had a greater influence on the relationship between antepartum stress and depressive symptoms than satisfaction with social support (Jesse et al. 2014). Considering the evidence, improving women's self-esteem and self-efficacy could reduce anxiety and depression and improve women's mental health.

7.9 Training for midwives

Midwives reported a lack of training as a reason for not feeling prepared or confident in their role of supporting women's mental health. Training to become a midwife takes three years but despite recommendations for increased undergraduate and continuing professional development (Ross-Davie et al. 2006; Lees et al. 2009; King et al. 2012) the NQMs stated they did not feel training had prepared them to support women's mental health. Apart from one who had a good experience with a multidisciplinary team approach to learning, the majority felt it was too theoretical and did not provide the practical aspects of talking to women or knowledge of medication for mental health problems. Although some NQMs reported a better understanding of mental health than 'older' midwives. Even though 50% of NQM's training is in clinical practice, if qualified midwives are not confident in supporting women's mental health, NQMs and students will not have a role model to learn from. No clear difference was noted between midwives who had trained 10 to 20 years ago and NQMs. However the differences in training over the years cannot easily be measured, training may have improved but not to the extent that midwives feel confident and competent.

In this study confidence in caring for women with mental health problems was reported by 49.6% of midwives (n=72). Reassuringly higher than previous reports where 77% of midwives felt less confident in caring for women with depression and schizophrenia than caring for women with rarer complex physical problems, such as obstetric cholestasis and human immunodeficiency virus (Ross-Davie et al. 2006). Perhaps a reflection of the emphasis on training around physical health of women compared to mental health (Edge 2010). In the focus groups NQMs also reported their training related to mental health mainly in the post-natal period. The new standards for training midwives include psychological aspects of care (Nursing and Midwifery Council 2019). Considering midwives care for women for around six months in pregnancy and only 28 days after giving birth, midwives highlighted the lack of training on antenatal mental health.

Overwhelmingly midwives felt they could be better prepared (94.5%, n=137) to look after women with mental health problems. This is similar to previous research using the same questionnaire where 93% selected this option (McCauley et al. 2011) and results from a survey of health professionals in Wales where 90% felt they would benefit from further training on perinatal mental health (Witcombe-Hayes et al. 2018). Midwives suggested mental health training was important (15.2%, n=22) or extremely important (11%, n=16) to their everyday practice. All midwives in the focus groups suggested an absence of training as a barrier to providing care, even those in the specialist community team who cared for the most vulnerable women and provided 'expert' advice to other healthcare professionals. This team discussed how they relied on Jane the specialist perinatal midwife as a source of information and advice. Midwives in this team appeared more competent in supporting women's mental health, maybe due to their experience, support for each other and a list of referral options which they had developed.

The majority of midwives reported skills to support women's mental health were learnt 'on the job' (86.9%, n=126). Just over half stated midwifery training as where they learnt skills (53.1%, n=77), despite 63.4% (n=53) being qualified for over five years. In line with other research, midwives described how they were eager to receive training (Buist et al. 2006; McCauley et al. 2011; Rothera and Oates 2011; Byatt et al. 2012a; Jones et al. 2012; Hauck et al. 2015). It was encouraging to note in the previous two years 31.7% (n=46) of midwives had attended a course or training in relation to perinatal mental health, 10.4% (n=15) stating it was on the mandatory training days. Midwives reported receiving training on alcohol use/abuse (42.1%, n=61), illicit drug use/abuse (33.8%, n=49), physical/sexual abuse (34.5%, n=50) and grief and loss (32.4%, n=47); these topics are covered in the mandatory training each year along with a presentation on mental health. Training in suicide risk assessment and mental status assessment had only been undertaken by 3.4% (n=5) and 11% (n=16) midwives respectively. Specific suicide risk and mental health assessment are not part of mandatory training. Similar findings have been reported in Australia, where over half of the midwives surveyed had received training on grief and loss counselling (51%), but only 20% received any mental health education (McCauley et al. 2011). Although some of the annual training is mandated by the Welsh Government and NMC, topics discussed may vary between Health Boards.

Midwives in the focus groups had accessed other courses outside work and used their own time and money to improve their knowledge. Online rather than face-to-face training is available, one module is provided by the Health Board and online learning packages are available from the Royal College of Midwives for those who subscribe

and another used locally with student midwives (All Wales Perinatal Mental Health Group 2012), which is free and publicly accessible. The latter provides an overview of postnatal and severe mental health problems, medication and how to discuss mental health with women, the topics which midwives in the focus groups wanted more information on. It is a good learning resource but at only one hour long it cannot contain all information midwives suggest they require to support women's mental health needs. Of the midwives in this study 4.8% (n=7) chose e-learning as their preferred source of training for mental health, possibly because they are unaware of the resources available.

Unfortunately, only 21.4% (n=31) of midwives in this study suggested training helped them in practice, which might be due to the content being theoretical rather than related to practice. Conversely a systematic review of 12 articles found training made a positive improvement in knowledge regardless of its content or mode of delivery (Legere et al. 2017) and another showed training increased staff confidence in identifying and managing mental health problems (King et al. 2012). Evaluation of several training packages suggest even those which show a difference are expensive and sometimes unsustainable (Ross-Davie et al. 2007). Improved confidence does not necessarily require long periods of training. Locally questions about domestic violence, when initially introduced were not reported consistently, but reminders and encouragement have improved skills and confidence, compliance has improved and it is now imbedded in practice. In 2018/2019 95% of women were asked at least twice in pregnancy about domestic abuse compared to 67% in 2017/2018.

The National Society for the Prevention of Cruelty to Children (NSPCC) in Scotland recommend at least biannual e-learning (NHS Education for Scotland 2019) and Scotland also has a perinatal curricular framework recommended for all staff working with women in the perinatal period. The newly formed Perinatal Clinical Network in Wales has started a programme of two day training with psychologists within PNMHT and will eventually cascade training to all health professionals working with women in the perinatal period (Personal communication 2019). A third bespoke training day for individual professions has also been recommended but not yet prepared. It is questionable whether an opportunity for all midwives to attend three days training on top of the training they already undertake each year will be given.

Future involvement of midwives in the design, implementation and facilitation of these interventions (Lavender et al. 2016) into mainstream midwifery practice will assist in ensuring women have access to appropriately evaluated and validated interventions. Georgia suggested scenarios, similar to ones held on mandatory training days for

postpartum haemorrhage. Case studies and role play could form part of the training to gain an overview of conditions assessment and treatment.

7.10 Contribution to knowledge

This thesis is the first to assess the extent of perinatal mental health problems in early pregnancy in a South Wales region, where information regarding the number of women with mental health problems is unknown. Health Boards are only required to collect information regarding those with mental health care plans in place. Findings indicate nearly a third of women reported a previous or current mental health problem, slightly over rates previously reported.

Previous studies, using both survey and interview designs have focused on the experiences of women receiving care from perinatal mental health services. In this study, participants were women with mild to moderate mental health problems not receiving support from the perinatal mental health team. In addition interviews were conducted prior to birth to capture current experiences, unlike previous research where information was obtained months or years after birth. This is the first study known to explore the experiences of women and midwives concurrently in the same NHS organisation, providing a unique view of the same service from both perspectives. Specific to this study was the use of a timeline which added a new dimension to the interviews with women, to explore changes in mental health at specific time points in women's lives, especially during pregnancy.

Limited research has previously explored women's access to information regarding mental wellbeing in the perinatal period. This study found that the majority of women did not intentionally look for information concerning their mental health. The reasons for this were either due to a lack of knowledge of the importance of mental wellbeing or because women were more concerned about their babies' wellbeing than their own. This study indicated anxieties were made worse by a lack of control and need for information rather than social and economic issues experienced by women from low socioeconomic backgrounds where much of the previous research has focussed (Jesse et al. 2008; Kopelman et al. 2008; Raymond et al. 2014).

Focus groups with midwives explored their experience of caring for women's mental health mainly during pregnancy but not specifically at the booking appointment where previous research has concentrated. Findings from women and midwives indicated that midwives were unsure how to ask questions and women unsure what was being asked. These are important findings as the majority of women do not voluntarily discuss their mental health.

7.11 Strengths and limitations

Few studies have previously combined women and midwives' experiences from the same NHS organisation, providing an opportunity to assess barriers to care from both perspectives and thus adding weight to the findings. Even so, results were in line with the literature. Both women and midwives discuss continuity and time as being important in recognising and disclosing mental health problems. Extra time would have assisted women, the majority of whom were willing to discuss their mental health problems with health care professionals. In contrast this would not have helped midwives, who were keen to support women but did not feel equipped to provide that support themselves.

A strength lies in the number of women (n=302) consenting to the study, with a good response rate (60%) suggesting limited bias at recruitment. It is acknowledged that the cohort was overrepresented by well educated, professionally employed, British born women who are statistically less likely to experience mental health problems. As an under researched group this can be seen as a positive contribution. Comparison of the cohort with anonymous data from women booked at the same Health Board provided even greater clarity to the prevalence of mental health problems in early pregnancy. This also provided reassurance that the sample was representative of the general booking population in many regards apart from a higher proportion of women (55.9%, n=1977) reporting no occupation compared to participants (18.5%, n=56). The breadth of experience of midwives in years and clinical position provided assurance that the findings were shared by most midwives as well as being similar to the literature.

Acknowledgement is made that a midwife undertaking the interviews and focus groups could have influenced participants and interpretation of data. The frank conversations that took place in the focus groups with midwives who knew the researcher and the NQMs who did not suggest this was not the case. The benefits of working as a midwife in the same Health Board, meant topics of conversation and local policies and procedures were familiar (Byrne et al. 2015) which assisted recruitment. Women were aware from the information leaflets that the researcher was a midwife and appeared comfortable in the interviews and benefited from a discussion afterwards specific to their pregnancy related concerns.

Several limitations were noted during data collection. Data obtained from the database used to obtain anonymised data did not match the categories used in the questionnaires. There were also large portions of the database left blank, therefore direct comparisons between women recruited and the pregnant population were not possible for some categories. Timelines were used as planned but some women did

not engage as fully as anticipated. Changing the process and providing more information prior to use might have made them more accessible. Whether this would have altered results is not known. The questionnaire for midwives was not the first choice for this study. Originally designed for midwives in Australia, rewording was used to make it applicable to the UK. Although not noted when validated, some questions caused ambiguity, resulting is annotated questionnaires and data queries, resolved through discussion in the research team.

PNMHTs vary throughout the UK and generalisations from this study cannot be made regarding this service. It is acknowledged that diagnoses of mental health conditions are made using gold standard DSM interviews by qualified psychiatrists. In contrast, this study relied on self-reported tools with only a small percentage of women having a clinical diagnosis, requiring caution when reporting rates of anxiety and depression. Previous research often uses self-reported measures, giving some reassurance that comparisons can be made between studies. Furthermore the EPDS and GAD-7 are recommended screening tools for use in clinical practice in the perinatal period by NICE (2014) meaning these findings are more reflective of practice.

The small number of women in the screen positive group (11.6%, n=35) was noted as a limitation. This could explain erroneous results which showed high support from friends was associated with an increased risk of mental health problems. In addition the MSPSS screening tool to assess social support which, some women seemingly reverse scored, might have contributed to these results. Due to the combination of the MSPSS and small cohort of screen positive women, caution interpreting the results is suggested.

7.12   Recommendations for practice

Provide appropriate, evidence-based information to women to reinforce the importance of mental health

Knowledge of mental health problems in the perinatal period is poor amongst health care professionals, women and the general public. Continued publicity through media, posters and leaflets might be helpful however these were not noticed by the majority of women. In this study women were unaware of sources of information to support their mental wellbeing. Information is provided on lifestyle, including diet and smoking, likewise, mental health is an important topic which should be discussed early in pregnancy. Universal support for women's mental health would ensure all women received support regardless of the presence of a problem. This should be available in a digital format as this was the women's preferred choice but backed up with

conversations by professionals and paper-based information for women if preferred. Information should be provided regarding:

- ➢ Mental wellbeing
- ➢ The signs and symptoms of mental health problems
- ➢ Digital resources for mental health information
- ➢ A list of support services locally and online

Understanding their own mental health will assist women detect deviations from normal; however this should not replace discussions with health professionals.

Provide information and training for midwives on the importance of asking questions relating to mental health problems

Previous mental health problems are an important predictor of poor mental health. As reported in this study, just asking about previous mental health may not detect all women with anxiety or depression. Problems occurred with either midwives not asking questions or women being unsure of what was being asked. Training is required to ensure midwives are aware of the significance of asking questions relating to previous and current mental health problems and documenting concerns. In addition midwives should be made aware of the importance of asking questions at each appointment as recommended by NICE (2014) and discussions around the practical aspects of how to ask questions to ensure they provide an opportunity for women to disclose problems.

Additional time for appointments and continuity of carer.

Increased time at appointments and continuity have been recommended and would improve conversations between health care professionals and women (Department of Health 2016; NHS England 2016; Scottish Government 2017a; National Institute for Health and Care Excellence 2019a; Nursing and Midwifery Council 2019; Welsh Government 2019b). Reasons for not asking questions related to mental health included time constraints at appointments. This led to women withholding information and midwives focusing on physical aspects of the appointment. Increasing appointments by 10 minutes may provide time for midwives to ask about mental health and allow women time to ask questions which may allay anxiety for some. Additionally continuity of carer was shown to be important to midwives and women. They discussed how conversations would be more effective if women were seen by the same midwife who can assess improvement or deterioration of mental health and enable women to build relationships and feel comfortable discussing concerns.

Provide midwives with a list of self-help and referral sources for women who require additional support for their mental health

Midwives were keen to support women themselves but felt they did not have skills and confidence to do so and therefore referred many women to PNMHT, general practitioners or health visitors. Women suggested many self-help strategies which improved their mental health, such as singing, time to themselves or meeting with friends. These options could be offered to women, as well as activities such as exercise which have been shown to be beneficial causing significant reduction in tiredness, anxiety and depression (Gaston and Prapavessis 2013).

Low social support was found to be a significant factor in predicting mental health problems. Therefore opportunities should be taken to enquire about relationships with family and friends, to ensure there is a supportive network. If this is lacking, encouragement to attend groups such as NCT or antenatal classes should be advised. Women found antenatal groups beneficial in building support networks with other pregnant women. Low self-esteem was also shown to be a significant predictor for mental health problems. Self-efficacy and self-esteem need to be recognised and supportive encouragement provided at appointments with health care professionals. Online self-help tools can also be suggested for women with low self-esteem and self-efficacy from sources such as Mind (2019).

Training for midwives

Unlike previous research, midwives in this study did not find the training they had received helpful for their clinical practice. Consistently midwives asked for more training to support women's mental health. A lack of confidence led to midwives being afraid to ask questions in case they made the situation worse or they were unsure how to proceed if women disclosed a problem. Fear of women with severe mental health problems was given as the reason for negative attitudes noted by midwives and women. Training should therefore include practical aspects of supporting women's mental health to improve midwives' confidence, in turn providing better care.

Previous training has been taught over several days or longer modules but needs to be sustainable with a low impact on finances and time. There are several books relating to perinatal mental health aimed at midwives and freely available online modules which could be evaluated. A programme of monthly hour-long sessions as described below (7.13) might better fit the time and budget of health care professionals and health boards.

NQMs were critical of their undergraduate training, stating it was too focused on physical aspects of care or postnatal mental health. By providing qualified midwives with knowledge, will increase their confidence and improve the care of women and their families. This can then be imparted to students during their clinical placement.

Extra support for women's mental health

Gaps in local services for women who do not fit the referral criteria for PNMHT but require more input than could be provided at an antenatal appointment are needed. These could be filled by training individual midwives to provide emotional support in pregnancy (Evans 2018) or a self-referral telephone triage system manned by midwives for women concerned about their mental health. Evidence of improved mental health has been reported through such provision (Biggs et al. 2015). Telephone services are available in the UK from third sector organisations such as *Family Line* and the *Samaritans* but they would not be able to access the women's notes and answer pregnancy specific questions which were the main source of concern for women in this study. Similar services already exist for physical problems through the antenatal assessment unit.

7.13 Recommendations for future research

The literature suggested psychological therapies were beneficial but long waiting lists mean few women received these. Therefore further assessment and provision of interventions to support women's mental health are required. Numerous new services have been introduced differing in their makeup and referral acceptance thresholds. Further research is needed to assess effectiveness of interventions and services to inform an evidence base which can be rolled out in the UK and further afield. These could include:

Exercise for pregnancy

Simple activities such as an exercise program showed statistically significant reduction in tiredness, anxiety and depression (Gaston and Prapavessis 2013). No comparison group was available in the study therefore further research is required. RCTs should include guided exercise programme compared to a control group or exercise compared to antidepressants for mild to moderate anxiety and depression. This is a relatively cost-free suggestion for women, with the potential to improve mental and physical health.

Brief interventions to improve self-efficacy

This study indicated low self-efficacy was a significant predictor for mental health problems. Previous literature supports this finding, yet little research exists relating to

increasing women's self-efficacy. Research should assess the effectiveness of women using online sources during the perinatal period. In addition midwives could provide encouragement during appointments to improve women's self-efficacy (Recommend during personal correspondence, Professor Christine Bundy, 2019). Interventions such as motivational interviewing (Chisholm et al. 2016) have been used in consultations with health care professionals. These were shown to improve confidence and made consultations more effective as a holistic approach to care. Research to assess if this could be used in a maternity setting is required.

Non-statutory support for women with mental health problems

Low support from families was found to be a significant predictor for mental health problems, which is backed up by previous studies. Women in this study stated the benefits of antenatal groups such as NCT. Several third sector organisations or trained peer support have been assessed as stand-alone interventions but not as RCTs to compare these to other services or care as usual. Several services should be assessed for their effectiveness to see if they can be recommended for women during the perinatal period:

- ➢ Stand-alone services with trained peer support workers, with a history of mental health problems paired with women in the perinatal period
- ➢ Antenatal groups such as NCT
- ➢ Online modules for pregnancy

24 hour telephone support service run by midwives

Several women in this study described how information they received during pregnancy left them feeling anxious with unanswered questions. Women are able to self-refer for breastfeeding advice and physical problems during pregnancy. Australia has a telephone support service for mental health concerns and was evaluated favourably. Providing an option to talk to a midwife regarding mental health alongside their physical health problems might reduce the number of visits to assessment units but needs evaluating.

Postdoctoral research project – training for midwives

Midwives' requests for training requires assessment of potentially sustainable projects. A training package is required to fit the time and resources available in an already stretched service. Midwives asked for practical application of information rather than theoretical, which would be better provided by face-to-face contact. Postgraduate training could be offered as short topic based recorded sessions, linked to online resources. Time between sessions would allow midwives to assimilate the information

and put it into practice. Inviting women with lived experience of poor mental health could increase midwives' confidence in providing care and reduce fear. Multidisciplinary team working was reported favourably by NQMs, sessions could include all staff in the maternity unit and the introduction of pharmacists or psychiatrists to help teach topics such as medication. Topics should include:

- Mental health conditions and their negative consequences
- Severe mental health problems – PNMHT
- Asking women questions about mental health – woman with lived experience
- Importance of social support
- Referral to PNMHT
- Medication during pregnancy and newborn observations – pharmacist/neonatologist
- Referral to local services for fear of childbirth, bereavement and birth trauma
- Information for online and local support services for women

7.14 Dissemination

Dissemination will take various formats and include distribution to key stakeholders, locally and nationally.

7.14.1 Publications

The plans are to publish articles in line with the study aims:

- *A survey of women's mental health in early pregnancy in an area of South Wales*
  This will report findings from the women's questionnaire, including the prevalence of poor mental health in the Health Board, a comparison with anonymised data. Predictive factors for anxiety and depression including the importance of asking about mental health history, support networks and self-efficacy. Target journals – Archive of Women's Mental Health, The British Journal of Psychiatry Open, Birth.

- *Experiences and barriers to accessing care in a group of women with mild to moderate mental health problems in pregnancy*
  Thematic analysis of interview data with women in late pregnancy, reporting on their experiences throughout their lives in relation to mental health and barriers to care. Target journals – Women and Birth, Birth.

- *Midwives' experiences of caring for women's mental health*

Findings from the midwives' questionnaire and focus groups to provide an overview of service needs and changes required as well as training suggestions for midwives. Target journal – Midwifery.

7.14.2 Posters and presentations

Opportunities will be taken to display posters and oral presentations at a local and national level. These will be presented along the same lines as the publications. Conference suggestions include:

- RCM Research Conference, 11th March 2020
- Local Postgraduate Research Symposium, 8th April 2020
- Virtual International Day of the Midwife Conference, 4th/5th May 2020
- Wales and South West Maternity and Midwifery Festival, 16th September 2020
- Royal College of Midwifery Annual Conference, 6th/7th October 2020
- Local Research and Development Conference, Autumn 2020

7.14.3 Stakeholders

Information will be disseminated to stakeholders involved and interested in perinatal mental health at a local level:

- A summary of findings will be prepared in the form of an infographic leaflet, including the number of participants who completed questionnaires and interviews and the main findings from interviews. These will be sent to the 121 women who requested them.
- Local dissemination in the Health Board will take the form of posters, oral presentations and a summary emailed out and placed on the secure Facebook page for all staff.
- A short report summarising findings will be sent to contacts made during the study period who have asked for feedback such as, Perinatal Network in Wales, Scottish Network midwifery lead, Public Health Wales, local PNMHT and NSPCC contacts.
- Feedback will be provided to the funder and presentations to scholars at future training events.
- Presentations to midwifery and postgraduate students, lecturers and researchers in the local University.

7.15 Conclusions

This study adds to the growing body of literature relating to perinatal mental health, a global concern, where one in five women admits to problems during pregnancy.

Negative consequences of poor mental health before and after birth affect women, their babies, family and society. The latest *Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK* (MBRRACE) report found maternal suicide the second largest cause of direct maternal deaths in the perinatal period and rates have not reduced in the last decade (Knight et al. 2019). The recent investment by UK government to support perinatal mental health was designed to address the short and long term consequences of poor mental health. In addition campaigns by third sector organisations such as the NSPCC and Maternal Mental Health Alliance aimed to raise the profile of mental health in the perinatal period.

Questions with women regarding previous history of mental health were asked by midwives but they did not use screening tools contrary to the advice from NICE (2014). Assessment of women's mental health was made via a range of questions and observations. Both midwives and women described limited time at appointments and lack of continuity as reasons for not discussing mental health, with priority being given to the physical care of mother and baby. Concern was expressed by midwives that if they asked questions regarding women's mental health, they might make the situation worse or they would not know what to do if women disclosed an issue. Midwives were keen to support women's mental health but low confidence levels reduced conversations with women.

Midwives stated they need more or different training to respond effectively to the mental health needs of women in the perinatal period. A new finding was midwives who had received training, contrary to previous studies, stated it did not prepare them for the practical aspects of supporting women's mental health. This study found midwives quick to refer women on for support, few were aware of how they could support women themselves. Providing midwives skills and confidence to offer support, as well as referral options will ensure midwives are better placed to support women and reduce the negative consequences for themselves and their family.

The main finding from the questionnaire data identified previous mental health problems, low self-efficacy and social support as predictors of anxiety and depression, similar to previous research with low socioeconomic, young or ethnic minority women. In the interviews women described how mental health problems were exacerbated by comparing themselves to other women, a perceived lack of information and a lack of control over situations relating to pregnancy, such as tiredness. An important finding was women benefited from a network of family and friends to support their mental health. Partners were often sources of practical help while family usually female members provide emotional support. Peer support from friends made in antenatal

241

classes were also cherished as important sources of encouragement. Women also mentioned their own coping strategies to improve their mental health for instance, meeting friends or time alone.

This study has shown how women with mild to moderate mental health problems in pregnancy and midwives who provide support faced several barriers which hindered provision of perinatal mental health care. Women with mental health problems deserve better support and midwives need more and different training. This project begins a new programme of work in this area, and it is hoped that findings will inform the improvement of future services and practice.

References

Ackerman, C. E. 2020. *What is self-efficacy theory in psychology?* Available at: https://positivepsychology.com/self-efficacy/ [Accessed: 9 May 2020].

Aguinis, H. et al. 2013. Best-practice recommendations for defining, identifying, and handling outliers. *Organizational Research Methods* 16(2), pp. 270-301. doi: 10.1177/1094428112470848

Akiki, S. et al. 2016. Determinants of maternal antenatal state-anxiety in mid-pregnancy:booking role of maternal feelings about the pregnancy. *Journal of Affective Disorders* 196, pp. 260-267. doi: https://doi.org/10.1016/j.jad.2016.02.016

Aktan, N. M. 2012. Social support and anxiety in pregnant and postpartum women. *Clinical Nursing Research* 21(2), pp. 183-194. doi: doi:10.1177/1054773811426350

Alderdice, F. et al. 2013. A systematic review of systematic reviews of interventions to improve maternal mental health and well-being. *Midwifery* 29(4), pp. 389-399. doi: 10.1016/j.midw.2012.05.010

All Wales Perinatal Mental Health Group. 2012. *Maternal mental health: a learning programme for midwives.* Cardiff: Cardiff University.

All Wales Perinatal Mental Health Group and Community of Practice. 2018. *Guidance for the delivery of integrated perinatal mental health services in Wales.* Cardiff: Public Health Wales.

American Psychiatric Association. 2013. *Diagnostic and statistical manual of mental disorders.* 5th ed. Washington, DC: American Psychiatric Association.

Anderson, C. M. et al. 2006. Why lower income mothers do not engage with the formal mental health care system: perceived barriers to care. *Qualitative Health Research* 16(7), pp. 926-943.

Anxiety testing .com. 2017. *Anxiety testing .com: know you better, treat you better.* Available at: http://www. anxietytesting.com/anxiety-tests.php [Accessed: 20 February 2017].

Appleby, L. et al. 1994. Screening women for high risk of postnatal depression. *Journal of Psychosomatic Research* 38(6), pp. 539-545. doi: https://doi.org/10.1016/0022-3999(94)90051-5

Ashley, J. M. et al. 2016. Estimated prevalence of antenatal depression in the US population. *Archives of Women's Mental Health* 19(2), pp. 395-400. doi: 10.1007/s00737-015-0593-1

Ashton, K. et al. 2016. *Adverse childhood experiences and their association with mental well-being in the Welsh adult population*. Available at: https://research. publichealthnetwork.cymru/files/6114/9865/9069/FINAL-_ACE__Mental_Well-being_Report_E.pdf

Austin, M. P. et al. 2008. Antenatal psychosocial assessment for reducing perinatal mental health morbidity. *Cochrane Database Systematic Review* (4), Available at: http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD005124.pub2/full [Accessed: 12 November 2016]. doi: 10.1002/14651858.CD005124.pub2

Ayers, S. and Shakespeare, J. 2015. Should perinatal mental health be everyone's business? *Primary Health Care Research and Development* 16(4), pp. 323-325. doi: 10.1017/S1463423615000298

Bagnoli, A. 2009. Beyond the standard interview: the use of graphic elicitation and arts-based methods. *Qualitative Research* 9(5), pp. 547-570. doi: doi:10.1177/1468794 109343625

Baker, S. 2011. *Midwives' emotional care of women becoming mothers*. Newcastle upon Tyne: Cambridge Scholars Publishing.

Baker, S. E. and Edwards, R. 2012. How many qualitative interviews is enough? *National Centre for Research Methods Review Paper.* Available at: http://eprints. ncrm.ac.uk/2273/4/how_many_interviews.pdf [Accessed: 7 July 2017].

Balaji, A. B. et al. 2007. Social support networks and maternal mental health and well-being. *Journal of Women's Health* 16(10), pp. 1386-96. doi: 10.1089/jwh.2007.CDC10

Bandura, A. 1986. The explanatory and predictive scope of self-efficacy theory. *Journal of Social and Clinical Psychology* 4(3), pp. 359-373.

Bastos, M. H. et al. 2015. Debriefing interventions for the prevention of psychological trauma in women following childbirth. *Cochrane Database of Systematic Reviews* (4). doi: 10.1002/14651858.CD007194.pub2

Battle, C. L. et al. 2015. Potential for prenatal yoga to serve as an intervention to treat depression during pregnancy. *Women's Health Issues* 25(2), pp. 134-141. doi: 10.10 16/j.whi.2014.12.003

Bauer, A. et al. 2014. *Costs of perinatal mental health problems*. Centre for Mental Health. Available at: https://www.centreformentalhealth.org.uk/costs-of-perinatal-mh-problems [Accessed: 12 December 2016].

Bayrampour, H. et al. 2015. Effect of depressive and anxiety symptoms during pregnancy on risk of obstetric interventions. *Journal of Obstetrics and Gynaecology Research* 41(7), pp. 1040-1048. doi: 10.1111/jog.12683

Bayrampour, H. et al. 2016. Pregnancy-related anxiety: a concept analysis. *International Journal of Nursing Studies* 55, pp. 115-130. doi: http://dx.doi.org/10.1016/j.ijnurstu.2015.10.023

Beattie, J. et al. 2017. Effects of mindfulness on maternal stress, depressive symptoms and awareness of present moment experience: a pilot randomised trial. *Midwifery* 50, pp. 174-183. doi: http://dx.doi.org/10.1016/j.midw.2017.04.006

Beddoe, A. E. et al. 2009. The effects of mindfulness-based yoga during pregnancy on maternal psychological and physical distress. *Journal of Obstetric, Gynecologic and Neonatal Nursing* 38(3), pp. 310-319. doi: 10.1111/j.1552-6909.2009.01023.x

Beebe, K. R. et al. 2007. The effects of childbirth self-efficacy and anxiety during pregnancy on prehospitalization labor. *Journal of Obstetric, Gynecologic and Neonatal Nursing* 36(5), pp. 410-418. doi: 10.1111/j.1552-6909.2007.00170.x

Bell, A. F. and Andersson, E. 2016. The birth experience and women's postnatal depression: a systematic review. *Midwifery* 39, pp. 112-123. doi: https://doi.org/10.1016/j.midw.2016.04.014

Benediktsson, I. et al. 2017. Examining the psychometric properties of three standardized screening tools in a pregnant and parenting population. *Maternal and Child Health Journal* 21(2), pp. 253-259. doi: 10.1007/s10995-016-2128-4

Bengtsson, M. 2016. How to plan and perform a qualitative study using content analysis. *NursingPlus Open* 2, pp. 8-14. doi: https://doi.org/10.1016/j.npls.2016.01.001

Bennett, H. A. et al. 2007. Becoming the best mom that I can: women's experiences of managing depression during pregnancy-a qualitative study. *BMC Women's Health* 7, p. 13. doi: 10.1186/1472-6874-7-13

Bennett, I. M. et al. 2008. Efficiency of a two-item pre-screen to reduce the burden of depression screening in pregnancy and postpartum: an IMPLICIT network study. *Journal of American Board of Family Medicine* 21(4), pp. 317-325. doi: 10.3122/jabfm.2008.04.080048

Bennett, I. M. et al. 2009. "One end has nothing to do with the other:" Patient attitudes regarding help seeking intention for depression in gynecologic and obstetric settings. *Archives of Women's Mental Health* 12(5), p. 301. doi: 10.1007/s00737-009-0103-4

Berends, L. 2011. Embracing the visual: using timelines with in-depth interviews on substance use and treatment. *The Qualitative Report* 16(1), pp. 1-9.

Berkman, L. F. et al. 2000. From social integration to health: Durkheim in the new millennium. *Social Science and Medicine* 51, pp. 843-857.

Bernard, K. et al. 1999. *Parent protective factors project (1995-1999), final report*. Seattle, WA: University of Washington.

Betts, J. and Thompson, J. 2017. *Mental health in Northern Ireland: overview, strategies, policies, care pathways, CAMHS and barriers to accessing services*. Available at: http://www.niassembly.gov.uk/globalassets/documents/raise/ publications/2016-2021/2017/health/0817.pdf [Accessed: 8 August 2019].

Beyondblue. 2016. *Emotional health and wellbeing*. Available at: https://healthy families.beyondblue.org.au/pregnancy-and-new-parents/becoming-a-parent-what-to-expect/emotional-health-and-wellbeing [Accessed: 3 August 2017].

Biggs, L. J. et al. 2015. Exploring the views and experiences of callers to the PANDA post and antenatal depression association Australian national perinatal depression helpline: a cross-sectional survey. *BMC Pregnancy and Childbirth* 15(1), p. 209. doi: 10.1186/s12884-015-0594-0

Bilszta, J. L. et al. 2008. Single motherhood versus poor partner relationship: outcomes for antenatal mental health. *Australian and New Zealand Journal of Psychiatry* 42(1), pp. 56-65.

Blackmore, E. R. et al. 2016. Pregnancy-related anxiety: evidence of distinct clinical significance from a prospective longitudinal study. *Journal of Affective Disorders* 197, pp. 251-258. doi: https://doi.org/10.1016/j.jad.2016.03.008

Blanchard, A. et al. 2009. Understanding social support and the couple's relationship among women with depressive symptoms in pregnancy. *Issues in Mental Health Nursing* 30(12), pp. 764-776. doi: 10.3109/01612840903225594

Boath, E. H. et al. 1998. Postnatal depression: the impact on the family. *Journal of Reproductive and Infant Psychology* 16(2-3), pp. 199-203. doi: 10.1080/026468 39808404568

Boots Family Trust Alliance. 2013. *Perinatal mental health experiences of women and professionals*. Available at: http://www.bftalliance.co.uk/wp-content/uploads/2014/ 02/boots-perinatal-mental-health-09-10-13-web.pdf [Accessed: 10 January 2017].

Brandon, A. R. et al. 2012. Proof of concept: partner-assisted Interpersonal Psychotherapy for perinatal depression. *Archives of Women's Mental Health* 15(6), pp. 469-480. doi: 10.1007/s00737-012-0311-1

Brannen, J. 2005. Mixing methods: the entry of qualitative and quantitative approaches into the research process. *International Journal of Social Research Methodology* 8(3), pp. 173-184. doi:10.1080/13645570500154642

Braun, V. and Clarke, V. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology* 3(2), pp. 77-101. doi: 10.1191/1478088706qp063oa

Breedlove, G. and Fryzelka, D. 2011. Depression screening during pregnancy. *Journal of Midwifery and Women's Health* 56(1), pp. 18-25. doi: 10.1111/j.1542-2011. 2010.00002.x

Breustedt, S. and Puckering, C. 2013. A qualitative evaluation of women's experiences of the Mellow Bumps antenatal intervention. *British Journal of Midwifery* 21(3), pp. 187-194.

Brüggmann, D. et al. 2017. Maternal depression research: socioeconomic analysis and density-equalizing mapping of the global research architecture. *Archives of Women's Mental Health* 20(1), pp. 25-37. doi: 10.1007/s00737-016-0669-6

Brugha, T. S. et al. 2016. Can community midwives prevent antenatal depression? An external pilot study to test the feasibility of a cluster randomized controlled universal prevention trial. *Psychological Medicine* 46(2), pp. 345-356. doi: 10.1017/S0033291715001683X

Bryman, A. 2008. *Social research methods*. 3rd ed. New York: Oxford University Press.

Buist, A. et al. 2006. Health professionals' knowledge and awareness of perinatal depression: results of a national survey. *Women and Birth* 19(1), pp. 11-16. doi: http://dx.doi.org/10.1016/j.wombi.2005.12.001

Burnard, P. 1991. A method of analysing interview transcripts in qualitative research. *Nurse Education Today* 11(6), pp. 461-466. doi: https://doi.org/10.1016/0260-6917(91)90009-Y

Burns, A. et al. 2013. A pilot randomised controlled trial of cognitive behavioural therapy for antenatal depression. *BMC Psychiatry* 13(1), p. 33. doi: 10.1186/1471-244x-13-33

Byatt, N. et al. 2012a. Patient, provider, and system-level barriers and facilitators to addressing perinatal depression. *Journal of Reproductive and Infant Psychology* 30(5), pp. 436-449. doi: 10.1080/02646838.2012.743000

Byatt, N. et al. 2012b. Strategies for improving perinatal depression treatment in north American outpatient obstetric settings. *Journal of Psychosomatic Obstetrics and Gynecology* 33(4), pp.143-161. doi: 10.3109/0167482x.2012.728649

Byatt, N. et al. 2013a. Patient's views on depression care in obstetric settings: how do they compare to the views of perinatal health care professionals? *General Hospital Psychiatry* 35(6), pp. 598-604. doi: http://dx.doi.org/10.1016/j.genhosppsych.2013.07.011

Byatt, N. et al. 2013b. Community mental health provider reluctance to provide pharmacotherapy may be a barrier to addressing perinatal depression: a preliminary study. *Psychiatric Quarterly* 84(2), pp. 169-174. doi: 10.1007/s11126-012-9236-0

Byatt, N. et al. 2013c. Women's perspectives on postpartum depression screening in pediatric settings: a preliminary study. *Archives of Women's Mental Health* 16(5), pp. 429-432. doi: 10.1007/s00737-013-0369-4

Byrne, E. et al. 2015. Peer interviewing in medical education research: experiences and perceptions of student interviewers and interviewees. *BMC Research Notes* 8(1), p. 513. doi: 10.1186/s13104-015-1484-2

Byrne, J. et al. 2014. Effectiveness of a mindfulness-based childbirth education pilot study on maternal self-efficacy and fear of childbirth. *Journal of Midwifery and Women's Health* 59(2), pp. 192-197. doi: 10.1111/jmwh.12075

Calderon-Margalit, R. et al. 2009. Risk of preterm delivery and other adverse perinatal outcomes in relation to maternal use of psychotropic medications during pregnancy. *American Journal of Obstetrics and Gynecology* 201(6), pp. 579.e1-8. doi: https://doi.org/10.1016/j.ajog.2009.06.061

Calix, A. R. 2004. *Is the ecomap a valid and reliable social work tool to measure social support?* MSc Dissertation, Louisiana State University and Agricultural and Mechanical College.

Cardone, I. A. et al. 2006. Psychosocial assessment by phone for high-scoring patients taking the Edinburgh Postnatal Depression Scale: communication pathways and strategies. *Archives of Women's Mental Health* 9(2), pp. 87-94. doi: 10.1007/s00737-005-0110-z

Chenhall, R. et al. 2011. Negotiating human research ethics: case notes from anthropologists in the field. *Anthropology Today* 27(5), pp. 13-17. doi: doi:10.1111/j.1467-8322.2011.00827.x

Chisholm, A. et al. 2016. Motivational interviewing-based training enhances clinicians' skills and knowledge in psoriasis: findings from the Pso Well (R) study. *British Journal of Dermatology* 176(3), pp. 677-686. doi: 10.1111/bjd.14837

Cochrane. 2017. *About Cochrane Systematic Reviews*. Available at: http://www.cochranelibrary.com/about/about-cochrane-systematic-reviews.html [Accessed: 18 May 2017].

Coe, C. and Barlow, J. 2013. Supporting women with perinatal mental health problems: the role of the voluntary sector. *Community Practitioner* 86(2), pp. 23-27.

Cohen, S. 1988. Psychosocial models of the role of social support in the etiology of physical disease. *Health Psychology* 7(3), pp. 269-297.

Cooper, P. and Murray, L. 1997. Prediction, detection, and treatment of postnatal depression. *Archives of Disease in Childhood* 77(2), pp. 97-99. doi: 10.1136/adc.77.2.97

Cox, J. L. et al. 1987. Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. *The British Journal of Psychiatry* 150(6), pp. 782-786. doi: 10.1192/bjp.150.6.782

Cox, J. and Holden, J. 2003. *Perinatal mental health: a guide to the Edinburgh Postnatal Depression Scale (EPDS)*. London: Gaskell.

Creswell, J. W. 2014. *Research design: qualitative, quantitative and mixed methods approaches*. 4th ed. London: Sage Publications Ltd.

Cronin, A. 2016. Focus groups. In: Gilbert, N. and Stoneman, P. eds. *Researching social life*. 4th ed. London: Sage Publications Ltd, pp 301-318.

Culhane, J. F. et al. 2001. Maternal stress is associated with bacterial vaginosis in human pregnancy. *Maternal and Child Health Journal* 5(2), pp. 127-134.

D'Souza, R. 2013. Caesarean section on maternal request for non-medical reasons: putting the UK National Institute of Health and Clinical Excellence guidelines in perspective. *Best Practice and Research Clinical Obstetrics and Gynaecology* 27(2), pp. 165-177. doi: 10.1016/j.bpobgyn.2012.09.006

Darwin, Z. et al. 2015. Antenatal mental health referrals: review of local clinical practice and pregnant women's experiences in England. *Midwifery* 31(3), pp. e17-e22. doi: http://dx.doi.org/10.1016/j.midw.2014.11.004

Darwin, Z. et al. 2016. Identification of women at risk of depression in pregnancy: using women's accounts to understand the poor specificity of the Whooley and Arroll case finding questions in clinical practice. *Archives of Women's Mental Health* 19(1), pp. 41-49. doi: 10.1007/s00737-015-0508-1

Davies, L. et al. 2016. Developing a perinatal mental health module: an integrated care approach. *British Journal of Midwifery* 24(2), pp. 118-121. doi: 10.12968/bjom.2016.24.2.118

Davis, K. et al. 2015. A randomized controlled trial of yoga for pregnant women with symptoms of depression and anxiety. *Complementary Therapies in Clinical Practice* 21(3), pp. 166-172. doi: http://dx.doi.org/10.1016/j.ctcp.2015.06.005

Dennis, C. L. 2004. Influence of depressive symptomatology on maternal health service utilization and general health. *Archives of Women's Mental Health* 7(3), pp. 183-191. doi: 10.1007/s00737-004-0053-9

Dennis, C. L. et al. 2017. Prevalence of antenatal and postnatal anxiety: systematic review and meta-analysis. *British Journal of Psychiatry* 210(5), p. 315. doi: 10.1192/bjp.bp.116.187179

Department of Health. 2016. *Creating a better future together: national maternity strategy 2016-2026*. Available at: https://health.gov.ie/blog/publications/national-maternity-strategy-creating-a-better-future-together-2016-2026/ [Accessed: 20 August 2019].

DeSocio, J. E. 2019. Reprint of "Epigenetics, maternal prenatal psychosocial stress, and infant mental health". *Archives of Psychiatric Nursing* 33(3), pp. 232-237. doi: 10.1016/j.apnu.2019.05.001

Deutsch, C. P. 1981. The behavioral scientist: insider and outsider. *Journal of Social Issues* 37(2), pp. 172-191. doi: 10.1111/j.1540-4560.1981.tb02631.x

Di Lemma, L. C. G. et al. 2019. *Responding to adverse childhood experiences: an evidence review of interventions to prevent and address adversity across the life course.* Wrexham: Public Health Wales, Cardiff and Bangor University.

Dimidjian, S. et al. 2017. A pragmatic randomized clinical trial of behavioral activation for depressed pregnant women. *Journal of Consulting and Clinical Psychology* 85(1), pp. 26-36. doi: 10.1037/ccp0000151

Dornelas, E. A. et al. 2010. A pilot study of affect-focused psychotherapy for antepartum depression. *Journal of psychotherapy integration* 20(4), p. 364.

Dotson, C. L. et al. 2017. Normal anxiety of pregnancy. *International Journal of Childbirth Education* 32(1), pp. 13-15.

Dunn, C. et al. 2012. Mindful pregnancy and childbirth: effects of a mindfulness-based intervention on women's psychological distress and well-being in the perinatal period. *Archive of Women's Mental Health* 15(2), pp. 139-143. doi: 10.1007/s00737-012-0264-4

Dunst, C. J. et al. 1994. *Supporting and strengthening families, Vol. 1: methods, strategies and practices.* Cambridge, MA: Brookline Books.

Eberhard-Gran, M. et al. 2001. Review of validation studies of the Edinburgh Postnatal Depression Scale. *Acta Psychiatrica Scandinavica* 104(4), pp. 243-249.

Edge, D. 2006. Perinatal depression: its absence among Black Caribbean women. *British Journal of Midwifery* 14(11), pp. 646-652.

Edge, D. 2010. Falling through the net - black and minority ethnic women and perinatal mental healthcare: health professionals' views. *General Hospital Psychiatry* 32(1), pp. 17-25. doi: 10.1016/j.genhosppsych.2009.07.007

Edge, D. 2011. 'It's leaflet, leaflet, leaflet then, "see you later": black Caribbean women's perceptions of perinatal mental health care. *British Journal of General Practice* 61(585), pp. 256-262. doi: 10.3399/bjgp11X567063

Edwards, B. et al. 2008. Antenatal psychosocial risk factors and depression among women living in socioeconomically disadvantaged suburbs in Adelaide, South Australia. *Australian and New Zealand Journal of Psychiatry* 42(1), pp. 45-50. doi: 10.1080/00048670701732673

El-Den, S. et al. 2015. A systematic review on the acceptability of perinatal depression screening. *Journal of Affective Disorders* 188, pp. 284-303. doi: http://dx.doi.org/10.1016/j.jad.2015.06.015

Elwood, S. A. and Martin, D. G. 2000. "Placing" interviews: location and scales of power in qualitative research. *The Professional Geographer* 52(4), pp. 649-657. doi: doi:10.1111/0033-0124.00253

Emmanuel, E. et al. 2012. Relationship between social support and quality of life in childbearing women during the perinatal period. *Journal of Obstetric, Gynecologic, and Neonatal Nursing* 41(6), pp. e62-e70. doi:10.1111/j.1552-6909.2012.01400.x

Evans, E. C. and Bullock, L. F. C. 2012. Optimism and other psychosocial influences on antenatal depression: a systematic review. *Nursing and Health Sciences* 14(3), pp. 352-361. doi: 10.1111/j.1442-2018.2012.00700.x

Evans, J. et al. 2001. Cohort study of depressed mood during pregnancy and after childbirth. *British Medical Journal* 323(7307), pp. 257-260. doi: 10.1136/bmj.323. 7307.257

Evans, K. et al. 2017. Women's views on anxiety in pregnancy and the use of anxiety instruments: a qualitative study. *Journal of Reproductive and Infant Psychology* 35(1), pp. 77-90. doi: 10.1080/02646838.2016.1245413

Evans, K. 2018. *Supporting women with mild to moderate anxiety during pregnancy; the development of an intervention to be facilitated by midwives.* PhD Thesis, The University of Nottingham.

Fairbrother, N. et al. 2015. Depression and anxiety during the perinatal period. *BMC Psychiatry* 15, p. 206. doi: 10.1186/s12888-015-0526-6

Field, T. et al. 2013a. Peer support and interpersonal psychotherapy groups experienced decreased prenatal depression, anxiety and cortisol. *Early Human Development* 89(9), pp. 621-624. doi: http://dx.doi.org/10.1016/j.earlhumdev. 2013.04.006

Field, T. et al. 2013b. Yoga and social support reduce prenatal depression, anxiety and cortisol. *Journal of Bodywork and Movement Therapies* 17(4), pp. 397-403. doi: http://dx.doi.org/10.1016/j.jbmt.2013.03.010

Field, T. et al. 2013c. Tai chi/yoga reduces prenatal depression, anxiety and sleep disturbances. *Complementary Therapies in Clinical Practice* 19(1), pp. 6-10. doi: http://dx.doi.org/10.1016/j.ctcp.2012.10.001

Fineberg, A. M. et al. 2016. Fetal exposure to maternal stress and risk for schizophrenia spectrum disorders among offspring: differential influences of fetal sex. *Psychiatry Research* 236, pp. 91-97. doi: http://dx.doi.org/10.1016/j.psychres.2015. 12.026

Flynn, H. A. et al. 2011. Comparative performance of the Edinburgh Postnatal Depression Scale and the Patient Health Questionnaire-9 in pregnant and postpartum women seeking psychiatric services. *Psychiatry Research* 187(1-2), pp. 130-134. doi: http://dx.doi.org/10.1016/j.psychres.2010.10.022

Fone, D. et al. 2014. Effect of neighbourhood deprivation and social cohesion on mental health inequality: a multilevel population-based longitudinal study. *Psychological Medicine* 44(11), pp. 2449-2460. doi: 10.1017/S0033291713003255

Fraser, D. et al. 2009. *A textbook for midwives*. 15th ed. Edinburgh and New York: Churchill Livingstone.

Furber, C. M. et al. 2009. A qualitative study of mild to moderate psychological distress during pregnancy. *International Journal of Nursing Studies* 46(5), pp. 669-677. doi: http://dx.doi.org/10.1016/j.ijnurstu.2008.12.003

Gagnon, M. et al. 2015. Locating the qualitative interview: reflecting on space and place in nursing research. *Journal of Research in Nursing* 20(3), pp. 203-215. doi: 10.1177/1744987114536571

Gallagher, M. W. 2012. Encyclopedia of human behavior. In: *Neuroscience and biobehavioral psychology*. 2nd ed. pp. 314-320. Available at: https://doi-org.ac.uk /10.10 16/B978-0-12-375000-6.00312-8 [Accessed: 9 May 2020].

Gallo, A. et al. 2012. What is the role and authority of gatekeepers in cluster randomized trials in health research? *Trials* 13(1), p. 116. doi: 10.1186/1745-6215-13-116

Gaston, A. and Prapavessis, H. 2013. Tired, moody and pregnant? Exercise may be the answer. *Psychology and Health* 28(12), pp. 1353-1369. doi: 10.1080/08870446. 2013.809084

Gavin, N. I. et al. 2005. Perinatal depression: a systematic review of prevalence and incidence. *Obstetrics and Gynecology* 106(5), pp. 1071-1083. doi: 10.1097/ 01.AOG.0000183597.31630.db

Gawley, L. et al. 2011. Stigma and attitudes towards antenatal depression and antidepressant use during pregnancy in healthcare students. *Advances in Health Sciences Education* 16(5), pp. 669-679. doi: 10.1007/s10459-011-9289-0

Gaynes, B. N. et al. 2005. Perinatal depression: prevalence, screening accuracy, and screening outcomes. *Evidence Reports/Technology Assessments* (119), pp. 1-8.

Geller, E. J. et al. 2009. Neonatal outcomes associated with planned vaginal versus planned primary cesarean delivery. *Journal of Perinatology* 30, p. 258. doi: 10.1038/ jp.2009.150

Gibson, J. et al. 2009. A systematic review of studies validating the Edinburgh Postnatal Depression Scale in antepartum and postpartum women. *Acta Psychiatrica Scandinavica* 119(5), pp. 350-364. doi: 10.1111/j.1600-0447.2009.01363.x

Gilbert, N. 2008. *Researching social life*. 3rd edition ed. London: Sage Publications Ltd.

Glazier, R. H. et al. 2004. Stress, social support, and emotional distress in a community sample of pregnant women. *Journal of Psychosomatic Obstetrics and Gynecology* 25(3-4), pp. 247-255. doi: 10.1080/01674820400024406

Glover, V. 2014. Maternal depression, anxiety and stress during pregnancy and child outcome; what needs to be done. *Best Practice and Research Clinical Obstetrics and Gynaecology* 28(1), pp. 25-35. doi: http://dx.doi.org/10.1016/j.bpobgyn.2013.08.017

Glover, V. and Barlow, J. 2014. Psychological adversity in pregnancy: what works to improve outcomes? *Journal of Children's Services* 9(2), pp. 96-108.

Goodman, E. et al. 2001. Adolescents' perceptions of social status: development and evaluation of a new indicator. *Pediatrics* 108(2), p. e31. doi: 10.1542/peds.108.2.e31

Goodman, J. H. 2009. Women's attitudes, preferences, and perceived barriers to treatment for perinatal depression. *Birth: Issues in Perinatal Care* 36(1), pp. 60-69. doi: 10.1111/j.1523-536X.2008.00296.x

Goodman, J. H. and Tyer-Viola, L. 2010. Detection, treatment, and referral of perinatal depression and anxiety by obstetrical providers. *Journal of Women's Health* 19(3), pp. 477-490. doi: 10.1089/jwh.2008.1352

Goodman, J. H. et al. 2014. CALM Pregnancy: results of a pilot study of mindfulness-based cognitive therapy for perinatal anxiety. *Archive of Women's Mental Health* 17(5), pp. 373-387. doi: 10.1007/s00737-013-0402-7

Goodwin, R. D. et al. 2017. Smoking during pregnancy in the United States, 2005–2014: the role of depression. *Drug and Alcohol Dependence* 179, pp. 159-166. doi: https://doi.org/10.1016/j.drugalcdep.2017.06.021

Grajkowski, A. M. et al. 2017. The pregnancy "super-utilizer": how does a high-risk depression screen affect medical utilization? *The Journal of Maternal-Fetal and Neonatal Medicine* 30(10), pp. 1167-1171. doi: 10.1080/14767058.2016.1208743

Graneheim, U. H. and Lundman, B. 2004. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today* 24(2), pp. 105-112. doi: https://doi.org/10.1016/j.nedt.2003.10.001

Grant, A. et al. 2018. 'People try and police your behaviour': the impact of surveillance on mothers and grandmothers' perceptions and experiences of infant feeding. *Families, Relationships and Societies* 7(3), pp. 431-447. doi: https://doi.org/10.1332/204674317X 14888886530223

Grant, A. et al. 2019. Understanding health behaviour in pregnancy and infant feeding intentions in low-income women from the UK through qualitative visual methods and application to the COM-B (Capability, Opportunity, Motivation-Behaviour) model. *BMC Pregnancy and Childbirth* 19(1), p. 56. doi: 10.1186/s12884-018-2156-8

Grant, K. et al. 2008. Maternal anxiety during the transition to parenthood: a prospective study. *Journal of Affective Disorders* 108(1-2), pp. 101-111. doi: http://dx.doi.org/10.1016/j.jad.2007.10.002

Granville, G. et al. 2016. *Everyone's business campaign independent evaluation report.* Available at: https://maternalmentalhealthalliance.org/campaign/e-bulletins/ [Accessed: 12 April 2017].

Green, S. M. et al. 2015. Cognitive-behavioral group treatment for perinatal anxiety: a pilot study. *Archives of Women's Mental Health* 18(4), pp. 631-638. doi: 10.1007/s 00737-015-0498-z

Gregory, D. et al. 1997. Beyond textual perfection: transcribers as vulnerable persons. *Qualitative Health Research* 7(2), pp. 294-300. doi: 10.1177/104973239700700209

Grote, N. K. et al. 2009. A randomized controlled trial of culturally relevant, brief interpersonal psychotherapy for perinatal depression. *Psychiatric Services* 60(3), pp. 313-321. doi: 10.1176/ps.2009.60.3.313

Grote, N. K. et al. 2010. A meta-analysis of depression during pregnancy and the risk of preterm birth, low birth weight, and intrauterine growth restriction. *Archives of General Psychiatry* 67(10), pp. 1012-1024. doi: 10.1001/archgenpsychiatry.2010.111

Grote, N. K. et al. 2015. Collaborative care for perinatal depression in socioeconomically disadvantaged women: a randomized trial. *Depression and Anxiety* 32(11), pp. 821-834. doi: 10.1002/da.22405

Guardino, C. M. et al. 2014. Randomised controlled pilot trial of mindfulness training for stress reduction during pregnancy. *Psychology and Health* 29, doi: 10.1080/08 870446.2013.852670

Gunning, M. D. et al. 2010. Assessing maternal anxiety in pregnancy with the State-Trait Anxiety Inventory (STAI): issues of validity, location and participation. *Journal of Reproductive and Infant Psychology* 28(3), pp. 266-273. doi: 10.1080/02646830 903487300

Habel, C. et al. 2015. Causes of women's postpartum depression symptoms: men's and women's perceptions. *Midwifery* 31(7), pp. 728-734. doi: 10.1016/j.midw.2015. 03.007

Haberer, J. E. et al. 2013. Furthering the reliable and valid measurement of mental health screening, diagnoses, treatment and outcomes through health information technology. *General Hospital Psychiatry* 35(4), pp. 349-353. doi: http://dx.doi.org/10. 1016/j.genhosppsych.2013.03.009

Haines, H. M. et al. 2012. The influence of women's fear, attitudes and beliefs of childbirth on mode and experience of birth. *BMC Pregnancy and Childbirth* 12(1), p. 55. doi: 10.1186/1471-2393-12-55

Harvey, S. T. et al. 2012. Evaluating the clinical efficacy of a primary care-focused, nurse-led, consultation liaison model for perinatal mental health. *International Journal of Mental Health Nursing* 21(1), pp. 75-81. doi: 10.1111/j.1447-0349.2011.00766.x

Hauck, Y. L. et al. 2015. Australian midwives' knowledge, attitude and perceived learning needs around perinatal mental health. *Midwifery* 31(1), pp. 247-255. doi: http://dx.doi.org/10.1016/j.midw.2014.09.002

Hay, D. F. et al. 2008. Antepartum and postpartum exposure to maternal depression: different effects on different adolescent outcomes. *Journal of Child Psychology and Psychiatry* 49(10), pp. 1079-1088. doi: 10.1111/j.1469-7610.2008.01959.x

Hayes, B. A. 2010. From 'postnatal depression' to 'perinatal anxiety and depression': key points of the National Perinatal Depression Plan for nurses and midwives in Australian primary health care settings. *Contemporary Nurse: A Journal for the Australian Nursing Profession* 35(1), pp. 58-67. doi: 10.5172/conu.2010.35.1.058

Health and Care Research Wales. 2018. *Public involvement, participation and engagement.* Available at: https://www.healthandcareresearch.gov.wales/public-engagement-involvement-and-participation/ [Accessed: 20 May 2018].

Health Research Authority. 2017. Applying a proportionate approach to the process of seeking consent. Policy and Public Affairs Directorate.

Healthwatch England. 2019. *Mental health and the journey to parenthood.* Online: England, H. Available at: https://www.healthwatch.co.uk/mental-health-and-journey-parenthood [Accessed: 10 December 2019].

Henderson, J. et al. 2013. Experiencing maternity care: the care received and perceptions of women from different ethnic groups. *BMC Pregnancy Childbirth* 13, p. 196. doi: 10.1186/1471-2393-13-196

Henderson, J. et al. 2018. Care and self-reported outcomes of care experienced by women with mental health problems in pregnancy: findings from a national survey. *Midwifery* 56, pp. 171-178. doi: 10.1016/j.midw.2017.10.020

Henderson, J. and Redshaw, M. 2013. Anxiety in the perinatal period: antenatal and postnatal influences and women's experience of care. *Journal of Reproductive and Infant Psychology* 31(5), pp. 465-478. doi: 10.1080/02646838.2013.835037

Henderson, J. and Redshaw, M. 2016. Worries about labor and birth: a population-based study of outcomes for young primiparous women. *Birth: Issues in Perinatal Care* 43(2), pp. 151-158. doi: 10.1111/birt.12219

Heron, J. et al. 2004. The course of anxiety and depression through pregnancy and the postpartum in a community sample. *Journal of Affective Disorders* 80(1), pp. 65-73. doi: http://dx.doi.org/10.1016/j.jad.2003.08.004

Higgins, A. et al. 2016a. Impact of perinatal mental health education on student midwives' knowledge, skills and attitudes: a pre/post evaluation of a module of study. *Nurse Education Today* 36, pp. 364-369. doi: http://dx.doi.org/10.1016/j.nedt. 2015. 09.007

Higgins, A. et al. 2016b. Mothers with mental health problems: contrasting experiences of support within maternity services in the Republic of Ireland. *Midwifery* 36, pp. 28-34. doi: 10.1016/j.midw.2016.02.023

Higgins, A. et al. 2018. Barriers to midwives and nurses addressing mental health issues with women during the perinatal period: the Mind Mothers study. *Journal of Clinical Nursing* 27(9/10), pp. 1872-1883. doi: 10.1111/jocn.14252

Holcomb, W. L. et al. 1996. Screening for depression in pregnancy: characteristics of the Beck Depression Inventory. *Obstetrics and Gynecology* 88(6), pp. 1021-1025.

Howard, M. M. et al. 2017. Peripartum depression: early recognition improves outcomes. *Cleveland Clinic Journal of Medicine* 84(5), pp. 388-396. doi: 10.3949/ccjm.84a.14060

Hughson, J. et al. 2018. The rise of pregnancy apps and the implications for culturally and linguistically diverse women: narrative review. *JMIR MHealth and UHealth* 6(11), p e189. doi: 10.2196/mhealth.9119

Hunt, S. C. 2004. *Poverty, pregnancy and the healthcare professional*. Edinburgh: Books for midwives.

IBM Corp. Released 2017. *IBM SPSS Statistics fro Windows, Version 25.0*. NY:IBM Corp.

Isa Alfaraj, A. M. A. et al. 2009. Positive beliefs about rumination in depressed and non-depressed pregnant women: a preliminary investigation. *Journal of Reproductive and Infant Psychology* 27(1), pp. 54-60. doi:10.1080/02646830701759678

Jablensky, A. V. et al. 2005. Pregnancy, delivery, and neonatal complications in a population cohort of women with schizophrenia and major affective disorders. *American Journal of Psychiatry* 162(1), pp. 79-91. doi: 10.1176/appi.ajp.162.1.79

Janssen, A. B. et al. 2016. A role for the placenta in programming maternal mood and childhood behavioural disorders. *Journal of Neuroendocrinology* 28(8). doi:10.1111/jne.12373

Janssen, A. B. et al. 2018. Persistence of anxiety symptoms after elective caesarean delivery. *British Journal of Psychiatry* 4(5), pp. 354-360. doi: 10.1192/bjo.2018.48

Jarrett, P. 2014. Attitudes of student midwives caring for women with perinatal mental health problems. *British Journal of Midwifery* 22(10), pp. 718-724.

Jarrett, P. 2015. Student midwives' knowledge of perinatal mental health. *British Journal of Midwifery* 23(1), pp. 32-39.

Jesse, D. E. et al. 2008. Barriers to seeking help and treatment suggestions for prenatal depressive symptoms: focus groups with rural low-income women. *Issues in Mental Health Nursing* 29(1), pp. 3-19. doi: 10.1080/01612840701748664

Jesse, D. E. et al. 2014. Social support and self-esteem as mediators between stress and antepartum depressive symptoms in rural pregnant women. *Research in Nursing and Health* 37(3), pp. 241-252. doi: 10.1002/nur.21600

Jesse, D. E. et al. 2015. Performance of a culturally tailored cognitive-behavioral intervention integrated in a public health setting to reduce risk of antepartum depression: a randomized controlled trial. *Journal of Midwifery and Women's Health* 60(5), pp. 578-592. doi: 10.1111/jmwh.12308

Joffres, M. et al. 2013. Recommendations on screening for depression in adults. *Canadian Medical Association Journal* 185(9), pp. 775-782. doi: 10.1503/cmaj. 130403

Johnson, B. R. et al. 2007. Toward a definition of mixed methods research. *Journal of Mixed Methods Research* 1(2), pp. 112-133. doi: 10.1177/1558689806298224

Johnson, R. and Slade, P. 2002. Does fear of childbirth during pregnancy predict emergency caesarean section? *BJOG: an International Journal of Obstetrics Gynaecology* 109(11), pp. 1213-1221. doi: 10.1046/j.1471-0528.2002.01351.x

Johnson, R. B. and Onwuegbuzie, A. J. 2004. Mixed methods research: a research paradigm whose time has come. *Educational Researcher* 33(7), pp. 14-26. doi: 10.3102/0013189x033007014

Jomeen, J. et al. 2009. Midwives' illness perceptions of antenatal depression. *British Journal of Midwifery* 17(5), pp. 296-303.

Jomeen, J. et al. 2013. Assessing women's perinatal psychological health: exploring the experiences of health visitors. *Journal of Reproductive and Infant Psychology* 31(5), pp. 479-489. doi: 10.1080/02646838.2013.835038

Jomeen, J. and Martin, C. R. 2005. Self-esteem and mental health during early pregnancy. *Clinical Effectiveness in Nursing* 9(1-2), pp. 92-95. doi: http://dx.doi.org/10.1016/j.cein.2004.09.001

Jones, C. J. et al. 2011. Australian midwives' knowledge of antenatal and postpartum depression: a national survey. *Journal of Midwifery and Women's Health* 56(4), pp. 353-361. doi: 10.1111/j.1542-2011.2011.00039.x

Jones, C. J. et al. 2012. Australian midwives' awareness and management of antenatal and postpartum depression. *Women and Birth* 25(1), pp. 23-28. doi: http://dx.doi.org/10.1016/j.wombi.2011.03.001

Jonsdottir, S. S. et al. 2017. Partner relationship, social support and perinatal distress among pregnant Icelandic women. *Women and Birth* 30(1), pp. e46-e55. doi: 10.1016/j.wombi.2016.08.005

Keefe, R. H. et al. 2016. Addressing access barriers to services for mothers at risk for perinatal mood disorders: a social work perspective. *Social Work in Health Care* 55(1), pp. 1-11. doi: 10.1080/00981389.2015.1101045

Keenan, K. et al. 2014. Association between fatty acid supplementation and prenatal stress in African Americans: a randomized controlled trial. *Obstetrics and Gynecology* 124(6), pp. 1080-1087. doi: 10.1097/aog.0000000000000559

Kershaw, A. 2019. More than half of young people now going to university, figures show. *Independent. 27 September*. Available at: https://www.independent.co.uk/ne ws/education/education-news/university-students-young-people-over-half-first-time-a9122321.html

Khan, L. 2015. *Falling through the gaps: perinatal mental health and general practice*. Available at: https://www.centreformentalhealth.org.uk/falling-through-the-gaps [Accessed: 11 January 2017].

Kim, D. R. et al. 2014. Computer-assisted cognitive behavioral therapy for pregnant women with major depressive disorder. *Journal of Women's Health* 23(10), pp. 842-848. doi: 10.1089/jwh.2014.4867

Kim, H. et al. 2007. Automated depression screening in disadvantaged pregnant women in an urban obstetric clinic. *Archives of Women's Mental Health* 10(4), pp. 163-169. doi: 10.1007/s00737-007-0189-5

Kim, J. J. et al. 2010. Barriers to mental health treatment among obstetric patients at risk for depression. *American Journal of Obstetrics and Gynecology* 202(3), pp. 312. e311-312.e5. doi: http://dx.doi.org/10.1016/j.ajog.2010.01.004

Kim, M. and Mallory, C. 2017. *Statistics for evidence-based practice in nursing*. 2nd ed. United States of America: Jones and Bartlett learning.

King, L. et al. 2012. Screening for antenatal psychological distress. *British Journal of Midwifery* 20(6), pp. 396-401.

Kingston, D. et al. 2014. Public views of acceptability of perinatal mental health screening and treatment preference: a population based survey. *BMC Pregnancy and Childbirth* 14(1), p. 67. doi: 10.1186/1471-2393-14-67

Kingston, D. E. et al. 2015a. Preferences for mental health screening among pregnant women: a cross-sectional study. *American Journal of Preventive Medicine* 49(4), pp. e35-e43. doi: http://dx.doi.org/10.1016/j.amepre.2015.03.026

Kingston, D. E. et al. 2015b. Disclosure during prenatal mental health screening. *Journal of Affective Disorders* 186, pp. 90-94. doi: http://dx.doi.org/10.1016/j.jad. 2015.07.003

Kingston, D. et al. 2015c. Pregnant women's perceptions of harms and benefits of mental health screening. *Plos One* 10(12), p. e0145189. doi: 10.1371/journal.pone.0145189

Kingston, D. et al. 2015d. Barriers and facilitators of mental health screening in pregnancy. *Journal of Affective Disorders* 186, pp. 350-357. doi: http://dx.doi.org/10.1016/j.jad.2015.06.029

Kingston, D. et al. 2017. Pregnant women's views on the feasibility and acceptability of web-based mental health e-screening versus paper-based screening: a randomized controlled trial. *Journal of Medical Internet Research* 19(4), p. e88. doi: 10.2196/jmir.6866

Kinsella, M. T. and Monk, C. 2009. Impact of maternal stress, depression and anxiety on fetal neurobehavioral development. *Clinical Obstetrics and Gynecology* 52(3), pp. 425-440. doi: 10.1097/GRF.0b013e3181b52df1

Kinser, P. and Masho, S. 2015. "Yoga was my saving grace": the experience of women who practice prenatal yoga. *Journal of the American Psychiatric Nurses Association* 21(5), pp. 319-326. doi: 10.1177/1078390315610554

Kirby, C. A. 2015. *Prenatal anxiety and cesarean delivery in a clinic population*. Available at: http://uknowledge.uky.edu/dnp_etds/39 [Accessed: 24 April 2017].

Kline, P. 2013. *Handbook of Psychological Testing*. Routledge Ltd - M.U.A.

Knight, M. et al. 2015. *Saving lives, improving mothers' care - surveillance of maternal deaths in the UK 2011–13 and lessons learned to inform maternity care from the UK and Ireland confidential enquiries into maternal deaths and morbidity 2009–13*. Oxford: NPEU.

Knight, M. et al. 2019. *Saving lives, improving mothers' care: lessons learned to inform maternity care from the UK and Ireland confidential enquiries into maternal deaths and morbidity 2015-17*. Available at: https://www.npeu.ox.ac.uk/mbrrace-uk [Accessed: 2 December 2019].

Kopelman, R. C. et al. 2008. Barriers to care for antenatal depression. *Psychiatric Services* 59(4), pp. 429-432. doi: 10.1176/ps.2008.59.4.429

Kozinszky, Z. and Dudas, R. B. 2015. Validation studies of the Edinburgh Postnatal Depression Scale for the antenatal period. *Journal of Affective Disorders* 176, pp. 95-105. doi: http://dx.doi.org/10.1016/j.jad.2015.01.044

Kroenke, K. et al. 2007. Anxiety disorders in primary care: prevalence, impairment, comorbidity, and detection. *Annals of Internal Medicine* 146(5), pp. 317-325. doi: 10.7326/0003-4819-146-5-200703060-00004

Lalor, J. G. et al. 2006. Exploring painful experiences: impact of emotional narratives on members of a qualitative research team. *Journal of Advanced Nursing* 56(6), pp. 607-616. doi: 10.1111/j.1365-2648.2006.04039.x

Larkin, V. et al. 2014. Exploring maternal perinatal mental health using a blended learning package. *British Journal of Midwifery* 22(3), pp. 210-217.

Larsson, M. 2009. A descriptive study of the use of the internet by women seeking pregnancy-related information. *Midwifery* 25(1), pp. 14-20. doi: 10.1016/j.midw. 2007.01.010

Lavender, T. J. et al. 2016. An evaluation of perinatal mental health interventions: an integrative literature review. *Women and Birth* 29(5), pp. 399-406. doi: 10.1016/j.wombi.2016.04.004

Leach, L. S. et al. 2017. Maternal perinatal anxiety: a review of prevalence and correlates. *Clinical Psychologist* 21(1), pp. 4-19. doi: 10.1111/cp.12058

Ledward, A. 2011. Informed consent: ethical issues for midwife research. *Evidence Based Midwifery* 9(1), pp. 23-29.

Lee King, P. A. 2014. Cultural differences in perinatal experiences for women with low socioeconomic status. *Health and Social Work* 39(4), pp. 211-220. doi: hsw/hlu028
Lees, S. et al. 2009. Professionals' knowledge of perinatal mental health care. *Mental Health Practice* 13(4), pp. 24-27.

Legere, L. E. et al. 2017. Approaches to health-care provider education and professional development in perinatal depression: a systematic review. *BMC Pregnancy and Childbirth* 17(1), p. 239. doi: 10.1186/s12884-017-1431-4

Leigh, B. and Milgrom, J. 2007. Acceptability of antenatal screening for depression in routine antenatal care. *Australian Journal of Advanced Nursing* 24(3), pp. 14-18.

Lenze, S. N. et al. 2015. A pilot, exploratory report on dyadic interpersonal psychotherapy for perinatal depression. *Archive of Women's Mental Health* 18(3), pp. 485-491. doi: 10.1007/s00737-015-0503-6

Lenze, S. N. and Potts, M. A. 2017. Brief interpersonal psychotherapy for depression during pregnancy in a low-income population: a randomized controlled trial. *Journal of Affective Disorders* 210, pp. 151-157. doi: http://dx.doi.org/10.1016/j.jad.2016.12.029

Lieberman, K. et al. 2014. A systematic review of perinatal depression interventions for adolescent mothers. *Journal of Adolescence* 37(8), pp. 1227-1235. doi: http://dx.doi.org/10.1016/j.adolescence.2014.08.004

Living life to the full. 2019. *Enjoy your bump.* Available at: https://llttf.com/home/enjoy-series/enjoy-your-bump-2/ [Accessed: 16 May 2017].

Logsdon, M. C. et al. 2009. Barriers to depression treatment in low-income, unmarried, adolescent mothers in a southern, urban area of the United States. *Issues in Mental Health Nursing* 30(7), pp. 451-455. doi: 10.1080/0161284090272 2187

Londono Tobon, A. et al. 2016. Effects of maternal prenatal stress: mechanisms, implications, and novel therapeutic interventions. *Biological Psychiatry* 80(11), pp. e85-e87. doi: 10.1016/j.biopsych.2016.09.011

Loughnan, S. A. et al. 2019. A randomized controlled trial of 'MUMentum Pregnancy': internet-delivered cognitive behavioral therapy program for antenatal anxiety and depression. *Journal of Affective Disorders* 243, pp. 381-390. doi: https://doi.org/10.1016/j.jad.2018.09.057

Luo, L. 1999. Personal or environmental causes of happiness: a longitudinal analysis. *The Journal of Social Psychology* 139(1), pp. 79-90.

Maddux, J. E. and Kleiman, E. M. 2016. Self-efficacy: a foundational concept for positive clinical psychology. In: Wood, A. M. and Johnson, J. eds. *The Wiley handbook of positive clinical psychology*. 1st ed. Sussex: Wiley Blackwell, pp. 89-101.

Malvin, J. H. and Moskowitz, J. M. 1983. Anonymous versus identifiable self-reports of adolescent drug attitudes, intentions, and use. *Public Opinion Quarterly* 47(4), pp. 557-566. doi: 10.1086/268812

Manber, R. et al. 2010. Acupuncture for depression during pregnancy a randomized controlled trial. *Obstetrics and Gynecology* 115(3), pp. 511-520. doi: 10.1097/AOG.0b013e3181cc0816

Mann, R. et al. 2012. Diagnostic accuracy of case-finding questions to identify perinatal depression. *Canadian Medical Association Journal* 184(8), pp. e424-e430. doi: 10.1503/cmaj.111213

Mannay, D. 2010. Making the familiar strange: can visual research methods render the familiar setting more perceptible? *Qualitative Research* 10, pp. 91-111. doi: 10.1177/1468794109348684

Mannay, D. 2016. *Visual, narrative and creative research methods: application, reflection and ethics*. 1st ed. Oxford: Routledge.

Marcano-Belisario, J. S. et al. 2016. Tablet computers for implementing NICE antenatal mental health guidelines: protocol of a feasibility study. *BMJ Open* 6(1), pp 1-7. doi: 10.1136/bmjopen-2015-009930

Marshall, J. and Raynor, M. 2014. *Myles Textbook for Midwives*. 16th ed. London: Churchill Livingstone Elsevier.

Martini, J. et al. 2010. Anxiety disorders before birth and self-perceived distress during pregnancy: associations with maternal depression and obstetric, neonatal and early childhood outcomes. *Early Human Development* 86(5), pp. 305-310. doi: http://doi.org/10.1016/j.earlhumdev.2010.04.004

Maternal Mental Health Alliance. 2015. *Specialist community perinatal mental health teams (provision in 2015).* Available at: https://maternalmentalhealthalliance.org/campaign/maps/ [Accessed: 16 May 2017].

Maternal Mental Health Alliance. 2017. *UK specialist perinatal mental health community teams*. Online: Maternal Mental Health Alliance. Available at: https://maternalmentalhealthalliance.org/campaign/maps/ [Accessed: 2 August 2019].

Maternal Mental Health Alliance. 2018. *Wales perinatal mental health is everyone's business*. London: Maternal Mental Health Alliance.

Maternal Mental Health Alliance. 2019. *Turning the map green in England: fantastic progress, but risks remain*. Available at: http://maternalmentalhealthalliance.org/campaign/ [Accessed: 1 October 2019].

Matthey, S. et al. 2006. Variability in use of cut-off scores and formats on the Edinburgh Postnatal Depression Scale – implications for clinical and research practice. *Archives of Women's Mental Health* 9(6), pp. 309-315. doi: 10.1007/ s00737-006-0 152-x

Matthey, S. 2008. Using the Edinburgh Postnatal Depression Scale to screen for anxiety disorders. *Depression and Anxiety* 25(11), pp. 926-931 doi: 10.1002/ da.20415

Matthey, S. et al. 2013a. Errors in scoring the Edinburgh Postnatal Depression Scale. *Archives of Women's Mental Health* 16(2), pp. 117-122. doi: 10.1007/s00737-012-0324-9

Matthey, S. et al. 2013b. Using the Edinburgh Postnatal Depression Scale to screen for anxiety disorders: conceptual and methodological considerations. *Journal of Affective Disorders* 146(2), pp. 224-230. doi: http://dx.doi.org/10.1016/j.jad.2012.09.009

Matthey, S. and Ross-Hamid, C. 2011. The validity of DSM symptoms for depression and anxiety disorders during pregnancy. *Journal of Affective Disorders* 133(3), pp. 546-552. doi: http://dx.doi.org/10.1016/j.jad.2011.05.004

Matthey, S. and Ross-Hamid, C. 2012. Repeat testing on the Edinburgh Depression Scale and the HADS-A in pregnancy: differentiating between transient and enduring distress. *Journal of Affective Disorders* 141(2-3), pp. 213-221. doi: http://dx.doi.org/ 10.1016/j.jad.2012.02.037

Matvienko-Sikar, K. and Dockray, S. 2017. Effects of a novel positive psychological intervention on prenatal stress and well-being: a pilot randomised controlled trial. *Women and Birth* 30(2), pp. e111-e118. doi: http://dx.doi.org/10.1016/j.wombi. 2016.10.003

McCabe-Beane, J. E. et al. 2016. The identification of severity ranges for the Edinburgh Postnatal Depression Scale. *Journal of Reproductive and Infant Psychology*, pp. 1-11.

McCann, T. V. and Clark, E. 2010. Australian bachelor of midwifery students' mental health literacy: an exploratory study. *Nursing and Health Sciences* 12(1), pp. 14-20. doi: 10.1111/j.1442-2018.2009.00477.x

McCauley, K. et al. 2011. Midwives and assessment of perinatal mental health. *Journal of Psychiatric and Mental Health Nursing* 18(9), pp. 786-795. doi: doi:10. 1111/j.1365-2850.2011.01727.x

McGlone, C. et al. 2016. Midwives' experiences of asking the Whooley questions to assess current mental health: a qualitative interpretive study. *Journal of Reproductive and Infant Psychology* 34(4), pp. 383-393. doi: 10.1080/02646838. 2016. 1188278

McGookin, A. et al. 2017. Student midwives' awareness, knowledge, and experiences of antenatal anxiety within clinical practice. *Journal of Reproductive and Infant Psychology* 35(4), pp. 380-393. doi: 10.1080/02646838.2017.1337270

McGregor, M. et al. 2014. The effect of physician-based cognitive behavioural therapy among pregnant women with depressive symptomatology: a pilot quasi-experimental trial. *Early Intervention in Psychiatry* 8(4), pp. 348-357. doi: 10.1111/eip.12074

McKillop, E. et al. 2010. The best and worst time of my life: the lived experience and meaning of pregnancy in women with mild to moderate depression. *Journal of Prenatal and Perinatal Psychology and Health* 24(3), pp. 174-195.

McLeish, J. and Redshaw, M. 2015. Peer support during pregnancy and early parenthood: a qualitative study of models and perceptions. *BMC Pregnancy and Childbirth* 15. doi: 10.1186/s12884-015-0685-y

McLeish, J. and Redshaw, M. 2017. Mothers' accounts of the impact on emotional wellbeing of organised peer support in pregnancy and early parenthood: a qualitative study. *BMC Pregnancy and Childbirth* 17(1), p. 28. doi: 10.1186/s12884-017-1220-0

McManus, S. et al. 2016. *Mental health and wellbeing in England: adult psychiatric morbidity survey 2014*. Leeds: NHS Digital

Megnin-Viggars, O. et al. 2015. Experience of care for mental health problems in the antenatal or postnatal period for women in the UK: a systematic review and meta-synthesis of qualitative research. *Archives of Women's Mental Health* 18(6), pp. 745-759. doi: 10.1007/s00737-015-0548-6

Mental Health Foundation. 2016. *Fundamental facts about mental health 2016*. London: Mental Health Foundation. Available at: https://www.mentalhealth.org.uk/publications/fundamental-facts-about-mental-health-2016 [Accessed: 6 July 2019].

Mental Health Taskforce. 2016. *The five year forward view for mental health*. Available at: https://www.england.nhs.uk/wp-content/uploads/2016/02/Mental-Health-Taskforce-FYFV-final.pdf [Accessed: 26 January 2017].

Mental Welfare Commission for Scotland. 2016. *Perinatal themed visit report: keeping mothers and babies in mind*. Edinburgh: Mental Welfare commission.

Milgrom, J. et al. 2008. Antenatal risk factors for postnatal depression: a large prospective study. *Journal of Affective Disorders* 108(1), pp. 147-157. doi: https://doi.org/10.1016/j.jad.2007.10.014

Milgrom, J. et al. 2011. Towards parenthood: an antenatal intervention to reduce depression, anxiety and parenting difficulties. *Journal of Affective Disorders* 130(3), pp. 385-394. doi: http://dx.doi.org/10.1016/j.jad.2010.10.045

Milgrom, J. et al. 2015. Feasibility study and pilot randomised trial of an antenatal depression treatment with infant follow-up. *Archives of Women's Mental Health* 18(5), pp. 717-730. doi: 10.1007/s00737-015-0512-5

Mind. 2019. *Mind: for better mental health.* Available at: https://www.mind.org.uk/information-support/types-of-mental-health-problems/self-esteem/tips-to-improve-your-self-esteem/#.Xfz-I0ewmUk [Accessed: 20 May 2019].

Miszkurka, M. et al. 2012. Antenatal depressive symptoms among Canadian-born and immigrant women in Quebec: differential exposure and vulnerability to contextual risk factors. *Social Psychiatry and Psychiatric Epidemiology* 47(10), pp. 1639-1648. doi: 10.1007/s00127-011-0469-2

Moehler, E. et al. 2006. Maternal depressive symptoms in the postnatal period are associated with long-term impairment of mother–child bonding. *Archives of Women's Mental Health* 9(5), pp. 273-278. doi: 10.1007/s00737-006-0149-5

Molander, E. et al. 2010. Routine ultrasound examination during pregnancy: a world of possibilities. *Midwifery* 26(1), pp. 18-26. doi: https://doi.org/10.1016/j.midw.2008.04.008

Mollart, L. et al. 2009. Midwives' emotional wellbeing: impact of conducting a structured antenatal psychosocial assessment (SAPSA). *Women and Birth* 22(3), pp. 82-88. doi: 10.1016/j.wombi.2009.02.001

Moran-Ellis, J. et al. 2006. Triangulation and integration: processes, claims and implications. *Qualitative Research* 6(1), pp. 45-59. doi: 10.1177/1468794106058870

Morrison, V. and Bennett, P. 2006. *An introduction to health psychology*. Spain: Pearson Education Limited.

Moses-Kolko, E. L. and Roth, E. K. 2004. Antepartum and postpartum depression: healthy mom, healthy baby. *Journal of the American Medical Women's Association* 59(3), pp. 181-191.

Mruk, C. J. 2013. *Self-esteem and positive psychology: research, theory, and practice.* 4th ed. New York: Springer Publishing Company.

Murray, D. and Cox, J. L. 1990. Screening for depression during pregnancy with the Edinburgh Depression Scale (EDDS). *Journal of Reproductive and Infant Psychology* 8(2), pp. 99-107. doi: 10.1080/02646839008403615

Muzik, M. and Borovska, S. 2010. Perinatal depression: implications for child mental health. *Mental Health in Family Medicine* 7(4), pp. 239-247.

Muzik, M. et al. 2012. Mindfulness yoga during pregnancy for psychiatrically at-risk women: preliminary results from a pilot feasibility study. *Complementary Therapies in Clinical Practice* 18(4), pp. 235-240. doi: http://dx.doi.org/10.1016/j.ctcp.2012.06.006

Myles, M. F. 1953. *A textbook for midwives.* Edinburgh: E. & S. Livingstone LTD.

Myles, M. F. 1955. *A textbook for midwives.* Reprint, Edinburgh: E. & S. Livingstone LTD.

Myles, M. F. 1962. *A textbook for midwives.* 4th ed. Edinburgh: E. & S. Livingstone LTD.

Myles, M. F. 1964. *A textbook for midwives.* 5th ed. Edinburgh and London: E. & S. Livingstone LTD.

Myles, M. F. 1968. *A textbook for midwives.* 6th ed. Edinburgh: E. & S. Livingstone LTD.

Nagle, B. and Williams, N. 2013. Methodology brief: introduction to focus groups. Available at: http://www.mmgconnect.com/projects/userfiles/file/focusgroupbrief.pdf [Accessed: 18 May 2017].

Nast, I. et al. 2013. How to measure prenatal stress? A systematic review of psychometric instruments to assess psychosocial stress during pregnancy. *Paediatric and Perinatal Epidemiology* 27(4), pp. 313-322. doi: 10.1111/ppe.12051

National Assembly for Wales. 2017. *Perinatal mental health in Wales.* Cardiff: National Assembly for Wales Commission.

National Health Service. 2015. *Improving access to perinatal mental health services in England – a review.* Available at: https://www.england.nhs.uk/north/north-west-coast-strategic-clinical-networks/our-networks/maternity-perinatal-mental-health/projects/improving-access-to-perinatal-mental-health-services/ [Accessed: 5 July 2017].

National Health Service. 2018. *Pregnancy and baby apps.* National Health Service. Available at: https://www.nhs.uk/apps-library/category/pregnancy-and-baby/ [Accessed: 2 September 2019].

National Health Service. 2019a. *Assessing capacity.* Available at: https://www.nhs.uk/conditions/consent-to-treatment/capacity/ [Accessed: 25 May 2018].

National Health Service. 2019b. *Data field notes*. National Health Service. Available at: https://www.datadictionary.nhs.uk/data_dictionary/data_field_notes/ g/general ised_ anxiety_disorder_score_de.asp?shownav=1 [Accessed: 20 July 2019].

National Institute for Clinical Excellence. 2007. Antenatal and postnatal mental health. Clinical management and service guidance. *Clinical guideline 45*. London: National Institute for Health and Care Excellence.

National Institute for Health and Care Excellence. 2014. Antenatal and postnatal mental health: clinical management and service guidance *Clinical guideline 192*. London: National Institute for Health and Care Excellence.

National Institute for Health and Care Excellence. 2016. Antenatal and postnatal mental health. *Quality standard 115*. London: National Institute for Health and Care Excellence.

National Institute for Health and Care Excellence. 2019a. Antenatal care for uncomplicated pregnancies. *Clinical guideline 62*. London: National Institute for Health and Care Excellence.

National Institiute for Health and Care Excellence. 2019b. Caesarean section *Clinical guideline 132*. London: National Institiute for Health and Care Excellence.

Newham, J. J. et al. 2014. Effects of antenatal yoga on maternal anxiety and depression: a randomized controlled trial. *Depression and Anxiety* 31(8), pp. 631-640. doi: 10.1002/da.22268

NHS Direct Wales. 2019. *Bacterial vaginosis*. Available at: https://www.nhsdirect. wales.nhs.uk/encyclopaedia/b/article/bacterialvaginosis/ [Accessed: 1 September 2019].

NHS Education for Scotland. 2019. *Perinatal mental health curricular framework: a framework for maternal and infant mental health*. Edinburgh: National Education for Scotland.

NHS England. 2016. *National maternity review: better births: improving outcomes of maternity services in England. A five year forward view for maternity care*. Available at: https://www.england.nhs.uk/publication/better-births-improving-outcomes-of-maternity-services-in-england-a-five-year-forward-view-for-maternity-care/ [Accessed: 7 August 2019].

NHS. 2018. *General anxiety disorders in adults*. Available at: https://www.nhs.uk/ conditions/generalised-anxiety-disorder/ [Accessed: 3 April 2018].

Nolan, M. L. et al. 2012. Making friends at antenatal classes: a qualitative exploration of friendship across the transition to motherhood. *The Journal of Perinatal Education* 21(3), pp. 178-185. doi: http://dx.doi.org/10.1891/1058-1243.21.3.178

Noonan, M. et al. 2017. Midwives' perceptions and experiences of caring for women who experience perinatal mental health problems: an integrative review. *Midwifery* 45, pp. 56-71. doi: http://doi.org/10.1016/j.midw.2016.12.010

Nursing and Midwifery Council. 2009. Standards for pre-registration midwifery education. London: Nursing and Midwifery Council.

Nursing and Midwifery Council. 2015. The code: professional standards of practice and behaviour for nurses and midwives. London: Nursing and Midwifery Council.

Nursing and Midwifery Council. 2019. Realising professionalism: standards for education and training. *Part 3: standards for pre-registration midwifery programmes.* London: Nursing and Midwifery Council.

NVivo. 2015. NVivo qualitative data analysis software. QSR International Pry Ltd.

Nwebube, C. et al. 2017. Prenatal listening to songs composed for pregnancy and symptoms of anxiety and depression: a pilot study. *BMC Complementary and Alternative Medicine* 17(1), p. 256. doi: 10.1186/s12906-017-1759-3

Nylen, K. J. et al. 2013. Perceived social support interacts with prenatal depression to predict birth outcomes. *Journal of Behavioral Medicine* 36(4), pp. 427-440. doi: 10.1007/s10865-012-9436-y

O'Connor, T. G. et al. 2002. Maternal antenatal anxiety and children's behavioural/ emotional problems at 4 years. Report from the Avon Longitudinal Study of Parents and Children. *British Journal of Psychiatry* 180, pp. 502-508. doi: 10.1192/bjp.180.6.502

O'Connor, T. G. et al. 2003. Maternal antenatal anxiety and behavioural/emotional problems in children: a test of a programming hypothesis. *Journal of Child Psychology and Psychiatry* 44(7), pp. 1025-1036. doi: 10.1111/1469-7610.00187

O'Donovan, C. and O'Donovan, J. 2018. Why do women request an elective cesarean delivery for non-medical reasons? A systematic review of the qualitative literature. *Birth* 45(2), pp. 109-119. doi: 10.1111/birt.12319

O'Mahen, H. A. and Flynn, H. A. 2008. Preferences and perceived barriers to treatment for depression during the perinatal period. *Journal of Women's Health* 17(8), pp. 1301-1309. doi: 10.1089/jwh.2007.0631

O'Higgins, M. et al. 2013. Mother-child bonding at 1 year; associations with symptoms of postnatal depression and bonding in the first few weeks. *Archives of Women's Mental Health* 16(5), pp. 381-389. doi: 10.1007/s00737-013-0354-y

Office for National Statistics. 2011. *2011 Census: quick statistics for Wales on national identity, passports held and country of birth.* Office for National Statistics. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationAndmigration/populationestimates/datasets/2011censusquickstatisticsforwalesonnationalidentitypassportsheldandcountryofbirth [Accessed: 10 April 2019].

Office for National Statistics. 2018. *ONS occupation coding tool*. Office for National Statistics. Available at: https://onsdigital.github.io/dp-classification-tools/standard-occupational-classification/ONS_SOC_occupation_coding_tool.html [Accessed: 15 October 2018].

Olafsdottir, O. A. 2009. *Inner knowing and emotions in the midwife-woman relationship*. Hampshire: Palgrave Macmillan.

Onoye, J. M. et al. 2013. Changes in PTSD symptomatology and mental health during pregnancy and postpartum. *Archives of Women's Mental Health* 16(6), pp. 453-463. doi: 10.1007/s00737-013-0365-8

Orr, S. T. et al. 2007. Depressive symptoms and indicators of maternal health status during pregnancy. *Journal of Women's Health* 16(4), pp. 535-542. doi: 10.1089/jwh.2006.0116

Pallant, J. 2011. *SPSS survival manual: a step by step guide to data analysis using SPSS*. 4th ed. Australia: Allen and Unwin.

Pearlin, L. 1961. The appeals of anonymity in questionnaire response. *Public Opinion Quarterly* 25(4), pp. 640-647. doi: 10.1086/267059

Pearson, R. M. et al. 2018. Prevalence of prenatal depression symptoms among 2 generations of pregnant mothers. *NAMA Network Open* 1(3), p. e180725. doi: 10.1001/jamanetworkopen.2018.0725

Phillips, L. 2015. Assessing the knowledge of perinatal mental illness among student midwives. *Nurse Education in Practice* 15(6), pp. 463-469. doi: http://dx.doi.org/10.1016/j.nepr.2014.09.003

Pickett, K. E. et al. 2009. Women who remember, women who do not: a methodological study of maternal recall of smoking in pregnancy. *Nicotine and Tobacco Research* 11(10), pp. 1166-1174. doi: 10.1093/ntr/ntp117

Pitt, B. 1968. "Atypical" depression following childbirth. *The British Journal of Psychiatry* 114(516), pp. 1325-1335. doi: 10.1192/bjp.114.516.1325

Pleshette, N. et al. 1956. A study of anxieties during pregnancy, labor, the early and late puerperium. *Bulletin of the New York Academy of Medicine* 32(6), pp. 436-455.

Polit, D. F. and Beck, C. T. 2004. *Nursing research: principles and methods*. 7th ed. London: Lippincott Williams and Wilkins.

Pollock, K. 2012. Procedure versus process: ethical paradigms and the conduct of qualitative research. *BMC Medical Ethics* 13(1), p. 25. doi: 10.1186/1472-6939-13-25

Prescott, J. and Mackie, L. 2017. You sort of go down a rabbit hole... you're just going to keep on searching": a qualitative study of searching online for pregnancy-related information during pregnancy. *Journal of Medical Internet Research* 19(6), p. e194. doi: 10.2196/jmir.6302

Priest, S. R. et al. 2008. A psychosocial risk assessment model (PRAM) for use with pregnant and postpartum women in primary care settings. *Archives of Women's Mental Health* 11, p. 307. doi: 10.1007/s00737-008-0028-3

Prosser, J. and Loxley, A. 2008. *Introducing visual methods*. Available at: http://eprints. ncrm.ac.uk/420/ [Accessed: 11 April 2017].

Public Health Agency. 2017. *Regional perinatal mental health care pathway*. Belfast: Public Health Agency.

Public Health Wales. 2019. *Bump baby and beyond e-book version 2*. Available at: http://www.wales.nhs.uk/document/288916/info/ [Accessed: 20 September 2019].

Public Health Wales Observatory. 2017. *Pregnancy and childhood surveillance tool 2017*. Cardiff: Public Health Wales Observatory. Available at: [Accessed: 24 July 2019].

Rallis, S. et al. 2014a. The transition to motherhood: towards a broader understanding of perinatal distress. *Women and Birth* 27(1), pp. 68-71. doi: http://dx. doi.org/10.1016/ j.wombi.2013.12.004

Rallis, S. et al. 2014b. A prospective examination of depression, anxiety and stress throughout pregnancy. *Women and Birth* 27(4), pp. e36-e42. doi: https://doi.org/10. 1016/j.wombi.2014.08.002

Raymond, J. E. 2009. 'Creating a safety net': women's experiences of antenatal depression and their identification of helpful community support and services during pregnancy. *Midwifery* 25(1), pp. 39-49. doi: 10.1016/j.midw.2007.01.005

Raymond, N. C. et al. 2014. Addressing perinatal depression in a group of underserved urban women: a focus group study. *BMC Pregnancy and Childbirth* 14(1), p. 336. doi: 10.1186/1471-2393-14-336

Redshaw, M. and Henderson, J. 2016. Who is actually asked about their mental health in pregnancy and the postnatal period? Findings from a national survey. *BMC Psychiatry* 16, p. 322. doi: 10.1186/s12888-016-1029-9

Regan, J. 2018. *Improving representations of mental health on TV*. Online: MIND. Available at: https://www.mind.org.uk/information-support/your-stories/improving-representations-of-mental-health-on-tv/#.Xe-IYeiwmUk [Accessed: 10 December 2019].

Richens, Y. and Smith, D. 2011. Applied qualitative research in maternity care: a reflection of the barriers to data collection with 'at-risk' populations. *Diversity in Health and Care* 8, pp. 29-36.

Robertson, E. et al. 2004. Antenatal risk factors for postpartum depression: a synthesis of recent literature. *General Hospital Psychiatry* 26(4), pp. 289-295. doi: 10.1016/j.gen hosppsych.2004.02.006

Rollans, M. et al. 2013. 'We just ask some questions...' the process of antenatal psychosocial assessment by midwives. *Midwifery* 29(8), pp. 935-942. doi: 10.1016/j.midw.2012.11.013

Rompala, K. S. et al. 2016. Prenatal depression screening by certified nurse-midwives, Oregon. *Journal of Midwifery and Women's Health* 61(5), pp. 599-605. doi: 10.1111/jmwh.12491

Rose, M. and Devine, J. 2014. Assessment of patient-reported symptoms of anxiety. *Dialogues in Clinical Neuroscience* 16(2), pp. 197-211.

Ross-Davie, M. et al. 2006. A public health role in perinatal mental health: are midwives ready? *British Journal of Midwifery* 14(6), pp. 330-334.

Ross-Davie, M. et al. 2007. Planning and implementing mental health training. *British Journal of Midwifery* 15(4), pp. 199-203. doi: 10.12968/bjom.2007.15.4.23393

Ross, L. E. and McLean, L. M. 2006. Anxiety disorders during pregnancy and the postpartum period: a systematic review. *Journal of Clinical Psychiatry* 67(8), pp. 1285-1298. doi: 10.4088/JCP.v67n0818

Rothera, I. and Oates, M. 2008. Managing perinatal mental health disorders effectively: identifying the necessary components of service provision and delivery. *Psychiatric Bulletin* 32(4), pp. 131-133. doi: 10.1192/pb.bp.107.16758

Rothera, I. and Oates, M. 2011. Managing perinatal mental health: a survey of practitioners' views. *British Journal of Midwifery* 19(5), pp. 304-313. doi: 10.12968/bjom.2011.19.5.304

Rowan, C. et al. 2007. Postnatal debriefing interventions to prevent maternal mental health problems after birth: exploring the gap between the evidence and UK policy and practice. *Worldviews on Evidence-Based Nursing* 4(2), pp. 97-105. doi: 10.1111/j.1741-6787.2007.00088.x

Rudnicki, S. R. et al. 2001. Social support and avoidant coping: correlates of depressed mood during pregnancy in minority women. *Women and Health* 34(3), pp. 19-34. doi: 10.1300/J013v34n03_02

Russell, K. 2016. *Maternal mental health-women's voices*. London: Royal College of Obstetricians and Gynaecologists. Available at: https://www.rcog.org.uk/en/patients/maternal-mental-health-womens-voices/ [Accessed: 22 July 2019].

Sambrook Smith, M. et al. 2019. Barriers to accessing mental health services for women with perinatal mental illness: systematic review and meta-synthesis of qualitative studies in the UK. *BMJ Open* 9(1), pp. e024803-e024803. doi: 10.1136/bmjopen-2018-024803

Sandall, J. et al. 2018. Short-term and long-term effects of caesarean section on the health of women and children. *The Lancet* 392(10155), pp. 1349-1357. doi: https://doi.org/10.1016/S0140-6736(18)31930-5

Sayakhot, P. and Carolan-Olah, M. 2016. Internet use by pregnant women seeking pregnancy-related information: a systematic review. *BMC Pregnancy and Childbirth* 16(1), p. 65. doi: 10.1186/s12884-016-0856-5

Schetter, C. D. and Tanner, L. 2012. Anxiety, depression and stress in pregnancy: implications for mothers, children, research, and practice. *Current Opinion in Psychiatry* 25(2), pp. 141-148. doi: 10.1097/YCO.0b013e3283503680

Schwarzer, R. and Jerusalem, M. 1995. *Generalized Self-Efficacy scale.* Windsor: Nfer-Nelson.

Scottish Government. 2017a. *Scottish Government - mental health strategy: 2017-2027.* Available at: https://maternalmentalhealthscotland.org.uk/news/scottish-government-mental-health-strategy-2017-2027 [Accessed: 6 April 2017].

Scottish Government. 2017b. *The best start: five-year plan for maternity and neonatal care.* Scottish Government. Available at: https://www.gov.scot/publications/ best-start-five-year-forward-plan-maternity-neonatal-care-scotland/ [Accessed: 20 August 2019].

Scottish Government. 2019. *Delivering effective services: needs assessment and service recommendations for specialist and universal perinatal mental health services.* Available at: https://www.gov.scot/publications/delivering-effective-services-needs-assessment-service-recommendations-specialist-universal-perinatal-mental-health-services/pages/6/ [Accessed: 8 August 2019].

Segre, L. S. et al. 2010. Listening visits: an evaluation of the effectiveness and acceptability of a home-based depression treatment. *Psychotherapy Research* 20(6), pp. 712-721. doi: 10.1080/10503307.2010.518636

Sheen, K. and Slade, P. 2018. Examining the content and moderators of women's fears for giving birth: a meta-synthesis. *Journal of Clinical Nursing* 27(13-14), pp. 2523-2535. doi: doi:10.1111/jocn.14219

Shelton, J. 2019. *Depression definition and DSM-5 diagnostic criteria.* Available at: https://www.psycom.net/depression-definition-dsm-5-diagnostic-criteria/ [Accessed: 23 May 2019].

Sidebottom, A. C. et al. 2012. Validation of the Patient Health Questionnaire (PHQ)-9 for prenatal depression screening. *Archives of Women's Mental Health* 15(5), pp. 367-374. doi: 10.1007/s00737-012-0295-x

Silverman, D. 2010. *Qualitative research*. 3rd ed. London: Sage Publications Ltd.

Simcock, G. et al. 2017. Infant neurodevelopment is affected by prenatal maternal stress: the QF2011 Queensland flood study. *Infancy* 22(3), pp. 282-302. doi: 10.1111/infa.12166

Simpson, W. et al. 2014. Comparative efficacy of the Generalized Anxiety Disorder 7-Item scale and the Edinburgh Postnatal Depression Scale as screening tools for generalized anxiety disorder in pregnancy and the postpartum period. *The Canadian Journal of Psychiatry* 59(8), pp. 434-440.

Slainte, A. R. and Poustie, M. O. 2017. *Health and wellbeing 2026: delivering together*. Available at: https://www.health-ni.gov.uk/publications/health-and-wellbeing-2026-delivering-together [Accessed: 8 August 2019].

Small, R. et al. 2000. Randomised controlled trial of midwife led debriefing to reduce maternal depression after operative childbirth. *British Medical Journal* 321(7268), pp. 1043-1047. doi: 10.1136/bmj.321.7268.1043

Smedberg, J. et al. 2015. The relationship between maternal depression and smoking cessation during pregnancy – a cross-sectional study of pregnant women from 15 European countries. *Archives of Women's Mental Health* 18(1), pp. 73-84. doi: 10.1007/s00737-014-0470-3

Smith, M. V. et al. 2010. Do the PHQ-8 and the PHQ-2 accurately screen for depressive disorders in a sample of pregnant women? *General Hospital Psychiatry* 32(5), pp. 544-548. doi: http://dx.doi.org/10.1016/j.genhosppsych.2010.04.011

Somerville, S. et al. 2014. The Perinatal Anxiety Screening Scale: development and preliminary validation. *Archives of Women's Mental Health* 17(5), pp. 443-454. doi: 10.1007/s00737-014-0425-8

Somerville, S. et al. 2015. Detecting the severity of perinatal anxiety with the Perinatal Anxiety Screening Scale (PASS). *Journal of Affective Disorders* 186, pp. 18-25. doi: https://doi.org/10.1016/j.jad.2015.07.012

Song, H. et al. 2013. Information needs, seeking behaviors, and support among low-income expectant women. *Women and Health* 53(8), pp. 824-842. doi: 10.1080/03630242.2013.831019

Spencer, L. et al. 2003. *Quality in qualitative evaluation: a framework for assessing research evidence.* London: National Centre for Social Research.

Spitzer, R. L. et al. 2006. A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine* 166(10), pp. 1092-1097. doi: 10.1001/arc hinte.166.10.1092

Stamp, G. E. et al. 1996. Predicting postnatal depression among pregnant women. *Birth* 23(4), pp. 218-223. doi: 10.1111/j.1523-536X.1996.tb00498.x

Staneva, A. et al. 2016. Pregnancy-specific distress: the role of maternal sense of coherence and antenatal mothering orientations. *Journal of Mental Health* 25(5), pp. 387-394. doi: 10.3109/09638237.2015.1101425

Staneva, A. A. et al. 2017. "I just feel like I am broken. I am the worst pregnant woman ever": a qualitative exploration of the "at odds" experience of women's antenatal distress. *Health Care for Women International* 38(6), pp. 658-686. doi: 10.1080/0739 9332.2017.1297448

Staneva, A. A. et al. 2018. Maternal psychological distress during pregnancy does not increase the risk for adverse birth outcomes. *Women and Health* 58(1), pp. 92-111. doi: 10.1080/03630242.2017.1282395

Stein, A. et al. 2014. Effects of perinatal mental disorders on the fetus and child. *The Lancet* 384(9956), pp. 1800-1819. doi: https://doi.org/10.1016/S0140-6736(14)61277-0

Stewart, C. and Henshaw, C. 2002. Midwives and perinatal mental health. *British Journal of Midwifery* 10(2), pp. 117-121.

Stewart, D. et al. 2011. Patient and public involvement. *Annals of Oncology* 22(7), pp. vii54-vii56. doi: 10.1093/annonc/mdr427

Storksen, H. T. et al. 2015. Fear of childbirth and elective caesarean section: a population-based study. *BMC Pregnancy and Childbirth* 15(1), p. 221. doi: 10.1186/ s12884-015-0655-4

Swalm, D. et al. 2010. Using the Edinburgh Postnatal Depression Scale to screen for perinatal anxiety. *Archives of Women's Mental Health* 13(6), pp. 515-522. doi: 10.1007/ s00737-010-0170-6

Taka-Eilola, T. et al. 2019. Severe mood disorders and schizophrenia in the adult offspring of antenatally depressed mothers in the Northern Finland 1966 Birth Cohort: Relationship to parental severe mental disorder. *Journal of Affective Disorders* 249, pp. 63-72. doi: 10.1016/j.jad.2019.02.011

Talge, N. M. et al. 2007. Antenatal maternal stress and long-term effects on child neurodevelopment: how and why? *The Journal of Child Psychology and Psychiatry* 48(3-4), pp. 245-261. doi: 10.1111/j.1469-7610.2006.01714.x

Tammentie, T. et al. 2004. Family dynamics and postnatal depression. *Journal of Psychiatric and Mental Health Nursing* 11(2), pp. 141-149. doi: 10.1111/j.1365-2850.2003.00684.x

Taylor, B. et al. 2018. *Better births and continuity: midwife survey results*. Available at: https://www.england.nhs.uk/publication/better-births-improving-outcomes-of-maternity-services-in-england-a-five-year-forward-view-for-maternity-care/ [Accessed: 20 July 2019].

Tashakkori, A. and Teddie, C. 2010. *Sage handbook of mixed methods in social and behavioral research.* 2nd ed. London: Sage Publications Ltd.

Term, H. 2015. *Montgomery (appellant) v Lanarkshire Health Board (respondent) Scotland.*

The Royal College of Midwives. 2016. *'Maternal mental health services must be right for women and in the right places without specialist midwives says RCM'.* Available at: https://www.rcm.org.uk/media-releases/2016/november/maternal-mental-health-services-must-be-right-for-women-and-in-the-right-places-with-specialist-midwives-says-rcm/ [Accessed: 30 April 2017].

The Royal College of Midwives. 2018. *Specialist mental health midwives.* Available at: https://www.rcm.org.uk/publications/?page=5&memberfilter=false [Accessed: 18 April 2019].

Thomas, N. et al. 2014. Pilot early intervention antenatal group program for pregnant women with anxiety and depression. *Archives of Women's Mental Health* 17(6), pp. 503-509. doi: 10.1007/s00737-014-0447-2

Trede, K. et al. 2009. Treatise on insanity in pregnant, postpartum, and lactating women (1858) by Louis-Victor Marce: a commentary. *Harvard Review of Psychiatry* 17(2), pp. 157-165.

Truijens, S. E. M. et al. 2017. Different patterns of depressive symptoms during pregnancy. *Archives of Women's Mental Health* 20(4), pp. 539-546. doi: 10.1007/s00737-017-0738-5

UK Government. 1998. *Data protection act 1998*. Available at: http://www.legislation.gov.uk/ukpga/1998/29/contents [Assessed: 11 April 2017].

UK Government. 2005. *Mental capacity act 2005*. Available at: http://www.legislation.gov.uk/ukpga/2005/9/contents

UK Government. 2010. *UK Caldicott guardian council*. Available at: https://www.gov.uk/government/groups/uk-caldicott-guardian-council [Assessed: 10 April 2017].

Underwood, L. et al. 2016. A review of longitudinal studies on antenatal and postnatal depression. *Archives of Women's Mental Health* 19(5), pp. 711-720. doi: 10.1007/s00737-016-0629-1

Vaismoradi, M. et al. 2013. Content analysis and thematic analysis: implications for conducting a qualitative descriptive study. *Nursing and Health Sciences* 15(3), pp. 398-405. doi: doi:10.1111/nhs.12048

Van Lieshout, R. J. et al. 2017. Evaluating the effectiveness of a brief group cognitive behavioural therapy intervention for perinatal depression. *Archives of Women's Mental Health* 20(1), pp. 225-228. doi: 10.1007/s00737-016-0666-9

Vieten, C. and Astin, J. 2008. Effects of a mindfulness-based intervention during pregnancy on prenatal stress and mood: results of a pilot study. *Archives of Women's Mental Health* 11(1), pp. 67-74. doi: 10.1007/s00737-008-0214-3

Vijayananthan, A. and Nawawi, O. 2008. The importance of Good Clinical Practice guidelines and its role in clinical trials. *Biomedical imaging and intervention journal* 4(1), p. e5. doi: 10.2349/biij.4.1.e5

Viveiros, C. J. and Darling, E. K. 2018. Barriers and facilitators of accessing perinatal mental health services: the perspectives of women receiving continuity of care midwifery. *Midwifery* 65, pp. 8-15. doi: https://doi.org/10.1016/j.midw.2018.06. 018

Waldenström, U. 2003. Women's memory of childbirth at two months and one year after the birth. *Birth* 30(4), pp. 248-254. doi: 10.1046/j.1523-536X.2003.00254.x

Waldenström, U. et al. 2006. Antenatal fear of childbirth and its association with subsequent caesarean section and experience of childbirth. *BJOG: An International Journal of Obstetrics & Gynaecology* 113(6), pp. 638-646. doi: 10.1111/j.1471-0528.2006.00950.x

Warriner, S. et al. 2011. Maternity and mental health services working collaboratively for women. *British Journal of Midwifery* 19(11), pp. 729-733.

Welsh Government. 2014. *Welsh index of multiple deprivation 2014*. Available at: https://statswales.gov.wales/Catalogue/Community-Safety-and-Social-Inclusion/Welsh-Index-of-Multiple-Deprivation/WIMD-2014 [Accessed: 15 October 2018].

Welsh Government. 2016a. *Welsh health survey 2015: health status, illness, and other conditions*. Available at: https://www.gov.uk/government/statistics/welsh-health-survey-2015-health-status-illness-and-other-conditions [Accessed: 23 May 2017].

Welsh Government. 2016b. *An overview of the health child Wales programme*. Available at: https://gov.wales/healthy-child-wales-programme-0 [Accessed: 4 August 2019].

Welsh Government. 2017. *Your birth – we care: a survey of women's views of maternity care in Wales.* Heads of Midwifery Advisory Group. [Accessed: 23 December 2019].

Welsh Government. 2019a. *Together for mental health delivery plan: 2019-2022*. Available at: https://gov.wales/mental-health-delivery-plan-2019-to-2022 [Accessed: 30 January 2020].

Welsh Government. 2019b. *Maternity care in Wales: a five year vision for the future (2019-2024)*. Available at: https://gov.wales/maternity-services-strategy-2019-2024 [Accessed: 6 August 2019].

White, J. et al. 2015. Antenatal parenting support for vulnerable women. *British Journal of Midwifery* 23(10), pp. 724-732.

Whittemore, R. and Melkus, G. D. E. 2008. Designing a research study. *The Diabetes Educator* 34(2), pp. 201-216. doi: 10.1177/0145721708315678

Whooley, M. A. et al. 1997. Case-finding instruments for depression. Two questions are as good as many. *Journal of General Internal Medicine* 12(7), pp. 439-445.

Wieckowski, B. M. et al. 2017. Higher autism in children of women with psychiatric diagnoses. *Research in Autism Spectrum Disorders* 33, pp. 10-20. doi: 10.1016/j.rasd.2016.10.004

Williams, C. J. et al. 2016. Midwives and women's views on using UK recommended depression case finding questions in antenatal care. *Midwifery* 35, pp. 39-46. doi: 10.1016/j.midw.2016.01.015

Witcombe-Hayes, S. et al. 2018. From bumps to babies: perinatal mental health care in Wales. Cardiff: NSPCC, National Centre for Mental Health, Mind Cymru, Mental Health Foundation, maternal Mental Health Everyone's Business.

Woolhouse, H. et al. 2014. Antenatal mindfulness intervention to reduce depression, anxiety and stress: a pilot randomised controlled trial of the MindBabyBody program in an Australian tertiary maternity hospital. *Bio Med Central Pregnancy and Childbirth* 14(1), p. 369. doi: 10.1186/s12884-014-0369-z

World Health Organisation. 1992. *The ICD-10 classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines*. Geneva: World Health Organisation.

World Health Organisation. 2017. *The process of seeking informed consent: information for researchers concerning informed decision making*. Available at: http://www.who.int/rpc/research_ethics/Process_seeking_IF_printing2.pdf [Accessed: 8 June 2018].

World Health Organisation. 2018. *WHO recommendations non-clinical interventions to reduce unnecessary caesarean section*. Available at: https://www.who.int/reprod uctivehealth/publications/non-clinical-interventions-to-reduce-cs/en/ [Accessed: 29 January 2020].

World Medical Association. 1964. *Declaration of Helsinki*. The World Medical Association Inc. Available at: https://www.wma.net/what-we-do/medical-ethics/declaration-of-helsinki/ [Accessed: 17 June 2019].

Wu, J. et al. 2002. Mood disturbance in pregnancy and the mode of delivery. *American Journal of Obstetrics and Gynecology* 187(4), pp. 864-867. doi: http://dx.doi.org/10.1067/mob.2002.127126

Zachariah, R. 2009. Attachment, social support, life stress, and anxiety as predictors of pregnancy complications in low-income women. *Research in Nursing and Health* 32(4), pp. 391-404. doi: 10.1002/nur.20335

Zelkowitz, P. et al. 2004. Factors associated with depression in pregnant immigrant women. *Transcultural Psychiatry* 41(4), pp. 445-464. doi: 10.1177/1363461504047929

Zimet, G. D. et al. 1988. The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment* 52(1), p. 30.

Appendices

Appendix 1 Systematic literature search – Consequences of mental health problems

A systematic literature search aims 'to identify, appraise and synthesise all the empirical evidence that meets pre-specified eligibility criteria to answer a given research question' (Cochrane 2017). A systematic search was planned to review articles previously published relating to the negative outcomes for women with perinatal mental health problems. The question asked was 'What are the negative consequences of perinatal mental health problems?' These words were entered into Google Scholar as advised by the librarian, to detect the commonly used words which could be added to the search strategy. The search revealed nearly 200,000 articles. A systematic search was performed using the following subject headings as a basis for the search strategy: *consequences, perinatal*, and *mental health issues*. These were then broken down into key words or phrases for each subject heading, for example, *consequences* led to key words including *low birth weight* and *preterm* (Table A1.1). Only low birth weight and preterm were used in the initial search as they were common negative consequences noted from the google search, to assess the number of studies available prior to a full systematic search. Antenatal and postnatal were used to understand if the consequences of mental health problems were more significant before or after birth.

Table A1.1. Key words used in the literature search.

Consequences	1	preterm
	2	low birth weight
	3	1 or 2
Perinatal	4	antenatal
	5	pregnancy
	6	postnatal
	7	4 or 5 or 6
Mental health issues	8	depression
	9	anxiety
	10	mental health
	11	8 or 9 or 10
Overall search	12	3 and 7 and 12

A search in CINAHL via EBSCO, produced 260,963 results. Filters were applied to narrow the range from year 2000 to 2017. The search inclusion criteria were then tightened and restricted to studies published in English and limited to those carried out in the United Kingdom, Europe, Canada, USA, Australia and New Zealand to obtain literature relevant to experiences of women in high-income countries with developed healthcare systems, resulting in 247,765 articles. The same search was run in MEDLINE via EBSCO and produced 5,775 articles. (Table A1.2).

Table A1.2. Number of articles found from each source.

Database or source	Results
CINAHL via EBSCO	247,765
MEDLINE via EBSCO	5775

Due to the number of articles available in two databases alone, a decision was made to use primary research. Using NICE guidance (2014), Lancet series (2014), MBRACE-UK (2016) and a report from a London school of economics (2014) were used as a starting point. A snowball effect was used to locate articles which were cited discussing the negative consequences of poor perinatal mental health, this resulted in 39 articles. These articles were discussed in chapter two. Articles which reported statistically significant results and were research studies rather than reports are reported in chapter two and in the table below. This amounted to 27 articles.

Author/date Country of study	Sample size, recruitment and method	Data collection tools *	Outcomes considered	Results
Effects of poor mental health on the mother				
Bayrampour et al. 2015 Canada	n=2825 <25 weeks and 34-36 weeks gestation and 4 months after birth Single hospital site Secondary Analysis of questionnaires	Questions about lifestyle, health, mental health, social support, birth outcomes and breastfeeding, Medical records	Depression and anxiety symptoms and mode of birth	Emergency caesarean section was associated with anxiety (OR 1.38, 95% CI, 1.06-1.81) and depression (OR 1.77, 95% CI, 1.20-2.62) in the third trimester. Symptoms of depression in the second trimester were associated with an increased risk of elective caesarean section (OR 1.58, 95% CI 1.07-2.35), anxiety in the second trimester predicted epidural use (OR 1.31, 95% CI 1.02-1.69). Symptoms of depression in the third trimester were independent predictors of an emergency caesarean section (aOR 2.04, 95% CI 1.26-3.29)
Beebe et al. 2007 USA	n=21 Nulliparous women 18-40 years old, 38 weeks gestation Longitudinal prospective descriptive study Questionnaires	Labour pain, self-efficacy, STAI-T, Prenatal Self-Evaluation questionnaire II, childbirth Self-efficacy inventory, McGill pain questionnaire – short form, post birth interviews	Antenatal anxiety and labour pain	Higher anxiety levels were significantly related to higher levels of labour pain (*p*=0.05) and unexpectedly to greater cervical dilatation (*p*=0.03) on admission

Author/date Country of study	Sample size, recruitment and method	Data collection tools *	Outcomes considered	Results
Blackmore et al. 2016 USA	n=345 Low income population 20 and 32 weeks gestation 2 and 6 months after birth Urban obstetric clinics Interview, clinical examination and medical records data	EPDS, Penn State Worry Questionnaire	Pregnancy related anxiety and depression and postnatal anxiety and depression	Pregnancy related anxiety concerning child health increased the likelihood of postnatal anxiety ($p<0.05$)
Culhane et al. 2001 USA	n=454 Early pregnancy Cross sectional clinical prevalence study	Cohen Perceived Stress Scale, socioeconomic and behaviour related practices	Chronic maternal stress and bacterial vaginosis	224 (49%) women had confirmed bacterial vaginosis, 64 (14.1%) had intermediate vaginal flora Women positive to bacterial vaginosis had significantly higher levels of chronic stress than those without ($p<0.01$) the infection, even after accounting for sociodemographic and behavioural risk factors. Moderate-stress and high-stress groups were 2.3 times (95% CI 1.2-4.3) and 2.2 times (95% CI 1.1-4.2) more likely to have bacterial vaginosis than women in the low-stress group

Author/date Country of study	Sample size, recruitment and method	Data collection tools *	Outcomes considered	Results
Goodwin et al. 2017 USA	n=8513 Pregnant women National survey data		Relationship between depression and cigarette smoking	Smoking in pregnancy was 4 times more common in women with depression than in women without depression (aOR 2.50, 95% CI 1.85-3.40). Smoking increased in pregnancy in women with depression p=0.02 and decreased in women without depression p=0.07
Haines et al. 2012 Sweden	n=509 Pregnant women 18-20 weeks gestation and 2 months after birth

Prospective longitudinal cohort design with self-reported questionnaires | Birth attitudes profile scale, Fear of birth scale | Relationship between fear of childbirth and mode of birth, attitude to birth and analgesia for labour | Women with specific anxiety or fear of childbirth were more likely to report a negative experience of birth (aOR 1.7, 95% CI 1.01-2.9, p<0.05), show a preference for an elective caesarean section (aOR 3.3, 95% CI 1.6-6.8, p<0.001) and were more likely to receive an elective caesarean section (aOR 5.4, 95% CI 2.1-14.2, p<0.001). Women with pregnancy specific anxiety reported increased levels of labour pain (p<0.01) and a higher proportion of women (aOR 1.8, 95% CI 1.1-3.2, p<0.05) received epidural analgesia during labour |
| Martini et al. 2010 Germany | n=992 mother child pairs Community sample of a longitudinal study Interviews | DSM-IV

Medical records | Relationship between mental health during pregnancy in relation to maternal outcomes | Women with anxiety but low self-perceived distress (n=177) had a high risk of depression after birth (OR 2.1, 95% CI 1.4-3.2, p=0.001) compared to women without these conditions. This risk was increased (OR 4.8, 95% CI 2.1-11.2, p<0.001) in women if both anxiety and self-perceived distress (n=31) were present in the antenatal period |

283

Author/date Country of study	Sample size, recruitment and method	Data collection tools *	Outcomes considered	Results
Milgrom et al. 2008 Australia	n=35374 Pregnant women Antenatal clinic and six weeks after birth	EPDS, Psychosocial risk factor	Antenatal risk factors for postnatal depression	Women with antenatal depressive symptoms indicated by the Edinburgh Postnatal Depression Scale (EPDS) of >12 (n=3144, 8.9%). Of the women (n=12,034) who completed the postnatal follow up, 925 (7.5%) had symptoms of depression. Significant predictors of postnatal depression were antenatal emotional problems (aOR 1.39, 95% CI 1.12-1.73, $p<0.01$), EPDS >12 (aOR 1.18, 95% CI 1.15-1.21, $p<0.001$) and previous mental ill health (aOR 1.70, 95% CI 1.39-2.07, $p<0.001$)
Orr et al. 2007 USA	n=1163 Pregnant women from a low socioeconomic black community, Hospital clinic, Structured interviews	CES-D, National Health interview Survey	Depressive symptoms and physical health	A significant reduction in the ability to climb stairs (aOR 1.95, 95% CI 1.46-2.60) and undertake moderate activities (aOR 1.74, 95% CI 1.30-2.32) was reported by women with symptoms of depression compared to women without symptoms of depression
Jablensky et al. 2005 Australia	n=3174 children of women with schizophrenia or major effective disorders n=3129 children of women without a psychiatric disorder Case control study	Data from Mental health information system and medical records	Pregnancy complications and psychiatric conditions during pregnancy	Women with schizophrenia were significantly more likely to have a placental abruption (aOR 3.17, 95% CI 1.55-6.49), or placenta praevia (aOR 2.13, 95% CI 1.15-3.94), which may account for the higher rates of antepartum haemorrhage (OR 1.60, 95% CI 1.11-2.32) found in women with bipolar disorder

Author/date Country of study	Sample size, recruitment and method	Data collection tools *	Outcomes considered	Results
Johnson and Slade 2002 UK	n=424 Pregnant Women at 32 weeks gestation Postal questionnaires	Wijma Delivery Expectancy Scale, STAI, expectations about mode of birth Medical records - birth details	Fear of childbirth and mode of delivery	No difference in the rate of women undergoing an emergency or elective caesarean section and the level of fear of childbirth were found. Nulliparous women had significantly higher levels of fear of childbirth than multiparous women (*p*<0.001)
Sheen and Slade 2017 UK	Meta synthesis of 25 papers	N/A	Identify predictors of fear of birth	Several causes for fear of childbirth were identified; fear of the unknown, pain, damage to themselves or their baby, ability to give birth and lack of control
Smedberg et al. 2015 Norway	n=4295 Pregnant women Cross sectional study across 15 countries, questionnaires	EPDS, Socio demographic and lifestyle characteristics, Physical health	Relationships between depression and smoking during pregnancy	Depression was higher in women who continued smoking during pregnancy compared to women who stopped smoking when pregnant (*p*<0.001). An association was found between women who continued smoking in pregnancy and depression (OR 2.02, 95% CI 1.50-2.17), the prevalence of continuing smoking was twice as much in women who were depressed. A relationship between low education level (OR 4.46, 95% CI 2.27-7.32) and depression was identified

285

Author/date Country of study	Sample size, recruitment and method	Data collection tools *	Outcomes considered	Results
Storksen et al. 2015 Norway	n=1789 Questionnaires were completed at 17 and 32 weeks gestation and eight weeks after birth Secondary analysis on a longitudinal study	Medical records Wijma Delivery Expectancy, Oslo Social Support Scale, Abuse Assessment Screen, EPDS, Hopkins Symptom Check List, Previous birth experience	Associations between fear of childbirth and elective caesarean section	Previous negative birth experience (aOR 7.6, 95% CI 3.8-15.2, *p*=0.001), anxiety and depression combined (aOR 6.1, 95% CI 3.3-11.2, *p*=0.001) and poor social support (aOR 3.8, 95% CI 1.9-7.6, *p*=0.001) were significant predictors for fear of childbirth. Previous negative birth experience was highly predictive of elective caesarean section (aOR 8.1, 95% CI 3.9-16.7). Women with a fear of childbirth expressed a strong preference for an elective caesarean section (aOR 4.6, 95% CI 2.9-7.3) although the majority (87% n=117) of women with a fear of childbirth (n=134) did not receive a caesarean section

Maternal mental health and the outcome for the baby and child

Author/date Country of study	Sample size, recruitment and method	Data collection tools *	Outcomes considered	Results
Calderon-Margalit et al. 2009 USA	n=2793 Pregnant women <20 weeks gestation Prospective cohort study. Interviews at antenatal clinics	Medical records	Psychotropic medication in pregnancy and the risk of preterm birth	Women taking benzodiazepines during pregnancy (n=85) were significantly more likely to have a preterm birth (*p*<0.001) and give birth to a low birth weight (<2500g) baby (*p*=0.001) but no association was found with small for gestational age. Women taking selective serotonin reuptake inhibitor medication (antidepressant) (n=138) were significantly more likely to give birth to a low birth weight baby but only when medication was commenced in the second or third trimester (*p*=0.015)

Author/date Country of study	Sample size, recruitment and method	Data collection tools *	Outcomes considered	Results
Fineberg et al. 2015 USA	n=95 case, n=206 control, children of women Longitudinal birth cohort study Interviews with pregnant women recruited in antenatal clinics	Medical records	Stress during pregnancy and the risk of schizophrenia spectrum disorders in the child	A large birth cohort indicated maternal daily stresses in pregnancy were linked to a significant increase in schizophrenia spectrum disorders in male children (aOR 1.995, 95% CI 1.061-3.750, p=0.032) compared to offspring without schizophrenia spectrum disorders
Grote et al. 2010 USA	Meta-analysis of 29 articles	N/A	Associations between preterm birth, low birth weight and intrauterine growth restriction and antenatal depression	Significant association were found between antenatal depression and preterm birth (RR 1.13, 95% CI 1.06-1.21) and low birth weight (RR 1.18, 95% CI 1.07-1.30), but no significant association with intrauterine growth restriction Some of the significant differences between antenatal depression and low birth weight in developing countries (RR 2.05, 95% CI 1.43-2.93) compared to the United States (RR 1.10, 95% CI 1.01-1.21) and European countries (RR 1.16, 95% CI 0.92-1.47)

Author/date Country of study	Sample size, recruitment and method	Data collection tools *	Outcomes considered	Results
Hay et al. 2008 UK	n=171 Pregnant women from low socioeconomic communities. Interviews in the second and third trimester and at three and 12 months after birth	Clinical Interview Schedule 9. Schedule of affective disorders and schizophrenia	The relationship between antenatal and postnatal depression and outcomes for adolescent children	The outcome for children of mothers who were depressed depended on whether depression occurred before or after birth. Of the women (n=38) with symptoms of depression in pregnancy and 26 weeks after birth, only five women with antenatal depression had no episodes after birth. Postnatal depression significantly affected the IQ especially in boys (*p*<0.001) and were predicted by the extent of maternal depression after three months of age
Martini et al. 2010 Germany	n=992 mother child pairs. Community sample of a longitudinal study. Interviews	DSM-IV. Medical records	Relationship between anxiety disorders in pregnancy and self-perceived distress during pregnancy in relation to neonatal and child outcomes	Anxiety disorders were associated with child anxiety disorders such as phobias, generalised anxiety and obsessive compulsive disorder (OR 1.4, 95% CI 1.1-1.9). High self-perceived distress during pregnancy was not associated with child anxiety disorders, but was associated with preterm birth (OR 3.4, 95% CI 1.5-7.9), lower APGAR scores at birth, (OR 2.8, 95% CI 0.9-7.9, *p*=0.054), conduct disorder (OR 5.0, 95% CI 1.2-21.3), and attention deficit hyperactivity disorder (OR 4.7, 95% CI 2.2-10.0)

Author/date Country of study	Sample size, recruitment and method	Data collection tools *	Outcomes considered	Results
Moehler et al. 2006 Germany	n=101 mother infant dyads Postnatal women two and six weeks and four and 14 months after birth	Symptom Checklist 09 R, EPDS, Postpartum Bonding Questionnaire	Postnatal depression and bonding	Depression symptoms four months after birth correlated with bonding at two (r =0.28), six (r =0.39), sixteen weeks (r =0.35) and fourteen months (r =0.28) after birth
O'Connor et al. 2003 UK	n=6996 Mothers with self-reported anxiety and depression Longitudinal study Postal survey at 32 weeks gestation	Crown Crisp index, CES-D, EPDS, Strengths and Difficulties Questionnaire Medical records	Antenatal anxiety and behavioural or emotional problems in children	A significant increase in emotional and behavioural problems of children at 47 and 81 months of age were found. Higher rates were found at 81 months in boys (OR 2.16, 95% CI 1.26-2.89) compared to girls (OR 1.91, 95% CI 1.41-3.30). Rates were similar at 47 months of age suggesting a persistent effect
Taka-Eilola et al. 2019 Finland	n=10521 mother children dyads Pregnant women 24-28 weeks gestation Large cohort study Interviews in antenatal clinic	Interview questions about depression Medical records	Antenatal depression and severe mental health in children	Children of women with antenatal depression (n=1462) had an elevated risk for depression (aOR 1.5, 95% CI 1.03-2.2) compared with children of women without antenatal depression. Children of mothers who had antenatal depression and one parent with a severe mental disorder had an elevated risk (aOR 3.3, 95% CI 1.8-6.2) of developing severe depression or schizophrenia compared to children of mothers with only antenatal depression (aOR 1.2, 95% CI 0.8-1.9) or severe mental illness (aOR 1.5, 95% CI 0.96-2.4)

Author/date Country of study	Sample size, recruitment and method	Data collection tools *	Outcomes considered	Results
Wieckowski et al. 2017 USA	n=8,951,763 Retrospective cohort study	Medical discharge records ICD-9, DSM-IV	Relationship between maternal psychiatric disorders and autism in their children	Women with chronic depression had the highest relative risk of having a child develop autism compared to those with other psychiatric conditions (aRR 2.75, 95% CI 1.38-5.51). Women were 1.2-2.8 as likely to have a child with autism if they had diagnosed mood disorder, anxiety or schizophrenia (RR 1.97, 95% CI 1.83-2.12) compared with women without these conditions
Maternal mental health and the effect on the family				
Boath and Cox 1998 UK	n=60 Postnatal women with depression Survey	Qualitative	The effect of postnatal depression on the family	Surveys were completed by their partners (n=23), siblings (n=2), parents (n=2) and grandparent (n=1). Issues such as loss of work, leading to financial concerns and worrying about their partner resulted in stress which in turn put pressure on their relationship
Dennis 2004 Canada	n=594 Pregnant women or one week after birth Postal survey at one, four and eight weeks after birth	EPDS, Short form health survey questionnaire	Relationship between depression and use of health services	Women with symptoms of depression had a significantly higher number of contacts with a general practitioner at one month (p=0.004) and two months (p=0.01), public health nurse at one month (p=0.001) and two months (p=0.002) and walk in clinic at two months (p=0.008). General health (p=0.03), pain (p<0.001) and physical function (p=0.01) were also significantly lower in women with symptoms of depression compared to those without symptoms

Author/date Country of study	Sample size, recruitment and method	Data collection tools *	Outcomes considered	Results
Tammenite et al. 2004 Finland	n=373 mothers n=314 fathers Questionnaires	EPDS, Family Dynamics Measure II	The effect of postnatal depression on the family	Poor dynamics between the couples were found where mothers had EPDS of ≥13 (13%) after birth. Women with depression had poorer family dynamics than non-depressed women (p<0.001)
Grajkowski et al. 2016 USA	n=400 Pregnant women <15 weeks gestation Retrospective cohort study	EPDS Medical records	The relationship between depression and use of health services	High use of services was defined as four or more unscheduled visits during pregnancy or the first eight weeks after birth. Women with symptoms of depression were significantly more likely to use services compared to those without symptoms (aOR 1.12, 95% CI 1.53-3.90). They were also more likely to have a history of depression (p<0.001), anxiety (p<0.001) or other mental health disorder (p=0.001) and smoke (p=0.022), than women without depression

* Only scales relevant to this study were reported

BDI – Beck's Depression Inventory; CES-D – Centre for Epidemiological Studies – Depression; DAS – Dyadic Adjustment Scale; DASS – Depression, Anxiety, Stress Scale; DSM – Diagnostic and Statistical Manual of Mental Disorders; EPDS – Edinburgh Postnatal Depression Scale; HRQoL – Health Related Quality of Life; ICD – International Classification of Diseases; MSSS – Maternal Social Support Scale; MPSS – Measure of Perceived Social Support; MSPSS – Multidimensional Scale of Perceived Social Support; PPP – Prenatal Psychosocial Profile; PSRFQ – Psychosocial Risk Factor Questionnaire; PSS – Perceived Stress Scale; RSES – Rosenberg Self-Esteem Scale; SES – socioeconomic status; STAI – State-Trait Anxiety Inventory; SSS – Social Support Scale

Appendix 2 Systematic literature search – Social support

A systematic search was performed to review articles previously published comparing social support, self-efficacy, financial and social status and mental health. The question asked was 'Does social support and self-efficacy have an influence on perinatal mental health?' The following subject headings were used as a basis for the search strategy: *pregnant*, *support networks* and *mental health issues*. These were then broken down into key words or phrases for each subject heading, for example, *support networks* led to key words including *self-esteem*, *social support* and *self-efficacy* (Table A2.1).

Table A2.1. Key words used in the literature search.

Support networks	1	self-esteem
	2	self-efficacy
	3	social support
	4	socioeconomic status
	5	1 or 2 or 3 or 4
Pregnancy	6	antenatal
	7	perinatal
	8	prenatal
	9	maternal
	10	pregnant or pregnancy
	11	6 or 7 or 8 or 9 or 10
Mental health issues	12	mental health
	13	depression
	14	anxiety
	15	stress
	16	12 or 13 or 14 or 15
Overall search	23	5 and 11 and 16

The following online databases where searched: CINAHL via EBSCO, Cochrane, Joanna Briggs Institute, MEDLINE and PsycINFO via Ovid, ProQuest including British Nursing Index and ASSIA, Trip Pro and UpToDate (Table A2.2). Filters were applied to narrow the year range from 2000 to 2017. This initial search resulted in thousands of articles for review. The search inclusion criteria were tightened and restricted to studies published in English and limited to studies carried out in the UK, Europe, Canada, USA, Australia and New Zealand to obtain literature relevant to experiences of women in high-income countries with developed healthcare systems. Further searches were performed looking at grey literature which produced guidelines and publications for example, NICE, RCOG and WHO, to ensure a comprehensive review of all relevant literature. This produced 16,332 articles.

Table A2.2. Number of articles found from each source.

Database or source	Results
CINAHL via EBSCO	2092
Cochrane	0
Joanna Briggs Institute via Ovid	98
MEDLINE via Ovid	4771
ProQuest (including British Nursing Index/ASSIA)	5862
PsycINFO via Ovid	3508
Trip Pro	0
UpToDate	1
NICE	0
RCOG	0
WHO	0
Others	0

Accounts were created in all databases and searches saved to run automatically every month to capture new reports and research conducted during the study. These were narrowed down by abstract and title to 878 articles. After reviewing the abstracts and titles, studies which were only postnatal, not fitting the criteria above, validating screening tools, not using anxiety or depression screening tools or intervention studies were removed; the remaining 29 articles were reviewed in full. These were reduced to 14, removing four for not pregnancy related, three for tests of validity, one parenting self-efficacy and seven others which did not fit the inclusion criteria. A review of the studies can be found in the table below and are discussed in chapter two.

Author/date Country of study	Sample size and recruitment and method	Data collection tools *	Outcomes considered	Results
Akiki et al. 2016 Canada	n=1992 Recruited 10-20 weeks gestation Structured tele- phone interview	STAI-state, Stressful Life Events, RSES, three social support scales; Support from partner, family and friends, Pearlin Mastery Scale	Predicting STAI-State score Potential determinants of state anxiety in pregnancy against variables Effects of social support, mastery and self-esteem	Associations were found between STAI scores $p \leq 0.20$, these included education, income, marital status, prior fetal loss, age, stress, gestational age, mastery, self-esteem and, social support from friends, family, and partner. Multiple linear regression indicated an increase in social support from family ($p=0.029$), partner ($p=0.005$) and self-esteem was associated with a decrease in STAI scores ($p<0.001$). Social support, self-esteem, mastery did not moderate the association between the respective predictor variable and state-anxiety at a significance level of ($p<0.05$). After controlling for other factors in the multi variable model, there was a 0.088 SD decrease in anxiety for every week increase in gestational age ($p=0.036$) during the second trimester
Aktan 2012 Canada	n=177 3rd trimester and postpartum Recruited from antenatal classes, appointments and community groups	Socio demographic information, STAI-state	Relationships between social support and anxiety in pregnant and postpartum women	All five hypotheses were supported: social support decreased state anxiety in pregnancy ($p<0.001$) postpartum ($p<0.001$), social support during pregnancy reduced state anxiety after birth ($p<0.001$), social support reduced trait anxiety during pregnancy ($p<0.001$) and social support after birth reduced trait anxiety ($p=0.013$)

Author/date Country of study	Sample size and recruitment and method	Data collection tools *	Outcomes considered	Results
Bilszta et al. 2008 Australia	n=1578 Pregnant and postnatal women Prospective, non-randomized, naturalistic design, recruited through antenatal clinics	EPDS, PSRFQ	Assess the most Important factors associated with single mother status and elevated EPDS scores EPDS scores analysed on three groups of women, no partner support, very good support no partner Non partnered woman for further analysis. Dependent variable EPDS	Binomial logistic regression indicated single or unpartnered women were more likely to have had ≥2 weeks of depression before pregnancy (OR 1.836, $p<0.05$), a previous psychiatric condition (OR 3.658, $p<0.001$), emotional problems during the current pregnancy (OR 3.176, $p<0.01$) and experienced major life events in the last year (OR 2.330, $p<0.01$) Women with elevated EPDS were slightly younger than the total cohort ($p=0.050$), less likely to have Australia as their place of birth (OR 0.73, $p<0.01$), had a low income ($p<0.001$), a non-professional job ($p<0.01$) and were single ($p<0.01$). Backward binary logistic regression to predict antenatal EPDS scores suggest that this is mediated by previous psychiatric history (OR 1.911, 95% CI 1.107-3.299, $p<0.001$) and emotional problems during pregnancy (OR 7.689, 95% CI 4.536-13.034, $p=0.02$) Univariate analysis and multiple logistic regression indicated EPDS scores were significantly lower for single/unpartnered women than for women with unsupportive partners ($p<0.001$). Confirming that partner support is a crucial predictor for antenatal EPDS score

Author/date Country of study	Sample size and recruitment and method	Data collection tools *	Outcomes considered	Results
Emmanuel et al. 2012 Australia	n=473 36 weeks prenatal and 6,12 weeks postnatal Three hospitals	HRQoL short form-12 version 2, MHealth Survey, MSSS,	Relationship between demographic, social support and quality of life Partner status and social support and HRQoL-mental	Mothers with partners had higher scores on social support compared to those without partners Multiple regression indicated partner status with social support was highly correlated [VIF] = 3.71 Social support was the statistically significant predictor of HRQoL-mental during pregnancy (OR 0.32, 95% CI 0.02-0.58, $p<0.05$)
Glazier et al. 2004 Canada	n=2052 15-18 weeks gestation Self-reported data Antenatal/hospital visits	Socio demographic information, Social stress indicator, MPSS, CES-D, STAI	Correlation between symptoms of anxiety and depression, against age Stress, social support and symptoms of distress Significant relationships between SES, stress and social support and distress	ANCOVA, controlling for age, education and income revealed no group differences in anxiety or depression between participants who were immigrant or Canadian born, married or single and employed or unemployed Symptoms of anxiety and depression were inversely correlated with age ($p<0.01$), education ($p<0.01$) and family income ($p<0.01$). Median split of MPSS: high or low for each partner support, friends and family indicated higher levels of social support correlated with fewer symptoms of anxiety and depression Social support from friends and family ($p<0.05$) but not partners ($p>0.05$) was the only social support variable to show a negative relationship with distress. SES, stress and social support together explained 97% of the observed variance in distress

Author/date Country of study	Sample size and recruitment and method	Data collection tools *	Outcomes considered	Results
Isa Alfaraj et al. 2009 UK	n=43 Pregnant women <13 weeks gestation Recruited at antenatal clinic appointments	Questionnaire - demographic details and medical history, BDI, Positive Beliefs about Rumination scale, Perceived lack of social support	Perceived lack of social support	2 groups: depressed (BDI ≥11) n=21, non-depressed (BDI <11) n=22. Asymmetrical distribution in depressed and non-depressed groups. The depressed group reported significantly high levels of perceived lack of support (p=0.04) and positive beliefs about rumination (p=0.005). Binary logistic regression indicated perceived lack of social support, (p=0.03) and positive beliefs about rumination (p=0.002) were significant independent predictors of depression
Jesse et al. 2014 USA	n=318 16-28 weeks gestation Low income population in rural areas, recruited in antenatal centres	Socio demographic information, BDI-II, PPP Stress subscale based on the Daily Hassles Scale, Social Support Subscales, RSES	Social support and self-esteem on the relationship of antepartum stress and depressive symptoms	Single mediation analyses, indicated antepartum stress significantly predicted antepartum depressive symptoms (95% CI 0.378-0.563) and significantly predicted two mediators, satisfaction with social support and self-esteem (95% CI -0.445 and -0.221; 95% CI -0.330 and -0.138). Satisfaction with social support and self-esteem significantly predicted depressive symptoms controlling for antepartum stress (95% CI -0.318 and -0.072; CI -0.343 and -0.144). Multiple mediation analyses. Antenatal stress and depressive symptoms were partially mediated by higher levels of the internal resources of satisfaction with social support and self-esteem. Self-esteem had a greater influence on the relationship between antepartum stress and depressive symptoms than satisfaction did with social support

Author/date Country of study	Sample size and recruitment and method	Data collection tools *	Outcomes considered	Results
Jomeen and Martin 2005 UK	n=129 Pregnant women over 14 weeks gestation Convenience sample Two hospital antenatal clinics and community clinic	Self-reported questionnaire, CFSEI-2, EPDS, Hospital Anxiety and Depression Scale-A	Relationship of self-esteem anxiety (cut off 8) and depression (cut off 9/10) in relation to antenatal care	Self-esteem was significantly higher in all self-esteem subscales in non-depressed and non-anxious women. In the logistic regression, lower personal self-esteem was a significant predictor of depressed/non-depressed status ($p=0.001$) but not lower general ($p=0.80$) or social self-esteem ($p=0.17$). Lower personal self-esteem was a significant predictor of anxious/non-anxious status ($p=0.01$) but neither lower general self-esteem ($p=0.88$) or social self-esteem ($p=0.09$), was found to be significant predictors
Jonsdottir et al. 2017 Iceland	n=562 Non distress group, n=324 and Perinatal Distress Group n=397 pregnancy Information from midwife at booking clinic	Socio demographic information, EPDS, DASS, DAS, MSPSS	Identify association between dependent variable perinatal distress and the independent variables, social support and satisfaction in partner relationship	Significant differences were noted between the perinatal distress/non-distress groups and marital status, education, employment, division of household tasks, financial situation, smoking and mental health therapy. Multiple logistic regression indicated significant association with perinatal distress and mental therapy (OR 4.60), lower education (OR 3.72), friends support (OR 3.50) unemployment (OR 2.50), finance (OR 2.36) and marital status (OR 1.8). Dissatisfaction in partner relationship (aOR 4.59, 95% CI 2.22-9.45), smoking during pregnancy (aOR 3.83, 95% CI 1.25-11.86), unemployment (aOR 1.85, 95% CI 1.08-3.19), elementary or lower education (aOR 2.29, 95% CI 1.10-4.75) and division of household tasks (aOR 1.99, 95% CI 1.17-3.39) were independent predictors for perinatal distress

Author/date Country of study	Sample size and recruitment and method	Data collection tools *	Outcomes considered	Results
Miszkurka et al. 2012 Canada	n=5162 Recruited 8-20 weeks pregnant. Four large maternity hospitals, Routine appointments, Interview to collect data	Socio demographic information, Marital strain scale, CES-D, SSS, Lack of money for basic needs Assessment of Prenatal Stressful Life Events	Prevalence of depression and contextual risk factors The association between contextual risk factors and antenatal depressive symptoms	Comparison of immigrant (n=1400) and Canadian (n=3762) women. Logistic regression, all models were adjusted for working status, education, and parity. Canadian born women presented higher vulnerability to antenatal depression when lacking social support (OR =4.14, 95% CI 2.69-6.37) while immigrant women presented higher vulnerability to antenatal depression when lacking money for basic needs (OR =2.98, 95% CI 2.06-4.32)
Rudnicki et al. 2008 USA	n=150 Pregnant, lower income minority women, recruited in antenatal clinics in the 3rd trimester	Social Provisions Scale-social support, Avoidant coping and Denial, Mental Short Form of the Profile of Mood states – Depression Subscale	Relationship among the psychosocial factors, Avoidant coping and depressed mood, Depressed mood against SES class, planning of pregnancy, perceived social support, avoidant coping, Identify psychosocial correlates	Avoidant Coping was related to an unplanned pregnancy ($r=0.14$, $p<0.04$) and perceiving lower social support ($r=0.44$, $p<0.01$). Depressed mood during pregnancy was significantly associated with lower SES ($r=0.15$, $p<0.03$), unplanned pregnancy ($r=0.18$, $p<0.01$), lower perceived social support ($r=0.48$, $p<0.01$) and the use of avoidant coping ($r=0.56$, $p<0.01$). Bivariate regression analysis indicated perceived social support was significantly related to avoidant coping ($p<0.01$). Less social support satisfaction led to greater avoidant coping strategies, associated with higher levels of depressed mood: SES class ($p<0.05$); planning of pregnancy ($p<0.01$); perceived social support ($p<0.01$); and avoidant coping ($p<0.01$)

Author/date Country of study	Sample size and recruitment and method	Data collection tools *	Outcomes considered	Results
Schetter et al. 2016 Canada	n=5271 Pregnant women 24-26 weeks Multicentre cohort study Interviews	Socio demographic information, Antenatal anxiety using four item measure, PSS, Prenatal Life Events Scale, Early income adversity, Social Support Interview Schedule, RSES, Life Orientation Test	Associations between each potential variable and anxiety	Perceived stress associated with more unmet support needs ($r=0.30$) and lower self-esteem ($r=-0.46$). Pregnancy anxiety was lower in married Canadian born, higher family incomes, not having a first baby, more social support and higher self-esteem. Demographics, nulliparity and medical risk, were highly significant predictors of anxiety ($p<0.001$) with the exception of age and unemployment Multivariate regression analysis. Higher anxiety independently associated with first birth, lower perceived control, higher perceived stress, low self-esteem and more social support (noted to be inconsistent with other research), low optimism, life stressors e.g. low income

Author/date Country of study	Sample size and recruitment and method	Data collection tools *	Outcomes considered	Results
Zachariah 2004 USA	n=49 Low-income Pregnant women Convenience sample antenatal clinic, T1, 14-22 weeks gestation, T2, 28-40 weeks gestation (n=29)	Prenatal Attachment Inventory, Autonomy and Relatedness Inventory, Norbeck Social Support questionnaire, Life Events Questionnaire, STAI, General Wellbeing schedule	Psychological wellbeing and independent variables. Psychological wellbeing and attachment variables, social support, life stress and state and trait anxiety between early and late pregnancy	Paired t-tests between mid and late pregnancy indicated greater psychological well-being was related to stronger attachment to the woman's husband/partner ($p<0.001$), greater total functional social support ($p<0.05$) and aid (tangible support) ($p<0.01$)

Author/date Country of study	Sample size and recruitment and method	Data collection tools *	Outcomes considered	Results
Zelkowitz et al. 2004 Canada	n=119 Pregnant women Hospital recruited Initial screening questionnaire, then if eligible home assessment with interviews	Socio demographic information, EPDS, Stressful Life Events, Arizona Social Support Interview Schedule, DAS	Geographical areas and somatic symptoms, psychosocial risk factors Four scales of the DAS Predicted satisfaction with social support	Two groups EPDS <12 (n=69) and EPDS ≥12 (n=50). EPDS ≥12 had significantly poorer functional status than those scoring <12, on all five scales: physical, social and role functioning, pain and general health perceptions. EPDS ≥12 had significantly poorer dyadic adjustment on all four subscales: Dyadic Consensus (*p*<0.001), Dyadic Satisfaction (*p*<0.01), Affectional Expression (*p*<0.001) and Dyadic Cohesion (*p*<0.01) EPDS ≥ 12 reported significantly fewer network members across domains (*p*<0.01). EPDS scores >12 reported significantly fewer relatives (means of 0.7 vs. 1.6, *p*<0.05), fewer women (means of 3.8 vs. 4.7, *p*<0.05) and fewer people from the same ethnic background (means of 4.4 vs. 5.9, *p*<0.05) than did women with scores <12 on the EPDS. There was also less satisfaction with support across domains (*p*<0.01) and greater need for support across domains (*p*<0.01). Three variables showed a direct effect on depressive symptoms, accounting for 34% of the variance: need for social support; satisfaction with social support

* Only scales relevant to this study were reported

BDI – Beck's Depression Inventory; CES-D – Centre for Epidemiological Studies-Depression; DAS – Dyadic Adjustment Scale; DASS – Depression, Anxiety, Stress Scale; EPDS – Edinburgh Postnatal Depression Scale; HRQoL – Health Related Quality of Life; MSSS – Maternal Social Support Scale; MPSS – Measure of Perceived Social Support; MSPSS – Multidimensional Scale of Perceived Social Support; PPP – Prenatal Psychosocial Profile; PSRFQ – Psychosocial Risk Factor Questionnaire; PSS – Perceived Stress Scale; RSES – Rosenberg Self-Esteem Scale; SES – socioeconomic status; STAI – State-Trait Anxiety Inventory; SSS – Social Support Scale

Appendix 3 Systematic literature search – Interventions

The systematic search was conducted to review literature in relation to interventions to support women with mental health problems during pregnancy. The question asked was 'What interventions or support are there to improve women's mental health during pregnancy?' The following subject headings were used as a basis for the search strategy: *pregnant*, *interventions* and *mental health issues*. These were then broken down into key words or phrases for each subject heading for example *interventions*, led to key words including *intervention*, treatment** and *barriers* (Table A3.1).

Table A3.1. Key words used in the literature search.

Pregnant	1	pregnan*
	2	pregnant
	3	perinatal
	4	antenatal
	5	prenatal
	6	1 or 2 or 3 or 4 or 5
Interventions	7	intervention*
	8	treatment*
	9	care
	10	barriers
	11	experience*
	12	education
	13	access
	14	support
	15	7 or 8 or 9 or 10 or 11 or 12 or 13 or 14
Mental health issues	16	anxiety
	17	stress
	18	worry
	19	depression
	20	"mood disorder"
	21	"mental health"
	22	16 or 17 or 18 or 19 or 20 or 21
Overall search	23	5 and 15 and 22

The following online databases where searched: CINAHL via EBSCO, Cochrane, Joanna Briggs Institute, MEDLINE and PsycINFO via Ovid, ProQuest including British Nursing Index and ASSIA, Scopus, Trip Pro, UpToDate and Web of science. This initial search resulted in thousands of articles for review. The search inclusion criteria was tightened and restricted to studies published in English and limited to studies carried out in the United Kingdom, Europe, Canada, America, Australia and New Zealand to obtain literature relevant to experiences of women in high-income countries with

developed healthcare systems and further limited to dates 2000 to 2017. Further searches were performed looking at grey literature which produced guidelines and publications for example, NICE, RCOG and WHO, to ensure a comprehensive review of all relevant literature. This produced 20,506 articles (Table A3.2). Accounts were created in all databases and the searches were saved to run automatically every month to capture new reports and research conducted during the study.

Table A3.2. Number of articles found from each source.

Database or source	Results
CINAHL via EBSCO	1386
Cochrane	2179
Joanna Briggs institute via Ovid	51
Medline via Ovid	1765
PsycINFO via Ovid	2435
ProQuest (including British Nursing Index/ASSIA)	514
Scopus	4492
Trip Pro	1695
UpToDate	0
Web of science	5963
NICE	1
RCOG	1
WHO	1
Others	23

These were narrowed down by abstract and title to 191 articles. Of these, 66 were systematic or literature reviews, 76 on closer inspection were not relevant, six were protocols, five were specific interventions to reduce tokophobia, six were postnatal intervention and seven were interventions to prevent mental health deterioration, the remaining 53 articles were not interventions or were interventions not aimed to support mental health. An overview of the remaining 47 articles were reviewed. Discussion of the articles were presented in chapter two. Due to the number of articles, only those with statistically significant results and full studies were included in the table below. This amounted to 22 articles.

Author/date Country of study	Sample size and recruitment method	Aim of the intervention	Intervention	Results
Biggs et al. 2015 Australia	n=124 Men and women who had called the helpline in the perinatal period Service evaluation Postal or online survey	Support perinatal mental health for women and their families	Online support for men and women in the perinatal period concerned about their mental health	95% (n=117) agreed that they were provided non-judgemental support, 94% (n=116) had helped them The knowledge that the volunteers understood their concerns as they had 'been through' issues themselves was also seen as important
Breustedt and Puckering 2013 Scotland	n=4 vulnerable pregnant women Interviews Evaluation of intervention	Reduce anxiety and promote wellbeing	Six weekly group parenting classes based on psychological and practical techniques	Findings included a positive response, helping overcoming barriers, building relationships and improving mood
Coe and Barlow 2013 UK	n=44 Women with mild to moderate mental health problems during pregnancy and up to a year after birth and the volunteers Service evaluation Survey with women (n=42) and volunteers (n=80) and interviews with volunteers (n=14) and women (n=13)	Improve mental health and reduce social isolation	Perinatal Support project – volunteer befrienders provided emotional support and signposting on a one to one or group basis during pregnancy and up to one year after birth	A significant reduction in anxiety ($p<0.001$) and depression ($p<0.001$) and increased social support ($p=0.007$) were found in women supported by the scheme. A significant increase in the volunteers' self-esteem ($p<0.001$) from the beginning to end of the intervention Qualitative data indicated positive feeling of acceptance and not being judged, which improved socialising with others

305

Author/date Country of study	Sample size and recruitment method	Aim of the intervention	Intervention	Results
Davis et al. 2015 USA	n=46 Women <28 weeks gestation with symptoms depression or anxiety RCT	Reduce antenatal depression and anxiety	Eight week course of yoga (n=23) v treatment as usual (n=23)	A significant reduction was found in negative affect in the yoga group compared to treatment as usual (p=0.011)
Dimidjian et al. 2017 America	n=163 Depressed pregnant women attending a mental health research network site RCT	Reduce depression	Ten sessions of behavioural activation via phone/face to face (n=86) or treatment as usual (n=77)	The intervention group showed significant improvement in symptoms of depression (p=0.04), anxiety (p=0.014) and stress (p=0.002) at three months postpartum compared to the treatment group
Field et al. 2013 USA	n=44 Pregnant women with symptoms of depression, 20-24 weeks gestation RCT	Reduce depression and anxiety	12 weekly sessions of either 20 minute peer support group (n=22) or one hour of group psychotherapy (n=22)	A statistically significant decrease in symptoms of depression (p=0.005) and anxiety (p=0.01) in both groups
Field et al. 2013 USA	n=92 Pregnant women with symptoms of depression RCT	Reduce depression and anxiety	12 weekly group of combination of tai chi (n=46) and yoga or treatment as usual (n=46)	There was a reduction in depression (p<0.001), anxiety (p<0.01) and sleep disturbances (p<0.05) from baseline to the end of the study in the tai chi/yoga group

Author/date Country of study	Sample size and recruitment method	Aim of the intervention	Intervention	Results
Field et al. 2013 USA	n=92 Pregnant women with symptoms of depression RCT	Reduce depression and anxiety	Yoga (n=46) v social support (n=46) over 12 weeks	A significant decrease in depression (p=0.005) and anxiety (p=0.001) between the beginning of the first session and after the last session in the intervention group. Short term effects of yoga (pre to post first session) showed a significant decrease in depression (p=0.01) and anxiety (p=0.001) compared to the social support group. Long term there was a significant decrease in depression (p=0.001) and anxiety (p=0.001) in both groups from the first day of the intervention to follow up after the birth
Gaston and Prapavessis 2013 Canada	n=56 Pregnant women between 13 and 31 weeks gestation Community publicity, clinics and parenting groups RCT	Reduce depression and anxiety	Randomly allocated to one of three, four weeks plans: 1) Information on protection motivation theory 2) As above and an action plan 3) As two above plus a coping plan	After four weeks, results demonstrated an increase in vigour (p=0.001) and a reduction in anxiety (p=0.011), depression (p=0.004) and tiredness (p=0.01)
Grote et al. 2009 USA	n=53 Low income pregnant women with symptoms of depression RCT	Reduction in depression	Brief interpersonal psychotherapy of eight sessions during pregnancy and maintenance up to six months after birth (n=25) or enhanced usual care (n=28)	Significant reductions in depression symptoms prior to birth compared to the usual care (p<0.003). At three months post intervention none of the women had symptoms of depression compared to 70% of women in the intervention group (p<0.005)

Author/date Country of study	Sample size and recruitment method	Aim of the intervention	Intervention	Results
Grote et al. 2015 USA	n=168 low income pregnant women 12-32 weeks gestation, with symptoms of depression Referral from health practitioners RCT	A reduction in depression symptoms	Randomly allocated to enhanced care as usual, which included multidisciplinary team of support and mental health screening (n=85) or enhanced care plus an eight weekly session intervention prior to birth and maintenance session up to a year post birth (n=83)	Both groups showed a decrease in symptoms but there was a significant reduction of depression (p=0.02) at 12 months and anxiety (p=0.05) symptoms at 18 months post intervention in the intervention group Both groups showed a decrease in depression symptoms. There was a significant reduction in depression (p=0.01) and anxiety (p=0.04) in the intervention group
Harvey et al. 2012 Australia	n=79 Women Service Evaluation	To reduce perinatal mental health problems	A service for women in the perinatal period. An initial phone call followed by one to three, face to face appointments	Pre and post intervention scores showed significant decrease in depression, stress and anxiety (p<0.001)
Jesse et al. 2015 USA	n=146 Pregnant women six to 30 weeks gestation RCT	To reduce depression symptoms	Six, two hour sessions of a culturally tailored group cognitive behavioural therapy CBT) (n=72) or treatment as usual (n=74)	A significant reduction in the depression scores for African American women was identified in those receiving CBT (n=43) from baseline to completion of the intervention (p=0.02) and baseline to follow up one month later (p=0.04). A reduction in symptoms of depression from baseline to post intervention was found in both CBT (p<0.0001) and treatment as usual (p<0.001) groups

Author/date Country of study	Sample size and recruitment method	Aim of the intervention	Intervention	Results
Keenan et al 2014 USA	n=64 Women living in a low income, high stress environments who self-reported stress, 16 to 21 weeks gestation Double blinded RCT	Fatty acid supplements as a treatment of stress.	Fatty acid supplements (n=43) or placebo (n=21) which were taken daily during pregnancy	Levels of stress between groups were similar at 24 weeks gestation but showed a significant difference (p=0.029) in stress in the intervention group at 30 weeks gestation after controlling for negative life events and depression. Cortisol levels were also lower at 30 weeks gestation in women receiving supplements (p=0.041)
Kinser and Masho 2015 USA	n=14 Women, pregnant or after birth Convenience sample, qualitative exploratory design, focus groups	To understand women's experiences of participating in an antenatal yoga group	Attendance at a yoga class in the previous six months	Themes identified were, yoga was used as a way of helping women with stress and depression symptoms, providing time to themselves and getting to know other mothers. Women stated they found yoga classes more beneficial than other antenatal classes as they could be active rather than sit and be 'talked at'
Manber et al. 2010 USA	n=150 Pregnant women with depression between 12 and 30 weeks gestation Recruited via advertisements in publications and local clinics RCT	Reduction in depression	Allocated to the eight week intervention acupuncture specific group (n=52) or one of the control groups, general acupuncture (n=49) or massage (n=49)	All groups demonstrated a reduction in symptoms of depression. There was a statistically significant reduction in depression symptoms in the acupuncture specific for depression group compared to the group receiving nonspecific acupuncture (95% CI 0.01-0.92, p<0.05) but no difference in the third group receiving a massage (95% CI -0.10-0.76, p=0.13)

Author/date Country of study	Sample size and recruitment method	Aim of the intervention	Intervention	Results
McLeish and Redshaw 2015 UK	n=42 Pregnant and early postnatal women with complex needs Semi structured interviews Service evaluation of nine peer support projects	Understand the experiences of giving and receiving voluntary peer support	One to one or group peer support	Women described the benefit of the volunteers being 'like them', they valued support by someone who knew what they were going through, they also felt they could talk more freely than they would with professionals
McLeish and Redshaw 2017 UK	n=47 Women Semi structured interviews Service evaluation	Explore women's perceptions and experiences of organised peer support	Peer support, one to one and group support	The findings indicated women benefited from improved mood and self-esteem and reduced anxiety and feelings of loneliness
Milgrom et al. 2011 Australia	n=143 Pregnant women RCT	To reduce depression and anxiety	Intervention group received weekly telephone support, emotional health booklet and community groups (n=71) and the control group received community support and the booklet once the study was complete (n=72)	After controlling for baseline depression, symptoms of depression, anxiety and stress were significantly lower ($p<0.01$) in the intervention group 12 weeks after birth

Author/date Country of study	Sample size and recruitment method	Aim of the intervention	Intervention	Results
Segre et al. 2010 USA	n=19 Women on the Health start program accepting listening visits Demographic questionnaire, screening tools and Interviews at baseline, two and five months after last the last listening visit	To reduce depression symptoms and improve quality of life	Up to six home visits by training Healthy Start staff	A statistically significant reduction in depressive symptoms were reported on three depression scales ($p<0.01$), from pre to post intervention. These remained significant ($p<0.01$) at the five month follow up
Van Lieshout et al. 2016 Canada	n=34 Women during pregnancy or up to nine months after birth, with depression	Reduction in depression	Daily two hour group sessions of CBT, psychoeducation and discussion	Analysis showed a significant reduction in symptoms of depression ($p<0.001$) on two depression measures
Wariner et al. 2011 UK	Service review Two case histories and EPDS pre and post intervention	To support women with perinatal mental health problems	Multi-professional and multi-agency support and information for women during pregnancy or after birth, with mental health problems	A reduction in EPDS scores of 9.7 on average were noted in women with mild to moderate mental health issues using the service at the time of the review. The number of women this pertains to is not described

Appendix 4 Systematic literature search – Women's experiences

A systematic search was conducted to extract literature based on the question, 'what are the experiences of pregnant women with mental health issues?' An initial search in Google detected further key words for each subject heading, these were combined to produce the overall search strategy. The following subject headings were used as a basis for the search strategy, _pregnancy, mental health_ and _experiences and perceptions_. These were then broken down into key words or phrases for each subject heading, for example, _experiences and perceptions_ led to key words including _attitude*, opinion*_ and _perspective*_ (Table A4.1).

Table A4.1. Key words used in the literature search.

Experiences and perceptions	1	experience*
	2	attitude*
	3	opinion*
	4	perspective*
	5	view*
	6	patient attitude* (subject heading)
	7	1 or 2 or 4 or 5 or 6
Pregnancy	8	pregnancy (subject heading)
	9	pregna*
	10	perinatal
	11	antenatal
	12	prenatal care (subject heading)
	13	prenatal
	14	8 or 9 or 10 or 11 or 12 or 13
Mental health issues	15	mental* health*
	16	mental health (subject heading)
	17	psychiat*
	18	emotion*
	19	mood*
	20	depress*
	21	stress*
	22	anxious*
	23	anxiety
	24	mental* ill*
	25	mental* disorder*
	26	worr*
	27	distress*
	28	15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27
Qualitative search filter	29	qualitative studies (subject heading)
Overall search	30	7 and 14 and 29

Due to the vast quantity of articles found, advice was sought from the librarian and the subject heading qualitative was also added as a search filter. The following online databases were searched: ASSIA and British Nursing Index via ProQuest, CINAHL via EBSCO, Cochrane, EMBASE, Joanna Briggs Institute, MEDLINE and PsycINFO via Ovid, Ovid Emcare, Scopus, Trip Pro, UpToDate and Web of science. Filters were applied to narrow the range from year 2000 to 2017. Further searches were performed looking at grey literature which produced guidelines and publications for example, charities, RCOG, NICE and WHO to ensure a comprehensive review of all relevant literature. The search inclusion criteria were then tightened and restricted to studies published in English and limited to studies carried out in the UK, Europe, Canada, USA, Australia and New Zealand to obtain literature relevant to experiences of women in high-income countries with developed healthcare systems (Table A4.2).

Table A4.2. Number of articles found from each source.

Database or source	Results
ASSIA via ProQuest	2396
British Nursing Index via ProQuest	1823
CINAHL via EBSCO	1246
Cochrane	50
EMBASE via Ovid	821
Joanna Briggs institute via Ovid	3
MEDLINE via Ovid	595
Ovid Emcare	519
PsycINFO via Ovid	17
Scopus	499
Trip Pro	1313
UpToDate	0
Web of science	1013
NICE	0
RCOG	1
WHO	0
others	22

This produced 9255. Accounts were created in all databases and the searches were saved to run automatically every month to capture new reports and research conducted during the project. An additional 22 articles were identified from other sources. Duplicates (n=108) were then removed leaving 4592 articles. The titles were assessed for relevance and to see if they fitted the criteria. This resulted in 53 articles. From these a closer review of title and abstract excluded 21 leaving 32 for full review, when read in depth another 18 were excluded leaving 14 for the final review. One study was

added in 2018, from the monthly automatic updates, resulting in 15 articles for review. A review of the studies can be found below and are discussed in chapter two.

Author/date and Country of study	Sample size and recruitment	Aims	Data collection	Analysis and results
Bennet et al. 2007 Canada	n=19 Women diagnosed with depression in pregnancy, relatively high socioeconomic status, recruited via a mental health programme Up to 2 and half years after pregnancy	The aim of this research was to explore women's experiences of depression during pregnancy and to develop a theoretical model for the processes they used to manage their depression.	In-depth semi-structured individual interviews	Constructivist grounded theory Loss of control, doubts about their ability, irrational emotions, inability to function, invasive thoughts, social withdrawal, anxiety, navigating the healthcare system, gaining knowledge and looking for information
Boots family trust alliance 2013 UK	n=1547 Women who had experienced mental health problems. Self-selected sample	Experiences of mothers who experienced mental health issues in the perinatal period, impact and services	Survey	Described feelings anger, tearful, low mood, Causes explained as the pressure to do things right, lack of support, hormonal changes. One in ten didn't recognise symptoms at the time, 28% hid the symptoms, 46% said they were not completely honest about their illness. Barriers were staff too busy, they didn't ask or they appeared busy. 45% said they did tell their husband first and 25% health professionals and thirdly family 13%
Byatt et al. 2013 USA	n=27 Women with self-reported symptoms depression anxiety or emotional distress, 3-36 months after delivery recruited thorough community organisation	Examine patients' perspectives on patient-, provider- and systems-level barriers and facilitators to addressing perinatal depression in outpatient obstetric settings	Focus groups open ended questions	Grounded theory approach Findings included, fear of stigma, negative experiences of care providers, feeling judged, lack of knowledge and skills of professionals, not asked questions about mental health and limited access to mental health care

315

Author/date and Country of study	Sample size and recruitment	Aims	Data collection	Analysis and results
Edge 2006 UK	n=13 Black Caribbean women 6 to 12 months after birth Purposive sample recruited in antenatal clinic	To explore Black Caribbean women's beliefs about perinatal depression	In depth qualitative interviews	Thematically analysed using constant comparative approach. Poor understanding of mental health conditions, reluctant to take medication, cultural issues – keep problems within the family
Fuber et al. 2009 UK	n=24 Pregnant women who attended specialist midwives' clinic for psychological distress 7 to 39 weeks gestation Purposive sampling	The experiences of women who self-reported mild to moderate psychological distress	Digitally collected data from semi structured interviews in the hospital or participants home	Framework analysis. Three themes of the causes of, impact of and ways of controlling psychological distress
Henderson and Redshaw 2013 UK	n=5332 Data from a national maternity survey Data completed three months after childbirth	Experience of various health problems including anxiety and depression in the antenatal and postnatal period	Cross sectional study Secondary analysis of survey data Quantitative only	Logistic regression models, anxiety 14% antenatal and 5% postnatal, being in a BME group, residence in the most disadvantaged quintile, having a long-term mental health problem, and the pregnancy being unplanned and unwelcome were significantly associated with experiencing antenatal anxiety Women with antenatal anxiety were more likely to perceive their interactions with staff as negative

316

Author/date and Country of study	Sample size and recruitment	Aims	Data collection	Analysis and results
Henderson et al. 2018 UK	n=4578/352 Women with mental health problems, 3 months after delivery. Random sample	To describe the effects of support, advice and treatment on outcomes in the postnatal period	Survey data, Socio-demographic characteristics, questions around access, support and treatment	Descriptive statistics and logistic regression 7.7% (n=352) declared mental health problem Significant mental health problems reported in women <30 years, ethnic minorities, multiparous women, deprivation, previous mental health problems, learning difficulties, health problems affecting the pregnancy or pregnancy specific problems Women with mental health problems were significantly more worried about labour and birth, and less satisfied with their experience of birth, finding it especially stressful and had a more negative perception to staff
Higgins et al. 2016 Ireland	n=20 Women with previous or current mental health problems, pregnant or up to 2 years postnatal. Multiple advertising then snowballing recruitment	To explore the views and experiences of women with mental health difficulties	Descriptive design, in depth face to face interviews Interviewed half in pregnancy and half after birth	Inductive thematic process 4 themes, Fragmented care, feeling misunderstood, veil of secrecy and way forward
Jess et al. 2009 USA	n=21 Low income women, pregnant or recently pregnant recruited in an antenatal clinic. 16 African American and five White	To explore barriers to seeking help for depressive symptoms in pregnancy.	Semi structured focus groups + 1 individual interviews	Content analysis. Barriers to seeking help - 4 themes identified, lack of trust, judgment/stigma, dissatisfaction with health care system and not wanting help. Overcoming barriers to seeking help - 2 themes, facilitating trust and offering support and help

317

Author/date and Country of study	Sample size and recruitment	Aims	Data collection	Analysis and results
Lee King 2014 USA	n=32 Pregnant or up to 1 year after birth, with depression, low socioeconomic status Purposive stratified sample	To explore women's understanding of their perinatal experience associated with symptoms of depression	4 moderately structured, open ended focus groups interviews	Qualitative descriptive study design, content analysis. Those with inadequate resources and support noted the extra strain pregnancy placed on their physical and emotional health. Themes addressed partner support, finances and social support
Kopelman et al. 2008 Canada	n=1416 Pregnant women 6-26 weeks gestation Recruited from four maternal health centres or obstetric clinics	Individual level factors impacting women's access to mental health treatment for depression	Mixed methods approach Survey (n=1416) socio-demographic data, BDI, barrier and access questions Six focus groups (n=28)	Themes extracted using an iterative approach. Stigma, lack of treatment, lack of knowledge about depression in pregnancy, negative experiences of health professionals, the importance of support from partners, family and friends. Results from the survey indicated women with depressive symptoms (n=183) were more likely than women without symptoms (n=1233) to suggest issues such as cost ($p<0.001$), transport ($p<0.001$), long waits for treatment ($p<0.01$) and previous negative experiences ($p=0.001$)
McKillop et al. 2010 Canada	n=6 Pregnant women scoring 10-12 on the EPDS	Women's lived experience of poor mental health in pregnancy	One to one interview	Hermeneutic phenomenological study Manen's three approaches to thematic analysis 5 themes, disconnection, loss of identity, physical and emotional, insecurity, emotions

Author/date and Country of study	Sample size and recruitment	Aims	Data collection	Analysis and results
Raymond 2009 UK	n=9. Low socioeconomic women, with depression during pregnancy, 6 weeks to 1 year after delivery Opportunistic sampling through clinics, GP, nurseries	To explore the experiences of depression during pregnancy To identify and develop local support for women with antenatal depression	Retrospective study Semi structured interviews	Qualitative approach informed by constructivism, thematic analysis of data. Emotional isolation and fragmented care reported. Information searched online. Looked for support, face to face or online. Keen to talk after the event but had not disclosed issues during the pregnancy to family friends or health professionals
Raymond et al. 2014 USA	n=37 Pregnant or with a child under 1 year old. No indication of how many in each category Recruited from health clinics in disadvantaged areas of the city	Information on the mental health needs of women during the perinatal period.	Qualitative 7 Focus groups in the clinic	Analysis not defined. 13 themes related to mental health needs - help currently access and support wanted. Included dealing with changing moods, depression, feelings of isolation, worrying and a sense of being burdened and the effects of social and economic stress
Staneva et al. 2017 Australia	n=18 Depression and or anxiety 2nd or 3rd trimester Self-selected sample via advertising in local libraries, health centre and shops	To explore views, experiences, of psychological distress in the antenatal period	In depth interviews via phone or face to face	Braun and Clarke thematic analysis within a critical realist theoretical framework. Findings included – making sense of mood, how women understood their physical changes and experiences, understanding relationships, feeling pulled in all directions and being aware of life changes due to pregnancy, control, decision making

Appendix 5 Systematic literature search – Midwives' experiences

The systematic search was conducted to review midwives' experiences of caring for women's mental health during the perinatal period. Further literature was obtained from searching the reference lists of relevant articles. The following subject headings were used as a basis for the search strategy, *pregnant*, *experiences* and *mental health issues*. These were then broken down into key words or phrases for each subject heading, for example *pregnant* led to key words including *antenatal*, *pregna** and "*pregnancy+*" (Table A5.1).

Table A5.1. Key words used in the literature search.

Pregnant	1	"prenatal care"
	2	perinatal
	3	antenatal
	4	"pregnancy+"
	5	pregna*
	6	1 or 2 or 3 or 4 or 5
Experiences	7	midwi*
	8	"patient attitudes"
	9	view*
	10	perspective*
	11	opinion*
	12	attitude*
	13	perception*
	14	experience*
	15	7 or 8 or 9 or 10 or 11 or 12 or 13 or 14
Mental health issue	16	mental* health*
	17	"mental health"
	18	psychiat*
	19	emotion*
	20	"mental illness"
	21	maternal mood disorder*
	22	depress*
	23	stress*
	24	anxiety
	25	anxious*
	26	mental* ill*
	27	mental disorders
	28	worr*
	29	16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29
Filter	30	"qualitative studies+"
Overall search		6 and 15 and 29 and 30

The following online databases were searched Medline and CINAHL via EBSCO, Cochrane, Joanna Briggs Institute, MEDLINE and PsycINFO Via Ovid, ProQuest including British Nursing Index and ASSIA, Trip Pro, and, UpToDate. Filters were applied to narrow the range from year 2000 to 2017 and the search inclusion criteria tightened and restricted to studies published in English and limited to those carried out in the United Kingdom, Europe, Canada, America, Australia and New Zealand to obtain literature relevant to experiences of women in high-income countries with developed healthcare systems. Further searches were performed looking at grey literature which produced guidelines and publications for example, NICE, RCOG and WHO, to ensure a comprehensive review of all relevant literature. This produced 1,632 articles. Accounts were created in all databases and the searches were saved to run automatically every month to capture new reports and research conducted during the study (Table A5.2).

Table A5.2. Number of articles found from each source.

Database or source	Results
CINAHL via EBSCO	249
Cochrane	0
Joanna Briggs Institute via Ovid	0
MEDLINE via EBSCO	549
ProQuest (including British Nursing Index/ASSIA)	541
PsycINFO via Ovid	56
Trip Pro	237
UpToDate	0
NICE	0
WHO	0
RCOG	0
RCM	1

These were narrowed down by abstract and title to 193 articles. Of these 43 were reviewed in full, 17 on closer inspection were not relevant for example reviews, editorials, systematic reviews and standards or only relating to the postnatal period. The remaining 26 articles are discussed in chapter two and presented below.

Author/date Country of study	Sample size and recruitment	Data collection method	Study aim	Results
				Knowledge, skills and experience
Byatt et al. 2012 USA	n=28 Health care professionals, including nurses, doctors, care assistants, social workers and support staff	Focus groups Grounded theory approach	Explore health care professionals' perspectives on barriers and facilitators to addressing mental health in the perinatal period	Identified provider, patient and system level barriers and facilitators. Barriers included a lack of resources, skills and confidence of staff and stigma and fear from women. Peer support, discussions with health care professionals and psychoeducation were noted as facilitators
Edge 2010 UK	n=42 Health care professionals including midwives (n=25)	Individual interviews and focus groups	To explore health care professionals' understanding of mental health among black and minority ethnic women	One hospital doctor stated they were more concerned about pre-existing physical conditions such as diabetes, than previous postnatal depression. Midwives and health visitors felt they lacked training and skills to manage perinatal mental health conditions regardless of ethnicity. Healthcare professionals were observed not following guidelines set out by NICE (2014) and some health visitors stated a negative attitude towards the EPDS
Hauck et al. 2015 Australia	n=238 Midwives Cross sectional survey	Questions and vignettes of women with various mental health conditions	To explore midwives' knowledge and attitudes to women with mental health problems and training needs	Only 37.6% of midwives felt confident supporting women. Requests for training around personality disorders (77.8%), impact on childbearing (74.2%) and handling aggression (57.8%). Most midwives (87.7%) accepted it was part of their role to assess women with mental health problems

Author/date Country of study	Sample size and recruitment	Data collection method	Study aim	Results
Jarrett 2014 UK	n=7 Final year student midwives on the shortened midwifery programme	Thematic analysis of data obtained from group interviews	To explore the attitudes of student midwives near the end of their midwifery training in relation to women with mental health problems	Described observing women's attitude and behaviour as a way of assessing their mental health. Suggested that the words 'anxiety' and 'depression' were replaced with 'emotions' as they felt the direct questions were too direct and 'harsh'. One student mentioned being frightened by women with severe mental health conditions
Jarrett 2015 UK	n=33 Student midwives in the last few weeks of their training	Exploratory descriptive design using a survey	To explore the knowledge and experience of caring for women with perinatal mental health problems	Reported they always asked pregnant women questions about current and past mental health issues at the booking clinic. Over 90% stated they felt confident asking questions and 97% stated that women had disclosed issues. 64% did not feel confident looking after women with severe mental health problems whereas they rated their confidence higher in looking after women with complicated pregnancies such as pre-eclampsia (78%) and gestational diabetes (85%)
Jomeen et al. 2009 UK	n=52 Midwives from two hospitals	Cross sectional questionnaire survey design	To explore midwives training and experience of antenatal depression	73% of the midwives had cared for women with antenatal depression and 90% agreed it affected women's daily lives, 42% have received training about antenatal depression, of these 55% stated the quality of training on the subject was poor

323

Author/date Country of study	Sample size and recruitment	Data collection method	Study aim	Results
Jomeen et al. 2013 UK	n=5 Health visitors	Focus groups, pre and post training Thematic analysis using an inductive approach	To explore health visitors knowledge and confidence of supporting women's mental health	Four themes, recognising the problem, questioning and identification, what to do and support to identify and assess women. Health visitors recognise mental health problems could occur in pregnancy. They felt there was less stigma and women were more open to discuss mental health
Jones et al. 2012 Australia	n=815 Midwives	Postal survey questions on case studies	Midwives' understanding of depression	63.3% correctly recognised depression and 82.4% correctly stated that they thought the woman required assistance. 69.1% stated they screened women for symptoms of depression both before and after birth, 54.0% using the EPDS. Midwives suggested support for depression could come from their partner (52.4%), family or friends (51.8%) and counselling (49.0%) during pregnancy. In the postnatal period they suggested the help should come from a psychologist (68.2%), counselling (67.0%), psychiatrist (58.6%) and general practitioner (58.2%). The majority stated antidepressants were appropriate for use postnatally (93.2%), just under two thirds (61.5%) suggested they were used in the antenatal period

Author/date Country of study	Sample size and recruitment	Data collection method	Study aim	Results
Jones et al. 2011 Australia	n=815 Midwives	Postal surveys	Midwives' understanding of antenatal and postnatal depression	96% (n=708) midwives were aware that anxiety and depression can occur in the pregnancy and after birth and 67.2% had reasonable knowledge of depression and in pregnancy and after birth, but a higher percentage correctly answered questions about postnatal depression (70.7%) than antenatal depression (62.9%) 30.8% (n=248) described their training as adequate and 14.9% (n=120) as not adequate. 35.6% (n=285) indicated they needed more training to improve their skills
McCann and Clark's 2010 Australia	n=38 First year student midwives	Questionnaire with questions relating to a vignette of a woman with schizophrenia	To examine student midwives' understanding of mental health in the perinatal period	Students' level of information was the same as a lay person. They recognised woman who had mental health problems and understood they needed professional support. They were aware of antidepressants and antipsychotic medication and suggested them as helpful. Information on the consequences of unsupported mental health conditions was lacking
McGookin et al. 2017 UK	n=25 Student midwives	Survey (n=25) and individual semi structured interviews (n=7). Thematic analysis	Explore student midwives' knowledge and experience of antenatal anxiety	Anxiety was seen as a normal part of pregnancy, unlike depression, and was not seen as a priority in the antenatal clinic. Students understood their role in assessing women and were keen for clinical and theoretical information about antenatal anxiety

Author/date Country of study	Sample size and recruitment	Data collection method	Study aim	Results
Lees et al. 2009 UK	n=151 Health care professionals including midwives and student midwives	Structured questionnaires completed by 34 midwives and 19 student midwives, focus groups with 50 midwives and 18 student midwives	To understand health professionals' knowledge and skill in regard to perinatal mental health	The consultant in perinatal mental health team was able to identify more sources of support than the rest of the team and their knowledge was adequate. Midwives were aware of the importance of the booking appointment to identify and record mental health history. Students felt there was no set process for referral. 31 (91%) felt their knowledge was inadequate. All health visitors reported using the EPDS in practice. Five (71%) obstetricians stated they had no training to prepare them to support women's mental health
Phillips 2015 UK	n=9 Student midwives at the end of three years training	Two focus groups	To assess student midwives' understanding of perinatal mental health	Students showed an awareness of mental health problems and had some knowledge about the stigma felt by women. When they had concerns over women with mental health, they stated midwives were dismissive. Students reported qualified midwives being afraid of discussing mental health in case they 'opened a can of worms' and were regarded as slow if they took time to assess women's mental health. Gaps were noted in students' knowledge in relation to looking after women with severe mental illness, stating they were scared and not trained to deal with situations where women become aggressive

Author/date Country of study	Sample size and recruitment	Data collection method	Study aim	Results
Rothera and Oats 2008 UK	n=39 Health visitor (n=4), midwives (n=4), general practitioner (n=3), mental health practitioner (n=2), community psychiatric nurse (n=8), obstetrician (n=5), psychiatrist (n=9), health services manager (n=4)	Focus groups with patients and interviews with health professionals	To identify problems in the management of mental health problems in the perinatal period.	Non specialists felt they lacked knowledge and skills to manage the whole range of perinatal mental health problems and were unsure of the referral process. Poor access of psychiatric services, difficulty getting specialist advice and information from psychiatric colleagues and unclear of each professional's roles and responsibilities were barriers noted
Rothera and Oats 2011 UK	n=768 health visitors (n=276), midwives (n=468) and obstetricians (n=24)	Survey using four vignettes relating to different mental health problems	To assess knowledge and training needs	Referral to mental health services by midwives and obstetricians was more likely than referral by health visitors ($p<0.01$). Obstetricians were less likely to feel it was their responsibility to manage mild ($p<0.001$) or severe ($p<0.01$) mental health disorders compared to midwives and health visitors. Midwives and obstetricians were more likely than health visitors to state they would request help in supporting women with mild disorders ($p<0.001$). Fewer health visitors and obstetricians requested training compared to midwives ($p<0.001$) and health visitors required less advice on accessing support compared to midwives and obstetricians ($p<0.001$)

Author/date Country of study	Sample size and recruitment	Data collection method	Study aim	Results
Stewart and Henshaw 2002 UK	n=266 Midwives	A survey	To examine the knowledge and interest in learning more about perinatal mental health	Midwives had some knowledge of the prevalence of mental health disorders and felt they had a role in supporting women. Only 72 (27.1%) had specific training. Only 53 (19.9%) had read anything related to perinatal mental health in their own time. 52.5% wanted more training on specific disorders and 41.3% wanted to learn listening or counselling skills

Asking questions about perinatal mental health

Author/date Country of study	Sample size and recruitment	Data collection method	Study aim	Results
McCauley et al. 2011 Australia	n=161 Midwives	Exploratory descriptive survey design, (Victorian Survey of midwives 2000)	To explore midwives' attitude, skills, knowledge and experience of providing care for women with perinatal mental health conditions	Two thirds (65%) had more than 10 years' experience as a midwife, 20% stated they had received a mental health education. The majority of midwives had looked after women with anxiety (77.6%) and depression (87.0%) and most reported their colleagues to be understanding, tolerant and helpful when caring for women with perinatal mental health issues. The least important skills recorded by midwives were suicide risk assessment and mental status examination.
McGlone et al. 2016 UK	n=8 Midwives	Semi structured interviews, framework analysis	To understand midwives' experience of asking the Whooley questions	Midwives lacked an understanding of the purpose of the questions, thought it was inappropriate and insensitive to ask questions verbatim. A lack of time especially at the booking visit and a real fear that they did not know what to do if a woman disclosed a mental health issue were also reported

328

Author/date Country of study	Sample size and recruitment	Data collection method	Study aim	Results
Mollart et al. 2009 Australia	n=18 Midwives	Focus groups, Thematic analysis	The impact of conducting antenatal psychosocial assessments on midwives' emotional wellbeing	Midwives felt stressed when asking the questions, aggravated by the lack of support. The issues became worse over time leading to unhealthy coping strategies such as drinking too much
Rompala et al. 2016 USA	n=53 Certified nurse-midwives	Online survey	To understand the practice of screening for depression	50 (94%) reported screening for antenatal depression, and 38 (72%) reported the use of a standardised screening tool on more than 90% of prenatal patients. 35 (66%) reported using the Edinburgh Postnatal Depression Scale. More than 60% of respondents indicated that availability of mental health services and insurance constraints were barriers to screening
Rollans et al. 2013 UK	n=18 Midwives Two different maternity units	Ethnographic study and brief interview	To describe the mental health screening process by midwives at the booking visit	Midwives varied their approach when asking questions on sensitive topics such as domestic violence, mental health and relationships. In nine out of the 34 appointments, midwives introduced this section of questions and explained the reason for asking them. Some midwives asked questions in a direct manner, whereas a more relaxed approach (21 appointments) appeared to enable a better discussion between the woman and the midwife

Author/date Country of study	Sample size and recruitment	Data collection method	Study aim	Results
			Education and Training	
Davies et al. 2016 UK	n=2 Final year student midwives	Views of the student midwives	To assess a module designed for second year student midwives	Increased confidence in caring for women's mental health was reported by two final year students who had completed a module designed for second year student midwives in the UK. The module focused on weekly varied topics, multidisciplinary teaching, and speakers including women with lived experience of mental health problems and specialist mental health professionals. Evaluation of the module showed an increased understanding and awareness of how midwives can promote wellbeing. The second student stated how she had thought prior to the course that a few sessions would be enough but had underestimated the complexity of perinatal mental health
Higgins et al. 2016 Ireland	n=25 Student midwives	Pre and post training questionnaire	Assessment of training aimed at improving student midwives' confidence at speaking and listening to women about their mental health	A statistically significant (*p*<0.001) improvement in the students' understanding of perinatal mental health was reported which was applicable to their clinical practice. Poor understanding of medication (86%), how to talk to women about psychosis (68%), suicide in the perinatal period (75%) and the impact on the baby (68%) were identified. Suggested improvements to the course were more role play and practical group work to improve confidence

Author/date Country of study	Sample size and recruitment	Data collection method	Study aim	Results
King et al. 2012 UK	n=126 Health professionals, including 23 Midwives	Pre and post training questionnaire	Assessment of a training package on psychological assessment skills	All health professionals' confidence was significantly increased ($p<0.01$). Confidence improved around discussions about distress, suicide, the use of screening tools, recognising symptoms of psychological disorders and information
Larkin et al. 2014 UK	Student midwives	Workshop which included an open forum discussion and written feedback	To assess the effectiveness of a training package designed with two service users who had psychosis and depression diagnoses	The blended learning included e-learning, reflection and face-to-face sessions. Evaluation of the package by student midwives suggested the combination of learning strategies including seeing the problems from the view of women was useful for practical application of the skills. Furthermore the time frame between sessions allowed opportunities to reflect on the content
Ross-Davie et al. 2007 UK	n=187 Midwives	Post training questionnaire a month after the training day	To assess a one day training for health professionals aimed at increasing their knowledge confidence and attitudes regarding perinatal mental health	The day was positively evaluated. Confidence had increased, additionally the content of information in the maternity records had improved

Appendix 6 Systematic literature search – Screening tools to detect symptoms of anxiety and depression

The systematic search was conducted to extract literature based on the question identifying screening tools and determine their suitability for detecting mental health problems in pregnancy, namely stress, anxiety and depression. The detection of other more serious mental health conditions is beyond the scope of this study. The question asked was 'What screen tools are available to detect anxiety and depression in the perinatal period?'. An initial search in Google Scholar was used to detect key words for each subject heading, these were combined to produce the overall search strategy. The following subject headings were used as a basis for the search strategy, *pregnant*, *detection* and *mental health issues*. These were then broken down into key words or phrases for each subject heading for example *pregnancy*, led to key words including *pregnan**, *perinatal* and *antenatal* (Table A6.1).

Table A6.1. Key words used in the literature search.

Pregnant	1	pregnan*
	2	perinatal
	3	antenatal
	4	prenatal
	5	maternal
	6	1 or 2 or 3 or 4 or 5
Detection	7	detect*
	8	identif*
	9	screen*
	10	self-report*
	11	7 or 8 or 9 or 10
Mental health issue	12	mental health issue*
	13	psychiatric disorder*
	14	emotional disorder*
	15	"mental illness"
	16	maternal mood disorder*
	17	depression
	18	stress
	19	anxiety
	20	"mental ill health"
	21	mental disorder*
	22	12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21
Overall search	23	6 and 11 and 22

The following online databases where searched CINAHL via EBSCO, Cochrane, Joanna Briggs Institute, ProQuest including British Nursing Index and ASSIA, PsycINFO, Medline and Scopus via Ovid, Trip Pro, UpToDate, and Web of Science. Further searches were performed looking at grey literature which produced guidelines and publications for example, charities, NICE, RCOG and WHO to ensure a comprehensive review of all relevant literature (Table A6.2). Accounts were created in all databases and the searches were saved to run automatic monthly searches to capture new reports and research conducted during the study. Further literature was obtained from searching the reference lists of relevant articles.

Table A6.2. Number of articles from each source.

Database or source	Results
CINAHL via EBSCO	1989
Cochrane	2731
Joanna Briggs Institute	193
Medline via Ovid	7595
ProQuest (including British Nursing Index/ASSIA)	369
PsycINFO via Ovid	3490
Scopus via Ovid	1689
Trip Pro	1568
UpToDate	6
Web of Science	6030
NICE	5
RCOG	4
WHO	5

The search inclusion criteria were tightened and restricted to studies published in English to ensure screening tools reviewed were validated for English speaking populations and limited to studies carried out in the United Kingdom, Europe, Canada, America, Australia and New Zealand to obtain literature relevant to experiences of women in high-income countries with developed healthcare systems and further limited to dates 2000 to 2017. This produced 25,617 articles. The titles and abstracts were assessed for relevance and retrieved if they fitted the criteria. Many data bases produced duplicate articles, following which 190 articles were briefly reviewed and 151 were reviewed in detail. Only literature reporting reliability and validity of screening tools to detect anxiety and depression in the perinatal period were included and are discussed in chapter three and in the tables below, which amounted to 13 articles.

Articles showing sensitivity and specificity of screening tools to detect symptoms of depression

Author/date Country of study	Screening tools	Cut off point	Sample size, recruitment	Compared against	Sensitivity	Specificity
Murray and Cox 1990 UK	EPDS	14/15 12/13	n=100 women 28-34 weeks gestation	Diagnostic interview	100 100	96 87
Flynn et al. 2011 USA	EPDS PHQ-9	13 10	n=81 pregnancy and n=104 postnatal women	Clinical diagnosis	80 74	74 73
Sidebottom et al. 2012 USA	PHQ-9	10	n=745 women in early pregnancy	DSM-IV	85	84
Smith et al. 2010 USA	PHQ-8 PHQ-2	11 4	n=218 <18 weeks gestation	Composite International Diagnostic Interview and PHQ-8	77 62	62 79
Bennett et al. 2008 USA	PHQ-2	Yes/No	n=414 15 weeks gestation n=334 30 weeks gestation n=193 6-16 after birth	EPDS ≥13	93 82 80	75 80 86

Author/date Country of study	Screening tools	Cut off point	Sample size, recruitment	Compared against	Sensitivity	Specificity
Whooley et al. 1997 USA	Whooley	Positive/ Negative	n=536 adult patients	BDI and CES-D	96	57
Mann et al. 2012 UK	Whooley Extra Arroll question		n=152 women 26-28 weeks gestation	DSM-IV EPDS ≥13	100 58	68 91
Darwin et al. 2016 UK	Whooley Extra Arroll question		n=191 women at their booking appointment	EPDS ≥13	48 10	86 97
Holcomb et al. 1996 USA	BDI	>16	n=105 pregnant women	National institute of Mental Health Diagnostic Interview Schedule III	83	89

BDI – Beck Depression Inventory, CES-D – Centre for Epidemiologic Studies Depression Scale, DSM – Diagnostic and Statistical Manual of Mental Disorders, EPDS – Edinburgh Postnatal Depression Scale, PHQ – Patient Health Questionnaire

Author/date Country of study	Screening tools	Cut off point	Sample size, recruitment	Compared against	Sensitivity	Specificity
Articles showing sensitivity and specificity of screening tools to detect symptoms of anxiety						
Spitzer et al. 2006 USA	GAD-2	2 3	n=995 non-pregnant population	Clinical diagnosis and GAD-7	95 86	64 83
Simpson et al. 2014 Canada	EPDS-A3 GAD-7	>4 ≥10 13	n=155 pregnant and n=85 postnatal women	DSM-IV	68 76 61	64 51 73
Grant et al. 2008 Australia	STAI	40	n=100 women in the 3rd trimester	DSM-IV	81	80
Somerville et al. 2014 Australia	PASS	26	n=393 pregnant and postnatal women	Depression, Anxiety and Stress Scale, BDI, STAI, EPDS	70	30

BDI – Beck Depression Inventory, GAD – Generalised Anxiety Disorder, EPDS – Edinburgh Postnatal Depression Scale, DSM – Diagnostic and Statistical Manual of Mental Disorders, PASS – Perinatal Anxiety Screening Scale, STAI – Staite Trait Anxiety Inventory

Appendix 7 Participant questionnaire

Questionnaire for Women

Study ID:

Date:

Thank you for completing this questionnaire. It would help us if you could answer all the questions. However, if you feel unhappy about answering any of them, please just leave them blank. All information is kept in the strictest confidence and your answers will not affect the standard of care you receive.

About you

- **How would you describe your national identity?** *(Please tick)*

☐ Welsh   ☐ English   ☐ Scottish

☐ Northern Irish   ☐ British   ☐ Irish

☐ Other *(please describe)* ....

- **Choose one option that best describes your ethnic group or background** *(Please tick)*

1. White
☐ Welsh / English / Scottish / Northern Irish / British
☐ Irish
☐ Gypsy or Irish Traveller
☐ Any other White background *(please describe)*
....

2. Mixed / Multiple ethnic groups
☐ White and Black Caribbean
☐ White and Black African
☐ White and Asian
☐ Any other mixed / multiple ethnic background *(please describe)*
....

3. Asian / Asian British
☐ Indian
☐ Pakistani
☐ Bangladeshi
☐ Chinese
☐ Any other Asian background *(please describe)*
....

4. Black / African / Caribbean / Black British
☐ African
☐ Caribbean
☐ Any other Black / African / Caribbean background *(please describe)*
....

5. Other ethnic group
☐ Any other ethnic group *(please describe)*
....

- **What is your highest level of education?** ………………………………………………………………

- **How would you best describe your current employment situation?** *(Please tick)*

☐ In full time work   ☐ In full time education or training   ☐ In part time work

☐ In part time education or training   ☐ Both in work and in education or training   ☐ Unemployed and seeking work

☐ Out of work, not seeking work e.g. raising a family   ☐ Other *(please describe)* …………………………………

- **What is your main occupation?** …………………………………………

- **Do you have a partner?** *(Please tick)*

☐ Yes and we live together   ☐ I have a partner but we do not live together   ☐ I do not have a partner

- **How many weeks pregnant are you today?** …………………………………

About your mood

Have you previously or currently suffer from any mood disorder? E.g. stress, anxiety, depression or bipolar disorder.

Yes/No/Do not wish to say

If yes:

Which mood disorder? …………………………………………

When were you first diagnosed?   …………………………………………

Are you currently on medication for this condition?   Yes/No/Do not wish to say

Are you receiving any other form of treatment for this condition (e.g. counselling)?   Yes/No/Do not wish to say

- **Please select the answer that comes closest to how you have felt in the past week, not just how you feel today**. *(Please tick)*
  Here is an example already completed:

I have felt happy
☐ Yes, all the time
☑ Yes, most of the time
☐ No, not very often
☐ No, not at all

This would mean: I have felt happy most of the time in the past few days. Please complete the other questions in the same way. Do not take too long over it and make sure you answer all the questions.

In the **past week** have you:

1. I have been able to laugh and see the funny side of things
   ☐ As much as I always could
   ☐ Not quite so much now
   ☐ Definitely not so much now
   ☐ Not at all

2. I have looked forward with enjoyment to things
   ☐ As much as I ever did
   ☐ Rather less than I used to
   ☐ Definitely less than I used to
   ☐ Hardly at all

3. I have blamed myself unnecessarily when things went wrong
   ☐ Yes, most of the time
   ☐ Yes, some of the time
   ☐ Not very often
   ☐ No, never

4. I have been anxious or worried for no good reason
   ☐ No, not at all
   ☐ Hardly ever
   ☐ Yes, sometimes
   ☐ Yes, very often

5. I have felt scared or panicky for no very good reason
   ☐ Yes, quite a lot
   ☐ Yes, sometimes
   ☐ No, not much
   ☐ No, not at all

6. Things have been getting on top of me
   ☐ Yes, most of the time I haven't been able to cope at all
   ☐ Yes, sometimes I haven't been coping as well as usual
   ☐ No, most of the time I have coped quite well
   ☐ No, I have been coping as well as ever

7. I have been so unhappy that I have had difficulty sleeping
   ☐ Yes, most of the time
   ☐ Yes, sometimes
   ☐ Not very often
   ☐ No, not at all

8. I have felt sad or miserable
   ☐ Yes, most of the time
   ☐ Yes, quite often
   ☐ Not very often
   ☐ No, not at all

9. I have been so unhappy that I have been crying
   ☐ Yes, most of the time
   ☐ Yes, quite often
   ☐ Only occasionally
   ☐ No, never

10. The thought of harming myself has occurred to me
    ☐ Yes, quite often
    ☐ Sometimes
    ☐ Hardly ever
    ☐ Never

- **Over the last 2 weeks how often have you been bothered by the following problems?** *(Please circle your answers)*

		Not at all	Several days	More than half the days	Nearly every day
1.	Feeling nervous, anxious or on edge	0	1	2	3
2.	Not being able to stop or control worrying	0	1	2	3
3.	Worrying too much about different things	0	1	2	3
4.	Having trouble relaxing	0	1	2	3
5.	Being so restless that it is hard to sit still	0	1	2	3
6.	Becoming easily annoyed or irritable	0	1	2	3
7.	Feeling afraid, as if something awful might happen	0	1	2	3

About your household

- **Imagine that this ladder pictures how British society is set up.**

At the top of the ladder are the people who are the best off – they have the most money, the most schooling, and the jobs that bring the most respect.

At the bottom are people who are worst off – they have the least money, little or no education, no job or jobs that no one wants or respects.

Best off
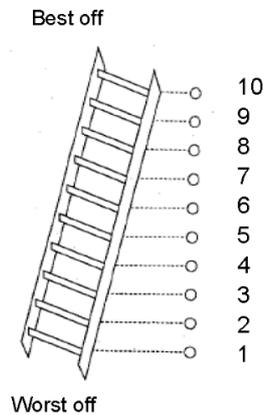
Now, please think about your family and circle where your family would be on this ladder.

10
9
8
7
6
5
4
3
2
1

Worst off

- **Families differ in the kinds of things they can afford. To what extent do you have enough money for the following things in your family?** *(Please tick)*

1. Money to pay monthly bills

☐ Not at all adequate
☐ Seldom adequate
☐ Somewhat adequate
☐ Usually adequate
☐ Almost always adequate

2. Money for dependable transportation (a car or another way of getting around easily)

☐ Not at all adequate
☐ Seldom adequate
☐ Somewhat adequate
☐ Usually adequate
☐ Almost always adequate

3. Money to buy things for yourself

☐ Not at all adequate
☐ Seldom adequate
☐ Somewhat adequate
☐ Usually adequate
☐ Almost always adequate

4. Money to save

☐ Not at all adequate
☐ Seldom adequate
☐ Somewhat adequate
☐ Usually adequate
☐ Almost always adequate

- **We would like to ask you some questions about your day-to-day life and routines.** *(Please tick)*

	Yes	No
Do you eat at least one meal a day at home with family or friends?	☐	☐
Do you have a diary or a calendar for keeping track of appointments, home visits or obligations?	☐	☐
Do you have a phone, either a mobile or a landline?	☐	☐
Do you have a bank account?	☐	☐
Do you plan your spending money or make a budget for yourself?	☐	☐
Do you have to care for anybody with a long-term illness or a problem with alcohol or drugs?	☐	☐
Do you feel you have enough privacy?	☐	☐
Do you have people living with you that you wish weren't there?	☐	☐
Do you have a car?	☐	☐

How many cars are there in your household?………

- **Which statement best describes how you deal with the following problems?**
  (Please tick)

1. I can always manage to solve difficult problems if I try hard enough

☐ Not at all true
☐ Hardly true
☐ Moderately true
☐ Exactly true

2. If someone opposes me, I can find ways and means to get what I want

☐ Not at all true
☐ Hardly true
☐ Moderately true
☐ Exactly true

3. I am certain that I can accomplish my goals

☐ Not at all true
☐ Hardly true
☐ Moderately true
☐ Exactly true

4. I am confident that I could deal efficiently with unexpected events

☐ Not at all true
☐ Hardly true
☐ Moderately true
☐ Exactly true

5. Thanks to my resourcefulness, I can handle things I didn't expect

☐ Not at all true
☐ Hardly true
☐ Moderately true
☐ Exactly true

6. I can solve most problems if I make the effort

☐ Not at all true
☐ Hardly true
☐ Moderately true
☐ Exactly true

7. I can remain calm when facing difficulties because I can rely on my coping abilities

☐ Not at all true
☐ Hardly true
☐ Moderately true
☐ Exactly true

8. When I am confronted with a problem, I can find several solutions

☐ Not at all true
☐ Hardly true
☐ Moderately true
☐ Exactly true

9. If I am in trouble, I can think of a good solution

☐ Not at all true
☐ Hardly true
☐ Moderately true
☐ Exactly true

10. I can handle whatever comes my way

☐ Not at all true
☐ Hardly true
☐ Moderately true
☐ Exactly true

- **We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement**. *(Please Circle your answers)*

		Very strongly disagree	Strongly disagree	Mildly disagree	Neutral	Mildly agree	Strongly agree	Very strongly agree
1.	There is a special person who is around when I am in need	1	2	3	4	5	6	7
2.	There is a special person with whom I can share joys and sorrows	1	2	3	4	5	6	7
3.	My family really tries to help me	1	2	3	4	5	6	7
4.	I get the emotional help & support I need from my family	1	2	3	4	5	6	7
5.	I have a special person who is a real source of comfort to me	1	2	3	4	5	6	7
6.	My friends really try to help me	1	2	3	4	5	6	7
7.	I can count on my friends when things go wrong	1	2	3	4	5	6	7
8.	I can talk about my problems with my family	1	2	3	4	5	6	7
9.	I have friends with whom I can share my joys and sorrows	1	2	3	4	5	6	7
10.	There is a special person in my life who cares about my feelings	1	2	3	4	5	6	7
11.	My family is willing to help me make decisions	1	2	3	4	5	6	7
12.	I can talk about my problems with my friends	1	2	3	4	5	6	7

Thank you for your help with this study. We appreciate all the information you have provided.

Please speak to your Midwife or Doctor if you would like to discuss any of the topics raised in this questionnaire. If you would like further information about support services contact: NHS Direct https://www.nhsdirect.wales.nhs.uk/ , or Samaritans on 116 123, (this number is free to call, 24 hours a day, 7 days a week) http://www.samaritans.org/

If you have given consent to be followed up.

Please could you provide your preferred contact details.

Study ID:

Name:

Tel no.:

Email:

Address:

If you would like a summary of the research findings please add your contact details

Name:

Email:

Address:

Appendix 8 Interview questions for women

Interview topic guide for women

These are topic guidelines with some sample questions. Due to the indicative nature of the interviews, interesting topics that arise will be explored further.

General introduction and purpose of the interview

I would like to discuss emotions and mood and how these have changed over time. I would like to use this timeline as a prompt to the discussion.

Opening conversation

Is this your first pregnancy?

How has the pregnancy been?

Mood changes over time

Thinking about your mood:

How would you describe your mood before you became pregnant?

How did your feel when you found out you were pregnant?

How has your mood changed during pregnancy?

How do you explain the change in your mood?

Health care staff

I would be interested to know about your contact with health professionals such as GPs, and midwives:

Which health care professional have you been seeing during your pregnancy?

What did health professionals ask about your moods and emotions?

How did this make you feel?

Information

I am interested where you looked for any information particularly about the emotional side of pregnancy:

Who did you go to for information or advice during your pregnancy?

Have you read much about emotional health and pregnancy?

Support

Thinking about support during the pregnancy:

Was there anyone or anything that particularly helped/supported you emotionally during your pregnancy (for example a health professional, family member or a friend)?

Are you aware of any support services available to support your emotional health during pregnancy?

Appendix 9 Timeline

Mothers Mood Study - Timeline

MoMs

Future

Today

32 weeks

My first scan

Anomaly scan

I'm pregnant

Pre-pregnancy

Childhood

MoMs timeline Version: 1 Date: 16/08/17
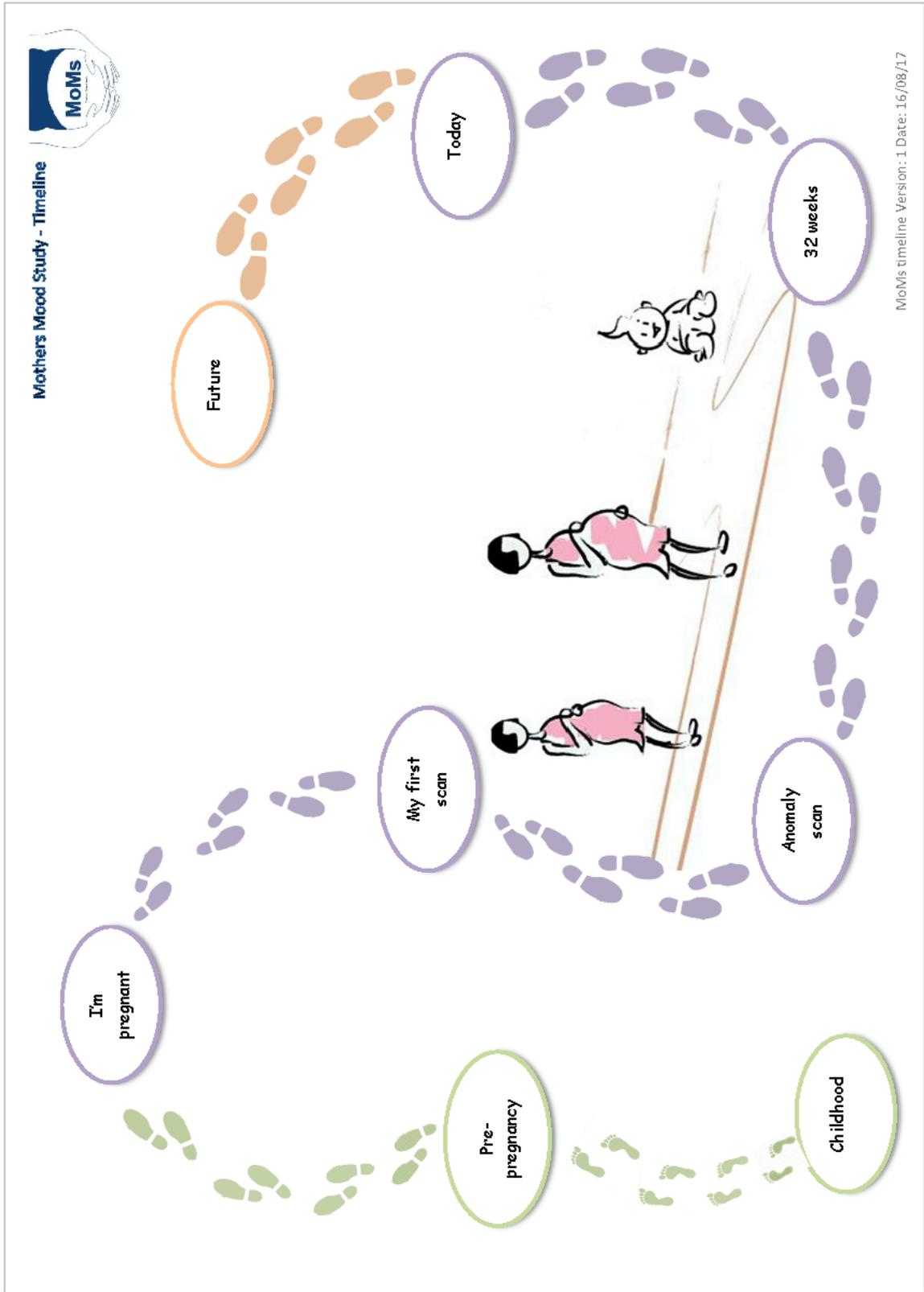
Questionnaire for midwives

During pregnancy, mood and emotions can fluctuate and this can affect pregnant women, their family and friends. This study has engaged with pregnant women to explore their experiences of mental health issues whilst pregnant. As midwives are the main care providers for pregnant women, we are interested in finding out more about midwives' perspectives of providing care for these women. We are asking all midwives who work for Cardiff and Vale University Health Board for support with this study.

Thank you for considering completing this questionnaire. It would help us if you could answer all the questions, however if you feel unhappy about answering any of them, please just leave them blank. All information is kept in the strictest confidence.

Section One

I am interested in your experiences of working with women who have a mental illness.

Q 1. In your experience, as a midwife, what are the most common forms of mental illness you have encountered? (Please tick as many as appropriate)

Schizophrenia	☐	Bipolar disorder	☐
Depressive disorder	☐	Personality Disorder	☐
Obsessional compulsive disorder	☐	Anxiety disorder	☐
Mania	☐	None	☐

Other (please state) …………………………………………………….

Q 2. In your opinion how do midwives respond towards working with a woman with a mental illness? (Please rate each suggested response)

	Rarely	Sometimes	Mostly
They understand	☐	☐	☐
They are tolerant	☐	☐	☐
They are helpful	☐	☐	☐
They are knowledgeable	☐	☐	☐
They feel out of their depth	☐	☐	☐
They spend extra time	☐	☐	☐
They spend less time than usual	☐	☐	☐
They feel confident to assess	☐	☐	☐
They tend to avoid the woman	☐	☐	☐
They try to ignore the mental illness	☐	☐	☐

Q 3. Do you think the needs of a woman who has a mental illness are recognised whilst they are under midwifery care?

Yes ☐   No ☐   Sometimes ☐

Q 4. In your opinion, in the course of your work how important are the following skills and processes?

	Not Important	Sometimes Important	Important	Extremely Important
Psychiatric Assessment				
Mental State Assessment				
Assessment of Suicide Risk				
Mandatory Reporting				
Liaison and Public Relations				
Giving Directives to other staff				
Teamwork				
Identify and Prevent Burnout				
Communication Skills				
Building Rapport				
Grief Counselling				
Relationship Counselling				
Organising Support for Clients				
Conflict Management				
Provide Empathy				
Ethical Problem Solving				
Observation of Behaviour				
Quick and Safe Clinical Decision Making				
Debriefing				
Critical Incident Management				

Q 5. When assessing a woman's mental wellbeing which of the following would you assess for? (Please tick as many as appropriate)

Mood	☐	Speech	☐	Anhedonia	☐
Affect	☐	Activity	☐	Self-esteem	☐
Perceptions	☐	Thoughts	☐	Behaviour	☐
Memory	☐	Anxiety level	☐	Motivation	☐
Sleep pattern	☐	Eating habits	☐	Insight	☐
Socialisation	☐	Relationships	☐	Self-worth	☐
Support	☐	Paranoia	☐		

Q 6. Please estimate as a percentage how often you would make an assessment of a woman's mental health? (Please circle one response)

Don't know	0% (no women)	10%	20%	30%	40%
50%	60%	70%	80%	90%	100% (all women)

Q 7. Of the following list, what factors would assist you to assess for perinatal mental health problems? (Please tick as many as appropriate)

Instinct/intuition	☐	Observation	☐
The woman's history	☐	The woman's behaviour	☐
Clinical skills	☐	Clinical experience	☐
Other (please state)	☐	…………………………………	

Q 8. If you feel a woman is developing perinatal mental health problems would you refer her to the following resources? (Please tick yes or no to each of the following)

	Yes	No
Health Visitor	☐	☐
Mother baby unit	☐	☐
General practitioner	☐	☐
Community mental health team	☐	☐
Psychologist	☐	☐
Psychiatric nurse	☐	☐
Social worker	☐	☐
Occupational therapist	☐	☐

350

Section two

I am interested in your training and training needs in relation to your experience with women who have or may have perinatal mental health problems.

Q 9. Have you received training in any of the following topics?
(Please tick as many as appropriate)

Mental Status Assessment	☐	Suicide Risk Assessment	☐
Crisis Intervention Strategies	☐	General Counselling Skills	☐
Interviewing Skills	☐	Critical Incident Debriefing	☐
Mental Health Pharmacology	☐	Alcohol Use/Abuse	☐
Physical/Sexual Abuse	☐	Illicit Drug Use/Abuse	☐
Grief and Loss	☐	Individual Therapy	☐
Family Therapy	☐	Group Work	☐

Q 10. Have you attended a course/in-service training/online module in the last 2 years which increased your skills and knowledge in relation to perinatal mental health?

Yes ☐   No ☐ (Go to Question 13)

If yes, please state which course?
…………………………………………………………………………………………………
…………………………………………………………………………………………………

Q 11. Did this course assist you when caring for women with mental health problems?

Yes ☐   No ☐

Q 12. Please rate the importance of the course you completed to your current field of work.

Not important ☐   Sometimes important ☐   Important ☐   Extremely important ☐

Q 13. Where did you learn the skills required to support women with perinatal mental health problems?
(Please tick as many as appropriate)

On the job	☐	In-service	☐	Basic Nursing Education	☐
Peers	☐	External	☐	Workshops	☐
Midwifery Education	☐	Other	(please state)	………………………	

Q 14. Do you feel you could be better prepared to deal with situations concerning the mental health of women during pregnancy, labour and the postpartum period?

Yes ☐   No ☐

Q 15. I feel confident working with women who have a mental illness.
(Please circle one response)

Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1	2	3	4	5

Please turn over….

<u>**Section Three**</u>
Information about you.

Q 16. How many years have you been practising as a midwife?...............

Q 17. How many hours a week do you work on average?.........................

Q 18. What was your age on your last birthday?   ....

Q 19. In what area of midwifery do you currently work?

Antenatal clinic	☐	Delivery suite	☐
Antenatal/Postnatal ward	☐	Community	☐
Assessment unit	☐	Management	☐
MLU	☐	New midwife on rotation	☐
Other	☐	Specialist role	☐

If other/specialist role please explain..

Q 20. What other nursing qualifications do you have? E.g. Adult nurse, Children's nurse, Mental health nurse.

a)...

b)...

c)...

d)...

Q 21. Do you have any experience working as a nurse in a psychiatric setting?

Yes ☐   No ☐

Q 22. Do you or have you worked in a specialist role with vulnerable women e.g. ELAN team?

Yes ☐   No ☐

Thank you for taking the time to complete this questionnaire.

Please place the completed questionnaire in the envelope provided or hand to Nicola Savory. If you have any questions please contact Nicola Savory, School of Healthcare Sciences, Cardiff University, Eastgate House, Newport Road, CF24 0AB, Email: savoryna@cardiff.ac.uk

**Gwasanaeth Moeseg Ymchwil
Research Ethics Service**

**Wales Research Ethics Committee 4
Wrexham**

Mailing address:
Health and Care Research Wales Support Centre
Castlebridge 4
15-19 Cowbridge Road East
Cardiff, CF11 9AB

Telephone: 02920 785736

Email: tracy.biggs@wales.nhs.uk
norbert.ciumageanu@wales.nhs.uk
Website : www.hra.nhs.uk

10 October 2017

Professor Ben Hannigan
School of Healthcare Sciences
Eastgate House
35-43 Newport Road
CF24 0AB   hanniganb@cardiff.ac.uk
                      SavoryNA@cardiff.ac.uk

Dear Professor Hannigan

Study title:	**Perinatal mental health: a mixed methods study (MoMs)**
REC reference:	**17/WA/0319**
Protocol number:	**SPON 1606-17**
IRAS project ID:	**235434**

The Research Ethics Committee reviewed the above application at the meeting held on
04 October 2017. Thank you for attending to discuss the application.

We plan to publish your research summary wording for the above study on the HRA website,
together with your contact details. Publication will be no earlier than three months from the date
of this favourable opinion letter. The expectation is that this information will be published for all
studies that receive an ethical opinion but should you wish to provide a substitute contact point,
wish to make a request to defer, or require further information, please contact
hra.studyregistration@nhs.net outlining the reasons for your request.
Under very limited circumstances (e.g. for student research which has received an unfavourable
opinion), it may be possible to grant an exemption to the publication of the study.

Ethical opinion

The members of the Committee present gave a favourable ethical opinion of the above research
on the basis described in the application form, protocol and supporting documentation, subject
to the conditions specified below

Conditions of the favourable opinion

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

1.   The Committee requested that the protocol section 8.5 clarifies that the process in place for referral to Maternal Mental Health Services is compliant with the host organisation's applicable Policy/ Standard Operating Procedure; a copy of the policy should be submitted for the record.

2.   The Committee requested that intention to fully comply with the organisations policy for raising concerns is explicitly stated in paragraph "What will happen to the Information I provide?" of the Participant Information Sheet; a copy of the policy should be submitted for the record.

3.   The participant facing documentation should be proofread to ensure there are no typographical errors.

You should notify the REC once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. Revised documents should be submitted to the REC electronically from IRAS. The REC will acknowledge receipt and provide a final list of the approved documentation for the study, which you can make available to host organisations to facilitate their permission for the study. Failure to provide the final versions to the REC may cause delay in obtaining permissions.

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for HRA Approval (England)/ NHS permission for research is available in the Integrated Research Application System, at www.hra.nhs.uk or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of management permissions from host organisations.

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from the HRA. Guidance on where to register is provided on the HRA website.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

NHS Sites

The favourable opinion applies to all NHS sites taking part in the study taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Summary of discussion at the meeting

The Chairman welcomed you and Mrs Savory and introduced the Committee members.
The following issues were discussed:

The Committee acknowledged that several points raised in the initial unfavourable opinion letter have now been fully clarified; however, some were only partially addressed and the Committee sought further clarification.

<u>Care and protection of research participants; respect for participants' welfare and dignity; data protection and confidentiality</u>

The Committee had further queries in relation to the process in place for referral to Maternal Mental Health Services - as the protocol does not make reference to the host organisation's Policy/ Standard Operating Procedures that would apply.

You gave assurances to the Committee that the existing policies will be adhered to.
The Committee requested that this is explicitly stated in the protocol and a copy of the aforementioned policy is submitted for the record.

<u>Informed Consent process and the adequacy and completeness of participant information</u>
In relation to the point raised in previous review, regarding the process in place to manage incidental disclosures, the Committee noted that the Participant Information Sheet for midwife must state that the study will comply with local raising concerns policy for raising concerns - to safeguard the woman participant and the midwife.

You gave assurances to the Committee that the existing policies will be adhered to.
The Committee requested that this is explicitly stated in the Participant Information Sheet and a copy of the aforementioned policy is submitted for the record.

The participant facing documentation should be proof-read to ensure there are no typographical errors.

The Committee thanked you and Mrs Savory for your availability to speak to this submission and gave you an opportunity to ask questions.
You did not raise any issues.
The teleconference was terminated.

Other ethical issues were raised and resolved in preliminary discussion before your attendance at the meeting.

No issues were raised with the following:

- Social or scientific value; scientific design and conduct of the study

- Favourable risk benefit ratio; anticipated benefit/risks for research participants

- Recruitment arrangements and access to health information; fair participant selection

- Suitability of the applicant and supporting staff

- Independent review

- Suitability of supporting information

- Other study procedures

- Other general comments missing information/ typographical errors/ application errors/

- Suitability of the study summary

Please contact the REC Manager if you feel that the above summary is not an accurate reflection of the discussion at the meeting.

Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
IRAS Application Form [IRAS_Form_03102017]		03 October 2017
Other [Unfavourable opinion letter]		11 September 2017
Other [Response to Unfavourable opinion]	-	21 September 2017
Research protocol or project proposal [Protocol]	2	12 September 2017
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Flow chart for study]	1	02 June 2017
Participant information sheet (PIS) [Midwives information sheet]	2	12 September 2017
Participant information sheet (PIS) [Study information for women - interview]	2	12 September 2017
Participant information sheet (PIS) [Study information for women - questionnaire]	2	12 September 2017
Participant consent form [Consent form for midwives]	2	12 September 2017
Participant consent form [Consent form for women - interview]	2	12 September 2017
Participant consent form [Consent form for women - questionnaire]	2	12 September 2017
Copies of advertisement materials for research participants [Poster]	1	02 June 2017
Other [MoMs timeline]		
Interview schedules or topic guides for participants [Interview schedule for women]	2	12 September 2017
Interview schedules or topic guides for participants [Focus group schedule for midwives]	2	12 September 2017
Referee's report or other scientific critique report [Feedback from reviewers]	-	-

Referee's report or other scientific critique report [Feedback from reviewers - email trail]	-	-
Referee's report or other scientific critique report [RCBC application with comments]	-	-
Non-validated questionnaire [Participant questionnaire - interview]	2	12 September 2017
Non-validated questionnaire [Participant questionnaire]	2	12 September 2017
Non-validated questionnaire [Questionnaire for midwives]	2	12 September 2017
Letter from sponsor [Sponsor letter]		18 July 2017
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Sponsor insurance]	-	18 July 2016
Summary CV for Chief Investigator (CI) [CV for CI]	-	-
Summary CV for student [CV Nicola Savory]	-	-
Summary CV for supervisor (student research) [CV for PI]	-	-
Summary CV for supervisor (student research) [CV for CI]	-	-

Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

No declarations of interest have been made in relation to this application

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

HRA Training

We are pleased to welcome researchers and R&D staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

17/WA/0319	Please quote this number on all correspondence

With the Committee's best wishes for the success of this project.

Yours sincerely,

Dr Kathryn Ann Clarke
Chair, Wales REC 4

e-mail: norbert.ciumageanu@wales.nhs.uk

Enclosures: *List of names and professions of members who were present at the meeting and those who submitted written comments*

"After ethical review – guidance for researchers"

SL-AR2 After ethical review - research oth

Copy: Student: Mrs Nicola Savory
                                  Cardiff and Vale University Health Board
                                  SavoryNA@cardiff.ac.uk

           Sponsor Contact: Mr John Lowe
                                  Cardiff University
                                  lowej3@cardiff.ac.uk

           R&D Office: Miss Pina Amin
                                  Cardiff and Vale University Health Board
                                  pina.amin@wales.nhs.uk

           Academic Supervisor: Professor Ben Hannigan
                                  Cardiff University
                                  hanniganb@cardiff.ac.uk

                                  Professor Julia Sanders
                                  Cardiff University
                                  SandersJ3@cardiff.ac.uk

                                  Professor Rosalind John
                                  Cardiff University
                                  JohnRM@cardiff.ac.uk

Wales REC 4

Attendance at Committee meeting on 04 October 2017

Committee Members

Name	Profession	Present
Mrs Celia M L Blomeley	Retired Assistant Headteacher	Yes
Mr Natalino G B Cargius	Businessman	Yes
Dr Kathryn A Clarke	Head of Concerns (Chair)	Yes
Dr John Clifford	Consultant Psychiatrist	No
Mr Alexander A Daghlian	Principal Pharmacist	Yes
Dr John M Delieu	Clinical Anatomist	Yes
Mr John A Gittins	Senior Coroner (Vice-Chair)	Yes
Mrs Yvonne S Harding	Paediatric Nurse	Yes
Miss Joy Hickman	Consultant Orthodontist	Yes
Dr Peter Hobson	Healthcare Scientist	Yes
Ms Alison Ledward	Researcher	Yes
Dr Anthony D White	Consultant Care of the Elderly	Yes

In attendance

Name	Position (or reason for attending)
Dr Rossela Roberts	RES Manager / Acting REC Manager Wales REC 4
Mr Norbert Leon Ciumageanu	RES Administrative Assistant

Study information for women
(Questionnaire)

Invitation
You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Take time to read the following information and decide whether or not you wish to take part. If there is anything that is not clear or if you would like more information please ask. This study is being conducted by a midwife who works for Cardiff and Vale University Health Board as part of a PhD.

What is the purpose of the study?
During pregnancy mood and emotions can fluctuate and this can affect pregnant women, their family and friends. However there is not much up-to-date information about the number of women that are affected by mood and mental health issues either in pregnancy or after childbirth. More information is also needed on the kind of support women would like during this time and barriers to accessing care. This study aims to find out how many women are affected by low mood during pregnancy and explore their experiences and the support they have been given. This information will be important for developing policies to support women with low mood and to improve maternal mental health care.

Why have I been invited to take part?
We are inviting all women early in pregnancy who are attending the antenatal clinic at the University Hospital of Wales for their booking appointment to join the study.

Do I have to take part?
It is up to you to decide whether or not to take part in this study. If you decide not to take part, this will not affect the care you receive. If you do join the study you are free to withdraw at any time without giving any reason.

What will I be asked to do?
If you decide to join the study you will be asked to sign and date a study consent form. You will then be asked to complete a questionnaire about your lifestyle, your pregnancy and how you are feeling. Any questions you do not want to answer can be left blank. The questionnaires can all be completed while you are in the clinic and should not take more than 10 minutes of your time. We ask your permission for the research team to access your NHS records to provide information about your pregnancy. All information which is collected during the course of the study will be treated as strictly confidential.

You will be asked on the consent form if you are willing to be contacted later in your pregnancy for an interview. The purpose of the interview is to explore women's mood in pregnancy and their experience of care. If you agree to be interviewed you **may** be contacted around 32 weeks of pregnancy. The interview should take around 1 hour and will be audio recorded. You can be interviewed at home, Cardiff University or in clinic, whichever is better for you.

Study information for women : questionnaire   Version : 3   Date : 13.10.17   IRAS ID: 235434

The questionnaires and interviews will be conducted in English and therefore a good understanding of the English language and a willingness to complete these in English is required.

What will happen to the information I provide?
The confidentiality of your NHS records will be respected at all times. Your personal details will not be shared with anyone outside the research team unless concerns about your safety or the safety of others arise from the information you provide. A referral will then be made to the appropriate services for support. This will be discussed with you first but if the researcher has concerns for your safety, or that of your baby, there may be a professional requirement to report with or without your permission.

All your information will be stored on a password protected computer or in a locked filing cabinet. We aim to publish the research results in journals and will also provide feedback via hospital newsletters. Individuals who have taken part will not be identified in any way.

Will I receive any payments?
No you will not receive any payments for completion of the questionnaires today. Travel and parking expenses will be refunded for those who are interviewed in the hospital clinic.

How can I withdraw from the study?
You can withdraw from the study at any stage by informing the research team; this will not affect your care. If you withdraw then the information collected so far may not be able to be erased and this information may still be used in the study analysis. If you wish us to destroy any previous material collected, please email us to this effect and we will try to do so.

Who is funding the research?
The study is being funded as part of a PhD project by the Research Capacity Building Collaboration Wales (RCBC). It is being co-ordinated by Cardiff and Vale University Health Board and Cardiff University.

Who has reviewed the study?
All research in the NHS is looked at by an independent group of people called a Research Ethics Committee, to protect your interests. This study has been reviewed and given a favourable opinion by Wales Research Ethics Committee 4, REC reference: 17/WA/0319

If I have any further questions who can I contact?
Nicola Savory, School of Healthcare Sciences, Cardiff University, Eastgate House, Newport Road, CF24 0AB Email: savoryna@cardiff.ac.uk

What if there is a problem?
If you wish to express concern to someone not involved in the project, you should contact Dr Kate Button Director of Research Governance at Cardiff University, School of Healthcare Sciences. You can write to Dr Button at the School of Healthcare Sciences, Cardiff University, Eastgate House, 35-43 Newport Road, Cardiff CF24 0AB, or contact her by either telephone on 02920 687734 or by Email: buttonk@cardiff.ac.uk

Please speak to your midwife or doctor if you would like to discuss any of the topics raised in this questionnaire or if you would like further information about support services contact: NHS Direct https://www.nhsdirect.wales.nhs.uk/ or Samaritans 116 123. This number is free to call (24 hours a day, 7 days a week). The Samaritans website is http://www.samaritans.org/

Thank you for reading this information and for considering taking part in this research.

Study information for women : questionnaire   Version : 3   Date : 13.10.17   IRAS ID: 235434

Appendix 13 Consent form for women's questionnaire

Consent form for women
(Questionnaire)

IRAS ID: 235434

Study ID

Name of Researcher: Nicola Savory

Please initial

1) I confirm that I have read the Study information for women: Questionnaire sheet, dated 13ᵗʰ Ocotber2017, version 3 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2) I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my NHS care or legal rights being affected.

3) I understand that relevant sections of my maternity records and records of my baby will be used to collect data during the study. I give permission for the Cardiff University research team to have access to my NHS records.

4) I understand that if concerns about my safety or the safety of others arise from the information I provide, referral will be made to the appropriate services for support. This will be discussed with me first but there may be a professional requirement to report with or without my permission

5) I agree to be contacted later in my pregnancy to arrange an interview with the researcher.

6) I agree to take part in the above study.

....
Name of participant   Signature   Date

....
Name of person taking consent   Signature   Date

When completed: 1 for participant; 1 for site file; 1 for maternity notes

Consent form for women: Questionnaire   Version: 3   Date: 13.10.17

363

Data management

Where questions arose from the answers provided in the questionnaires, information and agreed coding of answers was documented to ensure continuity of data entry onto SPSS. Only those questions that involved discussion are reported on here.

Women's questionnaires

Office for National Statistics (2018) categories were used for the majority of sociodemographic data to allow comparison against national data. They provide input and output data guidelines.

How would you describe your national identity/Choose one option that best describes your ethnic group or background?

A variable was added for free text against national identity and ethnic group/background to allow countries to be entered as documented on the questionnaire.

What is your highest level of education?

A free text box was offered for this question rather than a list of categories, which led to some participants recording the type of institution rather than level of education which had been awarded. For example if 6th form was answered then 'GCSE' was entered as the variable because GCSEs are generally needed to enter 6th form. Similarly if university was recorded 'A level' was entered as the assumptions was made that A levels are required to enter university. However if they recorded 'university' and had teacher/nurse in job description as the institution then 'degree' was entered as it is assumed they need a degree to be employed in this role. If high school/comprehensive was answered then missing data was added as an assumption could not be made that they had left school with any qualifications.

How would you best describe your current employment situation?

Some duplicates were noted, for example full time work but on maternity leave. This was resolved by entering free text to explain the situation in the 'other employment' variable e.g. maternity leave from full time employment. This only applied to one questionnaire.

What is your main occupation?

Free text answers were entered in to the ONS database (Office for National Statistics 2018) to code into 9 categories which were then entered onto SPSS. Occasionally occupations recorded did not match a category or were not precise to place the

occupation within a category. Some issues were resolved by doing an internet search to identify a job description to match the skill level on the ONS categories. On a few occasions their financial /social society/education description were used to try and make assumptions. These were agreed with another researcher employed by Cardiff University who was also using the ONS category data base. Mother, student, homemaker and housewife were words used by the participants themselves to describe their occupation even though these are not part of the ONS category of occupation. Another variable was added to allow this data to be entered.

How many weeks pregnant are you today?

An exact gestation was not required, therefore a decision was made to record this in full weeks. Gestation was required to ensure the participants fitted the inclusion criteria of below 18 weeks gestation and comparative guide to assess variables.

When were you first diagnosed?

Free text rather than categories on the questionnaire led to a range of answers which was sometimes difficult to code. If the year was noted then the time period was calculated against their age. Most literature has 12 years as adolescence, therefore this was kept for the study and adult was used for those over 18 years at diagnosis.

Please select the answer that comes closest to how you have felt in the past week, not just how you feel today. (EPDS)

If one section left blank, no total was entered on SPSS for statistical purposes but it was included in those for possible follow up.

Over the last 2 weeks how often have you been bothered by the following problems? (GAD-7)

If 2 scores were circled, then the highest score was entered. E.g. if between 'not at all' and 'several days' then 'several days' was selected as there had been some symptoms.

Imagine that this ladder pictures how British society is set up.

If 2 answers were chosen, for consistency the lowest one was entered.

Families differ in the kinds of things they can afford. To what extent do you have enough money for the following things in your family?

If one question left blank the total for this question was left blank.

We would like to ask you some questions about your day-to-day life and routines.

Cars

If 'How many cars in the household' is left blank and 'no car' is selected, then enter not applicable.

Which statement best describes how you deal with the following problems?

If two numbers are selected in one question then the lower was entered.

We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement. (Social support)

Several participants selected the lowest number on this screening tool (one = very strongly disagree), they were outliers and inconsistent with the rest of the questionnaires, where most participants scored 'eight = very strongly agree'. This together with the fact that several participants stated that they had scored on the 'wrong side of the sheet' before they realised that they had made a mistake, led us to believe that they had scored incorrectly. However as this could not be confirmed with the participant themselves, it had to be assumes they had knowingly selected the lower score.

Anonymised data

Results for employment were entered into the ONS data base in a similar manner as the questionnaires' data. This led to some ambiguity with the data. Especially on the data base where place of work rather than job role were entered along with self-employed, housewife and student or acronyms with many possible answers for example SAHP which do not appear as categories on the data base. If unsure they were entered as unknown or not applicable.

Midwives' questionnaires

Q 4 In your opinion

Occasionally more than one box was checked or 'marks' in. The more pronounced check was agreed as the answer.

Q 8 Referral resources

Free text was entered by some midwives for this question. The title 'community mental health team' may have led to some confusion as this normally refers to those who are not pregnant whereas pregnant or postnatal women are referred to 'perinatal mental health team' (PNMHT). If free text stated 'I would have referred women to PNMHT then this was entered as 'yes' against community mental health team. Other midwives wrote 'I would refer to mother and baby unit if there was one', this was recorded as 'yes'. Another stated 'possibly' as the answer, this was taken as 'yes' as they did not state

'no'. If there were only ticks against some of the 'yes' boxes and non in the 'no' boxes, the questions left blank were recorded as 'no'. However if some of the 'no' boxes were checked and a question was left blank then it was recorded as missing.

Q 10 - 12

Occasionally Q 10 checked as 'no' but also completed Q 11 and 12, even though the instructions were to leave these blank. These answers were recorded as not applicable on SPSS.

Q 16 How many years have you been practising?

The length of practice was rounded down to the nearest year, if under 1 year it was recorded as 0.

Q 19 In what area of midwifery do you work?

Sometimes more than one area of practice was checked, a second variable was added to allow both answers to be recorded.

Q 21 Do you have any experience as a nurse working in a psychiatric setting?

There was a discrepancy in the answers from some midwives. Some had checked yes and some no but had also stated that 'only as a student nurse'. If student nurse was checked then the answers were changed to 'no' experience to reflect that it was only a placement. Free text was often added to expand on this question, a variable was added to SPSS to enter this data.

Mental health of women interviewed

EPDS and GAD-7 were completed as part of the questionnaire at the booking appointment, when recruited into the study. They were completed again prior to the interviews which took place after 34 weeks gestation.

Scores stayed within range of mild to moderate symptoms of depression and anxiety scored in early pregnancy for all except two women. Olivia had a notable rise in anxiety symptoms and a slight rise in depression symptoms, which placed her in the moderate category for depression and severe for anxiety. Helena the opposite, both scores reduced taking her from moderate symptoms of depression and anxiety to mild. There were no clear differences between the scores of those who stated they had depression or anxiety and those who did not between EPDS and GAD-7 scores at recruitment or interview.

Delivery details

Information was obtained from the medical records of women interviewed regarding antenatal care, the birth of their baby and postnatal care up until discharge from hospital.

Birth details n=20	M (SD) R
Gestation (weeks and days)	39.9 (1.36) 36.6-42.1
Duration of labour (n=17) (hours)	6.30 (9.94) 1.02-43
Weight of baby (grams)	3554 (582) 2750-4910
Time in hospital (hours) (n=19)	39.8 (48.35) 7-192
	n (%)
Feeding initiation at birth	
Breast	20 (100)
Gender of baby	
Female	14 (70.0)
Male	6 (30.0)
Mode of delivery	
Spontaneous vertex	15 (75.0)
Planned home birth	1 (5.0)
Forceps	1 (5.0)
Elective caesarean section	3 (15.0)

What was surprising was all interviewed women made the decision to breast feed. This is well above the average breastfeeding rates for Wales 2017 56% and Local Health Board rate of 72% June 2018 (Welsh Government, 2018). However the feeding at discharge from hospital and discharge from midwives' care was not collected.

In England and Wales breastfeeding rates increased from 60% in 2000 to 67% in 2005 among mothers in routine and manual occupations and from 54% to 67% among mothers who had never worked (Bolling 2007).

Below is a brief narrative for each woman interviewed
Olivia was 29 years old and lived with her partner and child. She had a diagnosis of anxiety, depression and OCD in adulthood and recognised symptoms had started in childhood. At the booking appointment Olivia had mild depression and anxiety which increased to moderate symptoms of depression and severe anxiety symptoms at interview. After an uncomplicated pregnancy, she gave birth to a boy on her due date after a short labour and went home after a day in hospital.

Helena a 36 year old was expecting her first child. She had a partner who lived with her most of the time and disclosed self-diagnosed stress. Helena had suffered abuse as a child and subsequently run away from home. She described how she had 'turned her life around' and appeared at the time of interview to have a very positive stance on life despite the list of social, emotional and practical issues up to this point. The EPDS and GAD-7 at booking indicated moderate depression and anxiety symptoms, which by the time of interview had reduced to no symptoms of depression and mild anxiety. Helena developed gestational diabetes during pregnancy and had one visit to the assessment unit and three extra USS. She had her labour induced at term because of the diabetes and, after a relatively short labour for a first time mother, gave birth to a girl. Both went home two days later.

Jackie was expecting her first baby at 24 years old and lived with a partner. The questionnaire indicated she had anxiety as an adult. At interview Jackie suggested she had a happy childhood and had never had mental health problems. At interview she described her moods as being overwhelmed rather than anxious. Yet as the interview progressed she began to describe anxious times as an adult which had led her to seek counselling. At the booking appointment the EPDS and GAD-7 indicated no symptoms of depression and mild anxiety. These increased slightly towards the end of pregnancy but not significantly, with mild symptoms of depression and anxiety. Antenatally she attended the assessment unit twice. She gave birth to a girl at term but required a manual removal of placenta and stayed in hospital for three days.

Amia was 33 years old, already had one school aged child and lived with her partner. The questionnaire did not suggest any mental health problems. At recruitment the screening tools suggested mild depression and anxiety symptoms which changed slightly at the end of pregnancy but still remained within the range of mild symptoms. Amia had gestational diabetes during pregnancy. She gave birth to a girl at term and remained in hospital for a day, then went home to be supported by her partner and mother.

Becky was 37 years old and lived with her partner. She did not have any children but had a missed miscarriage the previous year after years of fertility treatment. Becky's questionnaire indicated she had anxiety, depression and stress and had received counselling in the past. At the booking appointment the EPDS and GAD-7 indicated mild symptoms of anxiety and depression which both reduced by the time of interview to no symptoms of anxiety or depression. Due to anxiety from observing her sister's labour and birth Becky had requested an elective caesarean section. Her request was granted and she gave birth at term via caesarean section to a girl and went home after a day in hospital.

Dawn at 20 years old was the youngest participant at interview. She was single and unexpectedly pregnant for the first time. Dawn did not have a partner and had returned home to live with her parents for extra support. She had a history of anxiety and depression since adolescence. At the booking appointment the screening tools indicated mild depression but no anxiety symptoms. There were no symptoms of depression or anxiety at interview. After two visits to the assessment unit during pregnancy she had a very quick labour for a first time mother, gave birth to a girl and went home after six hours.

Tara was 32 years old, lived with her partner and they were expecting their first baby. She had been diagnosed with anxiety and depression in adulthood. In early pregnancy the EPDS and GAD-7 indicated symptoms of mild depression and anxiety which continued throughout pregnancy. Tara had been admitted once to the antenatal ward and had several USS. Due to her baby lying in a breech position she was offered an external cephalic version (procedure to turn the baby before birth). Tara's daughter was born via caesarean section at term and they stayed in hospital for a day.

Sally had no history of mental health problems, already had two children and was surprised to find herself pregnant. She was 29 years old and lived with her partner. Despite the shock at being pregnant and initial concerns about continuing with the pregnancy the screening tools suggested mild anxiety symptoms at the booking appointment and no symptoms of depression. At the time of interview there were no

symptoms of anxiety or depression. After a quick labour she gave birth to a girl and stayed in hospital for a day to monitor the baby due to maternal group B streptococcus colonisation.

Pippa 34 years old, lived with her partner and was expecting their first child. She explained at interview how the pressures of university had led to anxiety and depression, which led her to seek help from her general practitioner. There did not appear to have been any other instances of depression since, but Pippa did discuss recent periods of anxiety, especially during busy times at work. At recruitment she scored mild for both anxiety and depression symptoms, close to the cut of scores for moderate depression, both of these reduced slightly by the time of interview. Pippa had attended the assessment unit four times during her pregnancy and had five USS. She gave birth to a girl and went home after a day in hospital.

Laura was 33 years and lived with her partner and their child. She had no history of mental health problems but scored at the high end of mild for depression and anxiety symptoms at her booking appointment and they remained similar at interview. Laura described how the previous birth of a big baby had left her with physical problems and she now recognised she may have had mild depression during the months that followed. Laura, who had been assured she was not expecting a big baby again, gave birth to a girl after a quick labour, another large baby at 4860 grams, but went home within eight hours with no complications.

Rhian had had two previous children and was happy to be pregnant again. She was 34 years old and lived with her partner and had no history of anxiety or depression. At recruitment the screening tools indicated mild anxiety symptoms but these had reduced to no symptoms of anxiety and depression at interview. After a straightforward pregnancy she gave birth to a boy and went home a day later.

Gwenda was 34 years old and expecting her second child. She lived with her partner and according to the questionnaire had no history of any mental health problems. Yet at interview she revealed how she had 'counselling around self-harm' at university. At booking the EPDS and GAD-7 indicated mild anxiety and depression. These had increased slightly towards the end of pregnancy. Possibly due to the uncertainty during pregnancy because she had a low lying placenta and had been admitted to hospital three times because of vaginal bleeding. Gwenda had an emergency preterm caesarean section due to bleeding and stayed in hospital for eight days because her baby was premature and required phototherapy.

Karen a 35 year old was expecting her fist baby and lived with her partner. According to the questionnaire she had a history of stress. At recruitment Karen had symptoms of depression which were at the high end of mild and moderate symptoms of anxiety. Both increased by the time of interview to moderate depression and severe anxiety. At interview Karen described constant concerns regarding her baby's safety during pregnancy and requested a caesarean section for birth for that reason. A raised blood pressure and gestational diabetes during pregnancy led to two inpatient admissions and four visits to the assessment unit. Karen received her planned caesarean section at term of a boy. They remained in hospital for six days for the baby to receiving intravenous antibiotics.

Cath had no history of anxiety or depression, was 35 years old and lived with her partner and child. At the booking appointment she had mild symptoms of depression and anxiety which reduced to nil by the time of interview. Cath had a quick labour at home as planned and gave birth to a girl, with no complications.

Emma was 32 years old, with no history of anxiety or depression. She lived with her partner and their child. At recruitment the EPDS and GAD-7 indicated no depression and mild anxiety symptoms. At interview depression symptoms had risen slightly but were still within the cut off for mild symptoms. During pregnancy Emma had two visits to the assessment unit and three unscheduled USS. She did not have her anticipated home birth and was induced two weeks past her due date. After a long labour she gave birth to a girl who weighed 4910g, this was complicated by a postpartum haemorrhage. Emma recovered well and went home within 24 hours.

Victoria was a 30 year old, single mum who lived with her two children from a previous relationship. She had some contact with the children's father and lived near her parents. Victoria described her upbringing and adult years in detail. She had a history of anxiety, depression and mild hallucinations which started in adulthood. At recruitment she scored moderate for symptoms of depression and high for symptoms of anxiety: these had both risen by the time of interview to moderate depression symptoms and severe anxiety symptoms. During pregnancy she had two visits to the assessment unit and three USS and more than the average number of antenatal appointments. After a quick labour Victoria gave birth to a girl and was discharged home within 24 hours.

Zoe was 21 years old, expecting her first baby and lived with her partner. She had a history of anxiety since adulthood according to the questionnaire but was reluctant to expand on the implications during the interview. At the booking appointment she

scored mild for depression and anxiety symptoms which had both reduced by the time she attended the interview to no symptoms of depression and mild anxiety.

Zoe visited the assessment unit four times during pregnancy and was overdue when she went into labour, had an assisted birth by forceps due to the baby being distressed. She remained in hospital for a day and a half with her daughter who weighed over 4kg.

Natalie lived with her partner and child and was 34 years old. She had no history of anxiety or depression. At the screening symptoms were consistent with mild depression but no anxiety. At interview symptoms of depression were the same and symptoms of anxiety had risen slight indicating mild anxiety. After a quick labour Natalie gave birth to a boy and they went home within a day.

Isabel a 34 year old lived with her partner and their child. Despite having no history of mental health issues and happy to be pregnant, the screening tools indicated symptoms consistent with moderate depression but no anxiety. Isabel had suffered from hyperemesis gravidarum during the entire pregnancy of her previous child which could have been the cause of the high scores at booking appointment. At interview the EPDS scores had reduced to mild depression and the symptoms of anxiety had increased slightly. Isabel had attended four unscheduled USS during pregnancy. She gave birth to a girl after a short labour and went home after nine hours.

Mandy was 37 years old expecting her first baby and lived with her partner. The questionnaire indicated a self-diagnosed history of stress, yet at interview she described herself as 'never having any mental health' problems and being 'fairly laid back'. It was only in the last few years when fertility issues arose that her mental health suffered. At the booking appointment the EPDS indicated symptoms of moderate depression and GAD-7 symptoms of mild anxiety, both of which decreased to mild and nil respectively later in pregnancy. After giving birth to a boy they went home a day later.

Check list for contact via telephone

Hello this is Nicola, a researcher at the maternity unit, am I speaking to ……………..

You may remember you completed a questionnaire…. and provided consent to be contacted later in pregnancy?

How has your pregnancy been?

Any referrals to specialist services? FM/PMNH

How many weeks pregnant are you now?

Could I provide a brief overview of follow up……

Are you available to take part in an interview…

Arrange date and time

Date ……….   Time ……….   Venue ………..

Check contact details correct

I will post/email you further details about the study

Address………………….

Tel no……………………….

Email……………………………….

Can I contact you again the day before to check if you are still available? Yes/No

How?

Thank you

Appendix 17 Participant information for women – Interview

Study information for women
(Interview)

Invitation

Thank you for participating in the first part of this study when you attended your booking appointment. As part of the initial consent, you agreed that we could contact you and invite you to be interviewed. Before you decide whether to be interviewed, take time to read the following information. If there is anything that is not clear or if you would like more information, please see contact details below. This study is being conducted by a midwife who works for Cardiff and Vale University Health Board as part of a PhD.

What is the purpose of the study?

During pregnancy moods and emotions can fluctuate and this can affect pregnant woman, their family and friends. However there is not much up-to-date information about the number of women that are affected by mood and mental health issues either in pregnancy or after childbirth. We do not know if women want support and if there is support available, how they can access it. In this part of the study we are inviting a small number of women to attend an interview to explore their mood before and during pregnancy, their experiences and how they feel they have been supported. This information will be important for developing policies to support women with low mood and to improve maternal mental health care.

Why have I been invited to take part?

A sample of women who completed the questionnaire at booking clinic and consented to follow up have been invited to take part in an interview.

Do I have to take part?

It is up to you to decide whether or not to take part in this study. If you decide not to take part this will not affect the care you receive. You are free to withdraw at any time without giving any reason.

What will I be asked to do?

We would like to invite you to attend an interview at a convenient time for you after 34 weeks of pregnancy. This can be at your home, Cardiff University or at the University Hospital of Wales, whichever is easier for you. At the interview we will ask you to sign a consent form and fill in a questionnaire about your mood. The interview will take around 1 hour and will be audio recorded. During the interview we will use a time line to explore your mood and feelings during and before pregnancy. We will also discuss your experience of the care provided during this time and whether you sought any support for low mood.

We also ask your permission for the research team from Cardiff University for access to you and your baby's NHS records to provide information about your pregnancy and birth. The interview will be conducted in English and therefore a good understanding of the English language and a willingness to use it is required.

What will happen to the information I provide?

The confidentiality of your NHS records will be respected at all times. Your personal details will not be shared with anyone outside the research team unless concerns about your safety or the safety of others arise from the information you provide. A referral will then be made to the appropriate services for support. This will be discussed with you first but if the researcher has concerns for your safety, or that of your baby, there may be a professional requirement to report with or without your permission.

All your information will be stored on a password protected computer or in a locked filing cabinet. The audio recording will be given your unique participation number when being transcribed. We aim to publish the research results but individuals who have taken part will not be identified in any way.

Will I receive any payments?
Travel and parking expenses will be refunded if you need to attend the hospital clinic or the University for the interview.

How can I withdraw from the study?
You can withdraw from the study at any stage; this will not affect your care. We will use any of the information you have provided up to the point you withdrew, with your consent. If you withdraw then the information collected so far may not be able to be erased and this information may still be used in the study analysis. If you wish us to destroy any previous material collected, please email us to this effect and we will try do so.

Who is funding the research?
The study is part of a PhD project being funded by the Research Capacity Building Collaboration Wales (RCBC). It is being co-ordinated by Cardiff and Vale University Health Board and Cardiff University.

Who has reviewed/approved the study?
All research in the NHS is looked at by an independent group of people called a Research Ethics Committee to protect your interests. This study has been reviewed and given a favourable opinion by Wales Research Ethics Committee 4, REC reference: 17/WA/0319.

If I have any further questions who can I contact?
Nicola Savory, School of Healthcare Sciences, Cardiff University, Eastgate House, Newport Road, CF24 0AB   Email: savoryna@cardiff.ac.uk

What if there is a problem?
If you wish to express concern to someone not involved in the project, you should contact Dr Kate Button Director of Research Governance at Cardiff University School of Healthcare Sciences. You can write to Dr Button at the School of Healthcare Sciences, Cardiff University, Eastgate House, 35-43 Newport Road, Cardiff CF24 0AB, or contact her by either telephone on 02920 687734 or by Email: buttonk@cardiff.ac.uk

Please speak to your midwife or doctor if you would like to discuss any of the topics raised in this leaflet or if you would like further information about support services contact: NHS Direct https://www.nhsdirect.wales.nhs.uk/ or Samaritans on 116 123. This number is free to call (24 hours a day, 7 days a week). The Samaritans website is http://samaritans.org/

Thank you for reading the information and considering taking part in this research.

Study information for women : interview   Version : 3   Date : 13.10.17   IRAS ID: 235434

Appendix 18 Consent form for women's interviews

Consent form for women
(Interview)

IRAS ID: 235434

Study ID

Name of Researcher: Nicola Savory

Please initial

1) I confirm that I have read the Study information for women: Interview sheet, dated 13th October 2017, version 3 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2) I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected.

3) I understand that the relevant sections of my maternity records and records of my baby will be used to collect data during the study. I give permission for the Cardiff University research team to have access to my NHS records.

4) I understand that if concerns about my safety or the safety of others arise from the information I provide, referral will be made to the appropriate services for support. This will be discussed with me first but there may be a professional requirement to report with or without my permission.

5) I agree to being interviewed.

6) I agree to the interview being audio recorded.

7) I agree to the use of anonymised verbatim quotes in publications.

8) I agree to take part in the above study.

....

Name of participant Signature Date

....

Name of person taking consent Signature Date

When completed: 1 for participant; 1 for site file; 1 for maternity notes

Consent form for women: interview Version: 3 Date: 13.10.17

377

Appendix 19 Focus group topic guide for midwives

These are topic guidelines with some example questions. Due to the inductive nature of the focus group, interesting topics that arise will be explored further.

General introduction and purpose of the focus group

Thank you for taking part in this focus group. You have all read the information leaflet and will have a general idea of the purpose of the study. There are no right or wrong answers only differing points of view. The questions are about your experiences of supporting women's mental health particularly during pregnancy. It is broadly divided into 3 sections, experiences, support and training.

For the recording could each of you state your pseudonym, which area of practice you are working in and how many years have you been practising as a midwife?

Talking to women about mental health

Could you tell me about the conversations that you have with women about their mental health.

What words/questions do you use to explore their mental health?

When do you ask them, booking, AN, PN?

How do the women respond, what issues have they raised?

Are they comfortable to discuss mental health?

Training

Could you tell me about any perinatal mental health training you have been to.

Where, what, was it helpful?

Support services

Thinking about women who require extra support for their mental health. Could you tell me about any support services that you signposted or refer women to.

Who, what, where and have they accepted the referral?

Study information for midwives
(Focus groups)

Invitation
We would like to invite you to take part in a focus group. This will be with other midwives discussing experiences of supporting women with mental health issues in pregnancy.

What is the purpose of the study?
During pregnancy mood and emotions can fluctuate and this can affect pregnant women, their family and friends. The study has engaged with pregnant women to explore their experiences of mental health issues while pregnant. As midwives are the main care providers for pregnant women, we are interested in finding out more about midwives perspective of providing care for these women.

Why have I been invited to take part?
All midwives who work for Cardiff and Vale University Health Board have been informed by email or posters placed around the unit about the study and asked to respond if they are available to attend one of the planned focus groups. If the sessions are oversubscribed midwives will be invited on 'first come first serve' basis.

Do I have to take part?
It is up to you to decide whether or not to take part in this study. You are free to withdraw at any time without giving any reason.

What will I be asked to do?
You will be invited to attend a focus group with other midwives. These will be held at the University Hospital of Wales or community team office bases. Before the focus group you will be asked to sign a consent form. The focus groups will take around 45 minutes and will be audio recorded. Each group will have up to 10 midwives with the researcher as facilitator. The topics will be based around your experiences of caring for women with mental health issues in pregnancy, whether midwives are aware of where to refer women in need of extra support and issues raised in the questionnaire. The focus group will be conducted in English and therefore a willingness to use English in the focus groups will be required to participate.

What will happen to the information I provide?
Your personal information and details will only be shared outside the research team if there is disclosure of professional misconduct (for example, if information is given

Study information for midwives: focus Groups   Version : 3   Date : 13.10.17   IRAS ID: 235434

indicating practice which has contravened the NMC Code). In the case of misconduct being reported, Cardiff and Vale University Health Board's procedure for Raising Concerns will be followed.

All the information will be stored on a password protected computer or in a locked filing cabinet. The audio recording will be given your unique participation number when being transcribed. We aim to publish the research results but individuals who have taken part will not be identified in any way.

How can I withdraw from the study?
You can withdraw from the study at any stage. If you withdraw then the information collected so far may not be able to be erased and this information may still be used in the project analysis. If you wish us to destroy any previous material collected, please email us to this effect and we will try do so.

Who is funding the research?
The study is part of a PhD project being funded by the Research Capacity Building Collaboration Wales (RCBC). It is being run by the Cardiff and Vale University Health Board and Cardiff University.

Who has reviewed/approved the study?
All research in the NHS is looked at by an independent group of people called a Research Ethics Committee to protect you interests. This study has been reviewed and given a favourable opinion by Wales Research Ethics Committee 4, REC reference: 17/WA/0319.

If I have any further questions who can I contact?
Nicola Savory, School of Healthcare Sciences, Cardiff University, Eastgate House Newport Road, CF24 0AB, Email: savoryna@cardiff.ac.uk

What if there is a problem?
If you wish to express concern to someone not involved in the project, you should contact Dr Kate Button Director of Research Governance at Cardiff University School of Healthcare Sciences. You can write to Dr Button at the School of Healthcare Sciences, Cardiff University, Eastgate House, 35-43 Newport Road, Cardiff CF24 0AB, or contact her by either telephone on 02920 687734 or by Email: buttonk@cardiff.ac.uk

If you are effected by any of the information discussed you can self-refer to the Employee Wellbeing Service, Email: employee.wellbeing@wales.nhs.uk, tel no.: 02920744465 or speak to your line manager or GP.

Thank you for reading this information and for considering taking part in this research.

MoMs

Consent form for midwives
(Focus group)

IRAS ID: 235434

Name of Researcher: Nicola Savory

Study ID

Please initial

1) I confirm that I have read the Study information for midwives: Focus groups, dated 13th October 2017, version 3 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2) I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.

3) I understand that if there is disclosure of professional misconduct during a focus group (for example, if information is given indicating practice which has contravened the NMC Code) Cardiff and Vale University Health Board's procedure for Raising Concerns will be followed.

4) I agree to be involved in the focus group.

5) I agree to the focus group being audio recorded.

6) I agree to the use of anonymised verbatim quotes in publications.

7) I agree to take part in the above study.

....
Name of participant   Signature   Date

....
Name of person taking consent   Signature   Date

When completed: 1 for participant and 1 for site file

Consent form for midwives: focus group   Version: 3   Date: 13.10.17

Appendix 22 Reflexive account of my PhD journey

The reasons for choosing this area of study were mentioned in chapter one and positionality as a midwife and researcher briefly discussed in chapter three. Now at the end of my PhD, I have looked back at the notes made throughout, concerning my thoughts and experiences and the highs and lows of the research project. Some of the entries are described below.

Ethics

The ethical process is often mentioned along with a sigh and stories of problems that arose. It was not as arduous as expected but several thoughts came to mind during the process of designing the participant information. I began to question the length of the information leaflets that are required to ask participants to fill in a questionnaire. After all many people fill in surveys online for other organisations such as the local council, or the health boards' *Two minutes of your time*, feedback forms. These do not require long information leaflets to be read or consent forms to be signed. Yet they are still analysed and data used in publications.

In addition there were several instances where midwives asked questions, or discussions were had, regarding the study whilst distributing questionnaires, often questions which were later discussed in the focus groups. As formal processes were not completed these conversations could not be used to inform the study. Calls have been made for 'micro-ethics' based on the researchers' judgement and integrity (Pollock 2012) or an 'ethical process' to be introduced (Chenhall 2011) which would allow more flexibility. This would also reduce the time taken to produce and read these documents. Understandably studies that carry more risk to participants or interventional studies require information leaflets. In this instance, as there was a second stage to the women's phase of the study, it seemed reasonable to provide them with extra information regarding the follow up study and consent was required to contact them at a later date.

Recruitment phase

The number of women approached and recruited varied dramatically, between one to 12 women per clinic. What was obvious was that very few women had read the information in their 'booking pack', which contained the study's participant information. After discussion with several midwives I was encouraged to find there was a process in place to avoid paper wastage and the information was going to be uploaded to the website to which women could be signposted via midwives. This does pose the question of how much information women require or need. In retrospect, I was surprised women did not read the information, as in the interviews there was constant

382

reference to information seeking regarding pregnancy in an effort to keep their baby safe. Maybe it's because the information is received prior to confirmation of pregnancy by USS and women are afraid to read it until confirmation of a healthy baby is provided.

Overwhelmingly women and midwives were keen to support the study and acknowledged it was an important topic; some apologising for not being able to complete the follow up interviews. I was further encouraged when two women who had participated in the Grown in Wales study which I had been involved in previously, were more than keen to take part in this study. Another woman who had previously had care in an NHS Trust in England stated that she had been expecting to be asked to take part in research as this was a feature of care in her previous pregnancy. This reassured me that women are keen to support research.

Women who questioned the study were more concerned with data protection than any other aspect. This did make me wonder if recruiting participants will become harder with the increasing publicity about data breaches. I did debate if I should have spent more time assessing their fears and reassuring them. As it was, I did not pursue the matter as recruitment was going well. This reminded me of the main concerns on the previous study I supported (Grown in Wales); several women declined to participate due to the worry of biological samples and storage of their DNA. This did also make me question research studies that I have personally opted into and wonder if I should be more questioning about sharing my data and DNA.

The decision to use timelines in the interviews with women was designed to prompt discussion and assess women's mental health at specific time points in their life. This was realised, with some women apologising for missing periods or jumping forward and backwards over their lifetime. It was originally envisaged that women would draw their own timeline however this did not materialise. Reflecting on this issue I began to wonder if the detail in the timeline I produced, as well as busy lives may have led to women declining to draw their own. Both the women and I felt comfortable using the timelines, it also serve as a prompt, and may also have put us both at ease at the beginning of the interview. As a tool I would use a timeline in another suitable study, possibly providing a less detailed timeline and encouraging the individual to draw their own.

During interviews with women I began to become aware of how unhappy some women were with pregnancy. Having had two straight forward pregnancies myself I maybe had not thought much about this side of pregnancy. Having spoken to other colleagues I realise that maybe I am in the minority, having enjoyed my pregnancies and it is the general public's perception which has led me and others to believe pregnancy to be a

happy time. I also began to realise the women who were finding pregnancy the most difficult were mainly the ones who had a history of depression or anxiety and were very 'in control' of their lives. Occasionally the physical symptoms of the pregnancy were the cause of anxiety, such as 'early morning sickness', but even then the resilient women seemed to rationalise it and there was not a constant feeling of low mood, or they hid their feelings.

Analysis

As a midwife I found the process of separating myself from the data difficult and much of the information I listened to and read in the transcripts seemed on face value familiar to me. I therefore felt it important that a second person, preferably not a midwife, should look at the data to distinguish the differences.

My supervisor (a qualified mental health nurse) coded one transcript from the interviews independently. It was helpful to have an 'outsider' look at the data to gain another perspective and increase validity. I was pleased that although called different names, their codes were similar in meaning to mine. We also discussed possible themes, areas for discussion and areas to leave out. One area we decided should not be a main theme was around the topic of USS and fetal movements. As a midwife I think I honed in on these because they are major discussion points in obstetrics and midwifery at present. I was reminded of the need to relate the themes to the aims and objectives of the study rather than attempting to find every theme of interest to me. We discuss these as a possible area for secondary analysis; a paper or post-doctoral topic.

While analysing the interview data I was aware I was trying to give voice to the women about their lived experience, as well as trying to answer the aims and objectives and fitting the data into themes. I found it was an immersive process and I needed to keep rereading the transcripts and codes and tried rearranging them into groups on Excel spread sheets, post it notes on a pin board and mind maps. After weeks of thinking and sleeping on the mass of notes, the final themes came to mind in the middle of the night. I wrote my thoughts and possible themes down. The next day I reviewed what I had written and discovered what were possible emerging themes, which changed little in the process of writing up.

Discussion

While writing the discussion chapter several thoughts occurred to me. As a midwife I have been accused of being 'too nice' to women. I am still not sure how it is possible to be too nice and it is a worrying comment coming from caring health professionals. I can only presume this is because I spend time talking to women and listening to their concerns. Which might explain why I have also been classed as 'too slow', a topic

384

discussed in this thesis. Thankfully these comments were made several years ago and more recently I have been aware of women complementing the care shown by the majority of staff. It is possible the feedback from women has highlighted women's experiences and their concerns about staff and this has had more of an impact than managers trying to instil changes.

Concluding this study has led me to acknowledge that even though previous research has focused on the needs of women in low socioeconomic groups or those accessing specialist support services such as PNMHT those with higher socioeconomic status also suffer from mental ill health. This study filled the gap in including women with mild to moderate mental health problems from higher socioeconomic groups. Revealing their concerns are similar to women in low socioeconomic and minority backgrounds, or women with severe mental health problems and all women require to be listened to and taken seriously and supported whatever their concerns are at that present time, regardless of background, race or needs.