

*A challenge to
distorting
tendencies:
understanding
homelessness
through
administrative data
linkage*

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ABSTRACT

This thesis contributes to the ongoing development of administrative data linkage for the study of homelessness in the United Kingdom (UK), by focusing on how these novel methods can alter our understanding of homelessness; particularly homeless people's interactions with the police and healthcare services. Existing evidence suggests that people experiencing homelessness have poorer health, more emergency healthcare interactions, are more likely to be the victims of crime and that there is bi-directional association between imprisonment and homelessness. However, the quantitative evidence base is dominated by studies whose participants are shelterless, rough sleeping, or in low threshold services known to be used predominantly by more excluded people experiencing homelessness. O'Sullivan et al. (2020) argue that the way homelessness is depicted in much of the evidence obscures the heterogeneity of homelessness. This thesis will address this gap by analysing linked administrative data on homelessness, health and police interactions. A data-led definition of homelessness is used, rather than drawing on a person's legal homelessness status, homelessness is defined as contact with homelessness services at any point during the study period. By linking administrative data from statutory homelessness services, this thesis will draw on wider definitions of homelessness, build the evidence base and challenge prevailing narratives. This thesis develops a theoretical framework based on Gowan's (2010) three talks: sick talk, sin talk and system talk, adding to this using Johnson et al's (2018) typology of social control of people experiencing homelessness. My theoretical framework shows the links between different forms of social control and the talks, demonstrating the complexity of their interaction. Being one of the first studies in Wales to link statutory homelessness data to healthcare data, and the first study in the UK to link to police data, this thesis contributes novel insights into the future use of data linkage in the field of homelessness research in the UK. It concludes that administrative data have a unique role in supporting our understanding of homelessness, particularly in understanding the diversity of experiences and interactions included under the umbrella term of 'homelessness'. The findings challenge the predominance of sin and sick talk and argue for a greater consideration of system talk, which has the potential to support structural change to aid the reduction of homelessness. It also develops a

new talk – safety talk – which conceptualizes the role of the police, and their ability to use force, on the safety of people who have experienced homelessness.

Table of Contents

1	INTRODUCTION.....	1
1.1	THE RESEARCH AIMS AND OBJECTIVES	4
1.2	STRUCTURE OF THESIS	5
2	THEORETICAL FRAMEWORK: SIN TALK AND SICK TALK AS FORMS OF SOCIAL CONTROL	9
2.1	CHAPTER CONCLUSION	22
3	LITERATURE REVIEW.....	23
3.1	INTRODUCTION	23
3.2	A DEFINITION OF HOMELESSNESS: THE ETHOS TYPOLOGY	24
3.2.1	<i>Personal and household characteristics.....</i>	<i>30</i>
3.3	THE HOMELESSNESS ARCHIPELAGO	35
3.4	HEALTH AND HOMELESSNESS	38
3.4.1	<i>Mental health diagnoses and problematic drug and alcohol use</i>	<i>39</i>
3.4.2	<i>Service interactions and changes in healthcare use</i>	<i>42</i>
3.4.3	<i>Spaces of care.....</i>	<i>44</i>
3.5	THE CRIMINAL JUSTICE SYSTEM AND HOMELESSNESS	46
3.5.1	<i>Offending, incarceration, and homelessness</i>	<i>46</i>
3.5.2	<i>Criminal victimisation and homelessness.....</i>	<i>48</i>
3.5.3	<i>The space of criminal justice.....</i>	<i>49</i>
3.6	CHAPTER CONCLUSION	52
4	METHODOLOGY.....	53
4.1	RESEARCH APPROACH.....	53
4.1.1	<i>Epistemology and ontology.....</i>	<i>53</i>
4.1.2	<i>Administrative Data and the Benefits for Research on Homelessness</i>	<i>56</i>
4.1.3	<i>Ethics.....</i>	<i>59</i>
4.2	DATA ACCESS	63
4.2.1	<i>Challenges and reflections on data access.....</i>	<i>70</i>
4.3	THE DATASETS.....	70
4.3.1	<i>Local Authority statutory homelessness service data.....</i>	<i>72</i>
4.3.2	<i>The Emergency Department Dataset.....</i>	<i>75</i>
4.3.3	<i>Crime and Policing Dataset.....</i>	<i>82</i>
4.4	ANALYSIS APPROACHES AND CONSIDERATIONS.....	89
4.5	CHAPTER CONCLUSION	92

5	WHO IS HOMELESS THROUGH THE LENS OF ADMINISTRATIVE DATA	95
5.1	INTRODUCTION	95
5.2	ANALYSIS	96
5.2.1	<i>Identifying and defining a homelessness event in messy administrative data ..</i>	<i>97</i>
5.2.2	<i>Assessing the feasibility of using the variables in the raw dataset.....</i>	<i>98</i>
5.2.3	<i>Data cleaning and creation of a dataset for further linkage</i>	<i>101</i>
5.2.4	<i>Demographics of final homelessness dataset</i>	<i>109</i>
5.3	DISCUSSION	112
5.3.1	<i>Making heterogeneous forms of homelessness visible</i>	<i>113</i>
5.3.2	<i>Using administrative data to address the distortion of homelessness.....</i>	<i>115</i>
5.3.3	<i>The complexities of administrative data analysis.....</i>	<i>117</i>
5.4	CHAPTER CONCLUSION	118
6	ASSUMPTIONS OF SICKNESS: THE ORDINARINESS OF HOMELESS PEOPLE'S EMERGENCY HEALTHCARE USE	120
6.1	INTRODUCTION	120
6.2	ANALYSIS	121
6.2.1	<i>Exploring the health interactions for all people who have experienced homelessness</i>	<i>122</i>
6.2.2	<i>Emergency healthcare use of a cohort of homeless service users and a matched control group.....</i>	<i>125</i>
6.3	DISCUSSION	133
6.4	CHAPTER CONCLUSION	140
7	BEYOND CRIMINALISATION: INTERACTIONS BETWEEN THE POLICE AND HOMELESSNESS SERVICE USERS	143
7.1	INTRODUCTION	143
7.2	ANALYSIS	144
7.2.1	<i>The intersection between institutions: homelessness services and police services.....</i>	<i>145</i>
7.2.2	<i>Moving beyond the binary: neither a criminal nor a victim</i>	<i>147</i>
7.2.3	<i>Longitudinal relationship between homelessness events and police service interactions.....</i>	<i>154</i>
7.3	DISCUSSION	164
7.3.1	<i>Homelessness and immorality</i>	<i>164</i>
7.3.2	<i>A new talk: safety talk</i>	<i>166</i>
7.3.3	<i>A space for prevention and a need for system talk.....</i>	<i>168</i>

7.3.4	<i>Homelessness, gender, and violence</i>	169
7.4	CHAPTER CONCLUSION	171
8	CONCLUSION	173
8.1	THE FEASIBILITY OF LINKAGE AND ANALYSIS OF HOMELESSNESS DATA	174
8.2	ANALYSING INTERACTIONS WITH INSTITUTIONS AND DRAWING OUT HETEROGENEITY	177
8.2.1	<i>Exploring discourses of sick talk across institutions</i>	179
8.2.2	<i>From sin talk to 'safety' talk</i>	181
8.2.3	<i>System talk and harm prevention</i>	183
8.2.4	<i>Systems talk, sick talk and emergency healthcare</i>	185
8.3	IN CONCLUSION	187
9	REFERENCE LIST	189
10	ANNEXE	213
10.1	TABLES FOR CHAPTER 5	219
10.2	TABLES FOR CHAPTER 6	221
10.2.1	<i>A&E tables - Comparison between full cleaned data for those not known to homelessness services and people who have experienced homelessness</i>	225
10.2.2	<i>A&E tables - Comparison between homeless group and control</i>	226
10.2.3	<i>A&E tables - Frequent attendance</i>	227
10.2.4	<i>A&E tables - Inferential statistics output</i>	229
10.3	TABLES FOR CHAPTER 7	229

List of tables

TABLE 1 EURO-AMERICAN CONSTRUCTIONS OF POVERTY AND HOMELESSNESS COPIED FROM GOWAN (2010), P 29.....	9
TABLE 2: ETHOS TYPOLOGY OF HOMELESSNESS ADAPTED FROM EDGAR AND MEERT (2005)...	25
TABLE 3 RISKS IN ADMINISTRATIVE DATA RESEARCH	62
TABLE 4: MACRAL MATCHING THRESHOLDS	66
TABLE 5: MATCH RATE OF MACRAL FOR A&E DATASETS	77
TABLE 6 GENDER RECODING IN HEALTH DATASET	79
TABLE 7 AGE CODING IN HEALTH DATASET	79
TABLE 8 INJURY RECODING IN HEALTH DATASET	80
TABLE 9 TRIAGE CATEGORY CODING IN HEALTH DATASET	80
TABLE 10 DISCHARGE ROUTE RECODING IN HEALTH DATASET.....	81
TABLE 11 ARRIVAL MODE RECODING IN HEALTH DATASET	82
TABLE 12: MATCHING QUALITY TO UNIQUE IDENTIFIER FOR POLICE DATASET	84
TABLE 13 HOUSEHOLD TYPE RECODING IN HOMELESSNESS DATASET	86
TABLE 14 GRADE OF RESPONSE CODING IN POLICE DATASET	86
TABLE 15 GROUPED INTERACTION TYPE RECODING IN POLICE DATASET	87
TABLE 16: DEFINITION FOR FOUR MOST FREQUENT INTERACTION TYPES	88
TABLE 17: INVOLVEMENT CATEGORIES CHOSEN FOR ANALYSIS	89
TABLE 18 : HOUSEHOLD TYPE FREQUENCY IN RAW DATA.....	100
TABLE 19: ETHNICITY FREQUENCY IN RAW DATA	100
TABLE 20: AGE CATEGORY IN RAW DATA	100
TABLE 21: HOMELESSNESS CAUSE FREQUENCY IN RAW DATA.....	101
TABLE 22 MATCHING THRESHOLD TO UNIQUE IDENTIFIER ACCORDING TO MACRAL	103
TABLE 23: DIFFERENCE BETWEEN RAW AND CLEANED DATA – ETHNIC GROUP	108
TABLE 24: DIFFERENCE BETWEEN RAW AND CLEANED DATA – HOUSEHOLD TYPE	108
TABLE 25: DIFFERENCE BETWEEN RAW AND CLEANED DATA – AGE GROUP. EVENT LEVEL	109
TABLE 26: STANDARD DIFFERENCES FOR GENDER BETWEEN CLEANED DATA AND DATA FLAGGED FOR EXCLUSION	109
TABLE 27: FREQUENCY OF HOMELESSNESS EVENTS	110
TABLE 28: PWEH AND NKHS, FULL CLEAN GROUPS, TRIAGE CATEGORY	123
TABLE 29 PWEH AND NKHW, FULL CLEANED GROUPS, INJURY TYPE	124
TABLE 30 PWEH AND MATCHED CONTROL, TRIAGE CATEGORY	127
TABLE 31 TYPE OF INJURY BY HOMELESSNESS AND CONTROL GROUPS – PER CENT. PERSON LEVEL.....	129
TABLE 32: COMPARISON OF MEAN, MEDIAN AND 95 TH PERCENTILE OF NUMBER OF INTERACTIONS FOR NKHS AND PWEH.....	146

TABLE 33 COMPARISON OF FREQUENT INTERACTION FOR PWEH AND NKHS.....	146
TABLE 34: GRADE OF POLICE RESPONSE FOR PWEH AND NKHS. WITHIN EVENT PERSON DUPLICATES EXCLUDED	148
TABLE 35: TYPE OF INTERACTION, GROUPED FOR PWEH AND NKHS. WITHIN EVENT PERSON DUPLICATES EXCLUDED	148
TABLE 36 FREQUENCY FOR ALL INTERACTION CATEGORIES FOR PWEH (N=111,483) AND NKHS (N=3,137,404) IN CLEANED DATA	150
TABLE 37: FREQUENCY FOR ASB, DRUGS AND CRIMINAL DAMAGE (NKHS N = 2,179,993 PWEH N = 83,597)	154
TABLE 38: INTERACTION TYPES FROM RAW POLICE DATA	213
TABLE 39: INVOLVEMENT CATEGORIES FROM RAW POLICE DATA	216
TABLE 40: RECODING OF ETHNIC GROUP FROM RAW DATA	219
TABLE 41: RECODING OF 'CAUSE OF HOMELESSNESS' FROM RAW DATA	220
TABLE 42: AGE AT FIRST HOMELESSNESS EVENT IN CLEANED, PERSON-LEVEL-DATASET	220
TABLE 43: HOUSEHOLD TYPE OF LEAD APPLICANTS IN CLEANED PERSON LEVEL DATASET	221
TABLE 44: ETHNIC GROUP IN CLEANED PERSON-LEVEL DATASET.....	221
TABLE 45: NKHS CLEANED AND RAW DATA FOR INJURY TYPE. EVENT LEVEL	221
TABLE 46: NKHS CLEANED AND RAW DATA FOR TRIAGE CATEGORY. EVENT LEVEL	222
TABLE 47 NKHS CLEANED AND RAW DATA FOR DISCHARGE ROUTE. EVENT LEVEL	222
TABLE 48 NKHS CLEANED AND RAW DATA FOR ARRIVAL MODE. EVENT LEVEL	223
TABLE 49 PWEH CLEANED AND RAW DATA FOR INJURY TYPE. EVENT LEVEL	223
TABLE 50 PWEH CLEANED AND RAW DATA FOR TRIAGE CODE	224
TABLE 51 PWEH CLEANED AND RAW DATA FOR DISCHARGE ROUTE. EVENT LEVEL	224
TABLE 52 PWEH CLEANED AND RAW DATA FOR ARRIVAL MODE. EVENT LEVEL	225
TABLE 53 COMPARISON OF DISCHARGE ROUTES FOR ALL NKHS AND PWEH. EVENT LEVEL ...	225
TABLE 54 COMPARISON OF ARRIVAL MODES FOR ALL NKHS AND PWEH. EVENT LEVEL.....	226
TABLE 55 COMPARISON OF TRIAGE CATEGORY FOR ALL NKHS AND PWEH. EVENT LEVEL.....	226
TABLE 56: TRIAGE CATEGORY OF ATTENDANCES TO A&E BY HOMELESSNESS AND CONTROL GROUPS – PER CENT. PERSON LEVEL	226
TABLE 57: TYPE OF INJURY FOR ATTENDANCES TO A&E BY HOMELESSNESS AND CONTROL GROUPS – PER CENT. PERSON LEVEL	226
TABLE 58: AGE CATEGORY OF FREQUENT ATTENDER GROUP – PER CENT. PERSON LEVEL	227
TABLE 59: MEAN NUMBER OF ATTENDANCES AND STANDARD DEVIATION FOR EACH CATEGORY	228
TABLE 60: POISSON REGRESSION	229
TABLE 61: RAW AND CLEAN DATA ON AGE IN POLICE DATASET	229
TABLE 62: RAW AND CLEAN DATA ON GENDER IN POLICE DATASET	230
TABLE 63 PERSON KNOWN TO HOMELESSNESS SERVICE, DATA TABLE FOR FIGURE 18	231

TABLE 64 PERSON NOT KNOWN TO HOMELESSNESS SERVICE, DATA TABLE FOR FIGURE 18 232

List of Figures

FIGURE 1: SOCIAL CONTROL AND THE ‘TALKS’ ADAPTED FROM JOHNSEN ET AL. (2018).....	14
FIGURE 2: DATA CLEANING PROCESS FOR A&E DATA.....	78
FIGURE 3: DIAGRAM OF THE STRUCTURE OF THE POLICE DATA	83
FIGURE 4: CLEANING PROCESS FOR POLICE DATASET	85
FIGURE 5: PROCESS OF THE FINAL HOMELESSNESS DATASET CREATION	97
FIGURE 6: COMPARISON BETWEEN RAW AND CLEANED DATASETS FOR HOUSEHOLD TYPE (CLEANED DATA N = 10020, RAW DATA N = 16971).....	107
FIGURE 7: COMPARISON BETWEEN RAW AND CLEANED DATASETS FOR AGE CATEGORY (CLEANED DATA N = 10020, RAW DATA N = 16971)	107
FIGURE 8: AGE OF PWEH AT THE TIME OF FIRST HOMELESSNESS EVENT IN THE CLEANED DATASET (N=7816)	111
FIGURE 9: HOUSEHOLD TYPE FOR LEAD APPLICANT AT THE TIME OF FIRST HOMELESSNESS EVENT IN THE CLEANED DATASET (N=7816).....	111
FIGURE 10: TREEMAP OF ETHNICITY FOR PWEH IN THE CLEANED DATASET (N=7816)	112
FIGURE 11: OVERVIEW OF DATA SET-UP FOR ANALYSIS	122
FIGURE 12 PWEH AND NKHW, FULL CLEANED GROUPS, ARRIVAL MODE (N=383,053)	124
FIGURE 13 PWEH AND NKHW, FULL CLEANED GROUPS, DISCHARGE ROUTE. THIS CHART IS EXCLUDING ‘DIED’ BECAUSE OF SMALL NUMBERS SKEWING CHART (LESS THAN 1%) (N=383,053).....	125
FIGURE 14: PWEH AND MATCHED CONTROL, ARRIVAL MODE (CONTROL GROUP N= 5020, HOMELESSNESS SERVICE USER GROUP N = 7773).....	127
FIGURE 15: PWEH AND MATCHED CONTROL, DISCHARGE ROUTE. THIS CHART IS EXCLUDING ‘DIED’ BECAUSE OF SMALL NUMBERS SKEWING CHART (LESS THAN 1%) (CONTROL GROUP N= 5020, HOMELESSNESS SERVICE USER GROUP N = 7773)	128
FIGURE 16 POISSON REGRESSION TO ANALYSE WHETHER BEING IN THE PWEH GROUP INCREASED NUMBER OF ATTENDANCES AT A&E WHEN CONTROLLING FOR OTHER VARIABLES KNOWN TO INCREASE ATTENDANCE	132
FIGURE 17: DIAGRAM OF THE STRUCTURE OF THE POLICE DATA	145
FIGURE 18 INTERACTION WITH POLICE BY INVOLVEMENT FOR PWEH AND NKHS. REFER TO TABLE 63 AND TABLE 64 IN THE ANNEX FOR THE FULL DATA (NKHS N=2,179,993, PWEH N= 83,597)	152
FIGURE 19 COMPARISON OF GENDER FOR EACH OF THE MAIN INTERACTION TYPES (NKHS N = 2,179,993 N = PWEH 83,597)	153
FIGURE 20 ALL INTERACTIONS WITH THE POLICE AROUND THE HOMELESSNESS EVENT SPLIT BY INTERACTION TYPE	156

FIGURE 21 NUMBER OF POLICE INTERACTIONS FOR PWEH LONE HOUSEHOLDS AND PWEH HOUSEHOLDS WITH DEPENDENTS: BEFORE AND AFTER HOMELESSNESS EVENT	159
FIGURE 22 NUMBER OF INTERACTIONS WITH THE POLICE IN THE YEAR PRIOR TO HOMELESSNESS FOR PWEH WHO INTERACTED WITH THE POLICE IN THE 30 DAYS IMMEDIATELY PRECEDING THEIR HOMELESSNESS	160
FIGURE 23 HOUSEHOLDS WITH DEPENDANTS INTERACTIONS WITH THE POLICE AROUND THE HOMELESSNESS EVENT SPLIT BY INTERACTION TYPE.	162
FIGURE 24 HOUSEHOLDS WITHOUT DEPENDANTS INTERACTIONS WITH THE POLICE AROUND THE HOMELESSNESS EVENT SPLIT BY INTERACTION TYPE	163

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Glossary and Acronym List

Glossary	Definition
Date subject	The unit of observation in a dataset. Usually individuals or businesses, depending on the source of the data (Griffiths et al. 2019 p.14)
De-identification	Removal of personal identifiable information from a dataset
Homelessness event	Any recorded interaction for a person or households with statutory homelessness services
Interaction	Any recorded contact between a person and a service
Involvement	a variable from the police data specifically referring to how a person was involved in the police event e.g., charged.
Statistical disclosure check	The process applied to statistical outputs (statistical results) to mitigate the risk of potentially disclosive results leaving the Safe Setting (Griffiths et al. 2019 p.14)
Safe setting	The technical means – whether physically located or virtual – through which the analyst works on the data (Griffiths et al. 2019 p.14)
Acronyms	Definition
A&E	Accident & Emergency
ACEs	Adverse Childhood Experiences
ADRN	Administrative Data Research Network
ALF	De-identified linking field
ASB	Anti-Social Behaviour
ETHOS	European Typology of Homelessness and Housing Exclusion
FA	Frequent Attendances
FEANSTA	European Federation of National Organisations Working with the Homeless
GP	General Practitioner
HIV	Human Immunodeficiency Virus
IGRP	Information Governance Review Panel
IRR	Incident Rate Ratio
MACRAL	Matching algorithms
MAR	Missing at random
MCAR	Missing completely at random
MEH	Multiple exclusion homelessness
MNAR	Missing not at random
NHS	National Health Service
NKHS	Not known to homelessness services
NSIR	National Standard of Incident Reporting
ONS	Office of National Statistics
PEH	Person Experiencing Homelessness
PWEH	People/person who have/has experienced homelessness
RECORD	Routinely Collected Health Data
SAIL	Secure Anonymised Information Linkage
STROBE	Strengthening the Reporting of Observational Studies in Epidemiology
UK	United Kingdom
US	United States
USA	United States of America

1 Introduction

This thesis contributes to the ongoing development of administrative data linkage for the study of homelessness in the United Kingdom (UK), by focusing on how these novel methods can alter our understanding of homelessness—particularly homeless people’s interactions with the police and healthcare services. There is significant evidence of a range of harms associated with homelessness, including imprisonment, gender-based and sexual violence, criminal victimisation, mental ill-health, mortality at a younger age, poorer physical health, and drug and alcohol misuse (Hwang et al. 2005; Heslin et al. 2007; Dyb 2009; Fazel et al. 2015; Lloyd et al. 2017; Paudyal et al. 2021). Evidence spans several decades and research traditions; including housing studies, geography, epidemiology, psychology, criminology and more. However, much of the quantitative evidence in the field of homelessness studies has, to date, originated from the United States, and largely relates to people in homeless hostels (Fitzpatrick and Christian 2006). When policy and practice draw on evidence that relates to this acute subgroup of a much broader homeless population (Edgar and Meert 2005; Busch-Geertsema 2010; Amore et al. 2011), this leads to what O’Sullivan et al. (2020) refer to as ‘distorting tendencies’.

O’Sullivan et al. (2020) argue that the way homelessness is depicted in much of the evidence obscures homelessness as a highly heterogeneous phenomenon, which differs across a range of personal characteristics and life events. Certain research methodologies contribute to the distortion of homelessness. Homelessness is a dynamic phenomenon, which most cross-sectional research methods cannot capture adequately. Short fieldwork periods of point-in-time studies, and most sampling for qualitative and quantitative fieldwork being undertaken at services serving the houseless, contributes to the patchy evidence base described by O’Sullivan et al. (2020). The evidence base is therefore influenced by how homelessness is defined and measured, shaping our understanding of the scale and impacts of homelessness, as well as public policy and the solutions to this issue. Gowan (2010), in her

ethnography, develops lenses which demonstrate the distortion of homelessness in policy, academia, frontline services and public thought. Gowan's (2010) first lens is sin talk: which arises from moral judgements on poverty and homelessness and summons the response of exclusion or punishment of people experiencing homelessness. The second lens, sick talk, arises from attributing homelessness to an individual's pathology, something which therefore requires therapeutic treatment to remedy.

As scholars have started to recognise the heterogeneity of homelessness, there has been a turn to a typology-based definition of homelessness, developed by the European homelessness organisation FEANTSA, known as the European Typology of Homelessness and housing exclusion, or 'ETHOS' (Edgar and Meert 2005; Busch-Geertsema 2010). ETHOS defines homelessness in relation to a range of living situations and presents a broad view of homelessness, capturing much of its complexity, albeit with some limitations (Amore et al. 2011). The consensus emerging around ETHOS further illustrates the distortion of much of the evidence base as much of the evidence on the wider harms of homelessness, poor health and interactions with the police is focused on those who sleep rough—just one part of ETHOS, the houseless. The result of this focus on houseless homelessness means that the experience of certain groups of people are excluded from the existing evidence base. For example, women experience houselessness less than men, and when they do, they are less likely to be included in research studies because of the locations used to connect with research participants (Baptista et al. 2017; Bretherton 2017).

In recognition of the limitations of the quantitative evidence base, and its distortions, there has been a growing interest over the last few decades in administrative data in the field of homelessness research (Culhane and Metraux 1997). Administrative data can be defined as the information an organisation collects while delivering its routine services (Hand 2018). Administrative data have particular relevance to homelessness research as there is no need for the recruitment of participants, the data are longitudinal but do not suffer from attrition, and can relate to whole populations accessing certain services (Grath-lone et al. 2022). Hence, it generally has very large numbers of observations and is not self-reported information. All these factors mean administrative data can meet many of the challenges faced by the evidence base on the harms associated with homelessness (Culhane 2016). This is particularly the case if data is linked, meaning use of different services or organisations can be explored; in

doing so, administrative data linkage can bridge siloed homelessness and wider public services in a way many data sources cannot. A person's records can be followed over time, showing life events and experiences and how they relate to one another. This means that depending on the data accessed, a diversity of research participants can be included, and the data facilitates exploring their interactions with different institutions or services.

Using administrative data for research faces a particular set of ethical, legal and practical challenges that are not the case when using other data sources (Harron et al. 2017; Hand 2018; Thomas and Tweed 2018; Moorthie et al. 2022). Experience in the UK is developing in managing these challenges. This thesis commenced when very little administrative data linkage on homelessness had been done in the UK. However, despite some headway being made since the inception of this thesis, progress to advance administrative data linkage, particularly on homelessness, has been slow. Many of the practical and technical issues still present challenges to researchers wishing to use administrative data (Thomas and Tweed 2018; Moorthie et al. 2022). Issues abound in each of the devolved nations: Scottish Government do not have access to individual-level datasets to undertake analysis, whilst the Office for National Statistics (ONS) undertake bespoke linkages between datasets, increasing the time needed and the technical expertise required to link data (I Thomas 2023, personal correspondence, 25 August). This thesis, therefore, adds insights that can help the normalisation of administrative data linkage as a method in homelessness research in the UK.

In the last decade, there have been significant advances in the use of administrative data, and its linkage, for social science research in the UK. Since the Digital Economy Act 2017, there has been substantial UK government investment in initiatives to support the use of administrative data in research. Grath-lone et al. (2022) identifies that government investment via the UKRI in the Administrative Data Research UK programme and the use of trusted research environments or 'safe havens', a centralised model of data access, have both supported researchers to overcome many of the challenges in accessing and using administrative data. The impact of these developments in the UK has meant that researchers can access support in using administrative data and has resulted in a growing evidence base. This thesis was able to take advantage of this investment in administrative data research in the UK, through

the Administrative Data Research Network (ADRN)—later becoming Administrative Data Research Centre Wales. When writing, this was the first study to analyse homelessness administrative data in Wales and link it with health data. This is one of the first UK studies to use police administrative data and to link it with homelessness data.

1.1 THE RESEARCH AIMS AND OBJECTIVES

Within this context, the research aimed to:

Contribute to the development of administrative data linkage as a method for the study of homelessness in the UK, specifically how these novel methods alter our understanding of homelessness.

The research objectives are:

- 1. To determine the feasibility of undertaking the linkage and analysis of administrative homelessness data in Wales.**

Administrative data analysis on homelessness has the unique potential to contribute to the evidence base on the harms associated with homelessness; however, administrative data analysis has a unique set of challenges and there are many barriers in its use for research. This thesis will draw conclusions on the potential of administrative data linkage on homelessness in Wales.

- 2. To explore how people who have experienced homelessness interact with three key institutions: statutory homelessness services, emergency health services and the police.**

Sin talk and sick talk demonstrate taken-for-granted ideas about how people experiencing homelessness interact with health services and the police. Still, there are gaps in the evidence on the health of people experiencing homelessness other than those who are shelter less and there are significant gaps in evidence on how people experiencing homelessness interact with the police. This thesis will address some of these gaps by analysing linked administrative data on homelessness, health and police interactions and further develop the existing evidence base.

3. To examine heterogeneity in the service interactions of people who have experienced homelessness, based on individual and household characteristics.

It is known that homelessness impacts many people, however evidence primarily focuses on the most severe forms of homelessness, chronic homelessness and shelterless homelessness. By linking administrative data from statutory homelessness services, this thesis helps us to consider a wider definition of homelessness, building the evidence base and potentially challenging prevailing narratives.

1.2 STRUCTURE OF THESIS

Following this introductory chapter (Chapter 1), this thesis will move on, in Chapter 2, to develop the theoretical framework used to structure the thesis. Chapter 2 will introduce and explore Gowan's (2010) talks and builds theoretical framework by further developing the talks using concepts of social control.

Chapter 3 explores how homelessness can be defined, the ETHOS typology and the limitations of this, particularly focusing on the temporality of homelessness. The first part of this literature review chapter aims to demonstrate the heterogeneity of personal characteristics and living situations associated with homelessness, showing the intersections between these factors. It explores the personal characteristics associated with homelessness, discussing literature on single or lone homelessness and family homelessness and how gender interacts with both household types. The chapter also focuses on multiple-exclusion homelessness as a framework for understanding the experiences of a specific group of people experiencing homelessness that brings together structural and personal characteristics. The second part of the literature review explores the parts of the homelessness archipelago that are the focus of this thesis: statutory homelessness services, health services and criminal justice services. The section sets the theoretical context of the homelessness system in Wales as a rights-based system intended to focus on prevention. A more detailed exploration of the system itself is undertaken in the following chapter. Next, the evidence on the health of people experiencing homelessness is discussed, focusing on problematic drug and alcohol misuse and mental health. Evidence on

changes to health as people move through homelessness is also outlined. The section explores barriers to accessing healthcare, which contributes to poorer health outcomes, and theoretical approaches to considering these interactions - geographies of care and conceptual ideas around coercive care or care and control. Finally, the chapter discusses the literature on criminal justice system interactions and homelessness, outlining the limited evidence on criminal victimisation. Additionally, the gendered links between violence and homelessness for women, offending and incarceration. The evidence on so-called 'quality of life' policing and the implications for the interactions between police and people experiencing homelessness is also explored.

Chapter 4 is in two parts. The first part has a theoretical focus. It explains the research approach used in this thesis, situating it within a pragmatist epistemology. The chapter then explores some of the strengths and limitations of using administrative data for social science research, explaining how it can be used to address some of the limitations in the evidence base on homelessness. The second part focuses on the practical aspects of the thesis. It explains how the SAIL Databank supported the research and discusses the challenges of using administrative data, explaining the ethical and practical challenges and the mitigation strategies used. Next, the approach to deidentifying the data is explained. The chapter then introduces the three datasets used in the thesis, explaining how they were cleaned and made ready for research, and the variables from each dataset which are used in the analysis. It concludes by discussing the analysis approach and how statistical analysis of administrative data differs from other data sources.

Chapter 5 addresses the Research Objective on the feasibility of using administrative data. It is both analytical and methodological; the process of cleaning and exploring administrative data is a key part of the research process that differs from the usual quantitative analysis. The chapter outlines the method of creating a cohort of those experiencing homelessness from administrative data. The chapter reflects on challenges and successes and draws lessons from the process. It then explains the final demographics of the cohort in the final homelessness dataset which is used for addressing Research Objectives Two and Three in the following Chapters.

Chapter 6 addresses each Research Objectives in turn, although it primarily focuses on Research Objective Two and Three, exploring how people experiencing homelessness interact with emergency health services, examining the heterogeneity within these patterns and assessing the feasibility of data linkage between homelessness and emergency health administrative data.. The homelessness cohort created in Chapter 4 is linked to Accident & Emergency (A&E) data for the same local authority, and a matched control group is created to draw out a comparison. The chapter explores differences in how people arrive at A&E, the seriousness of their attendance, if they have an injury, what it is, and where they are discharged. The chapter also explores the frequent attendance at A&E as a commonly identified marker of how people experiencing homelessness use A&E differently. The main theoretical lens is sick talk, exploring the extent to which a 'pathology', as defined by the theoretical framework, can be observed in the A&E attendance dataset.

Chapter 7 also addresses each of the research objectives. The homelessness cohort from Chapter 4 was linked with data on interactions with the police. The police data has all recorded interactions, not just those found to be criminal. The dataset also includes the victims of crime, those who report crimes as witnesses and many other types of interaction. The analysis discusses the main ways that people experiencing homelessness interact with the police, firstly considering the role of sick talk and then other theoretical lenses if the patterns demonstrate evidence of coercive care, revanchism or a need for system talk. The chapter then analyses the longitudinal relationship between interacting with the police and a homelessness event when a person approaches statutory homelessness services. This addresses both Research Objectives Two and Three. It allows for a temporal exploration of people's interaction with both services and draws the ways these patterns differ by gender and household type. The Chapter also reflects on Research Objective One, considering the feasibility of linking homelessness and police data.

Chapter 8 concludes the thesis, synthesising the findings across the analysis chapters and responding to the overall aim of the research and the research objectives set out above. It explains the contributions made. First, it discusses the methodological contribution, showing how administrative data linkage can contribute to the evidence base and making recommendations for further research, particularly on analysing administrative data. Then, it discusses the empirical contributions, outlining the

analysis results on the health and police interactions of the heterogenous cohort of those experiencing homelessness and showing how they diverge from much of the existing quantitative evidence base. It subsequently illustrates how the concepts of sick talk, sin talk, and system talk can be observed through the empirical findings and where the evidence in this thesis diverges from the talks. Lastly, the implications of the empirical findings for policy and practice are outlined.

2 Theoretical framework: sin talk and sick talk as forms of social control

An analytical framework was developed to make sense of the data analysis in this thesis, based on concepts established by Gowan (2010), who identifies competing versions of poverty and homelessness through a series of ‘talks’ or discursive archetypes. These are sin talk, sick talk and system talk. I have further developed these concepts through my research, drawing on the theoretical insights developed by Gowan (2010), using the talks as a way of analysing the main institutional interactions most often associated with homelessness.

Gowan’s archetypes were developed through a historical analysis of housing, homelessness, and poverty policy in the United States of America (USA) and an ethnographic discourse analysis conducted over many years of engagement with several homeless subcultures. Whilst Gowan’s (2010) work is primarily ethnographic, she ‘moves backward and forward, theory and evidence interspersed with less tidy, more organic detail’ (pg. xxiv). Through her analysis, Gowan (2010) argues that these archetypes are the result of specific local conditions but are informed by global socioeconomic shifts. Therefore, the way that she frames the talks is by drawing together scholarship on both poverty management in the USA and Europe. This Chapter will therefore interpret Gowan’s (2010) talks and explore how they align with wider homelessness literature and evidence.

Gowan (2010) argues that whilst often narratives on homelessness are the same as those on poverty management, they also diverge, Table 1 shows how she perceives the ways these theories on homeless and poverty ‘to relate to one another.

Table 1 Euro-American constructions of poverty and homelessness copied from Gowan (2010), p 29

Constructions of poverty	Moral	Disease	Systemic
Discourse on homelessness	Sin talk	Sick talk	System talk
Central cause of poverty/homelessness	Sin	Sickness	Characteristics of the social structure
Fundamental strategies for managing poverty/homelessness	Punishment and exclusion	Treatment	Social change/ social regulation
Focus of causal narrative	Individual	Individual	Structural
Notion of agency	Strong	Weak	Weak

For Gowan (2010), sin talk arises from moral judgements on poverty and summons the response of exclusion or punishment. Sick talk arises from attributing homelessness to the individual's pathology and summons the response of therapeutic treatment. System talk regards homelessness as the result of systemic injustice and calls for the response of societal transformation. As demonstrated in Table 1, for Gowan (2010) both system talk and sick talk are sympathetic towards homelessness, this is in opposition to sin talk where sympathy is for the non-homeless in the face of the so called disorderliness caused by street dwelling homeless people.

There are key links between Gowan's (2010) talks and common, but important, debates in homelessness literature about the causes of homelessness. Homelessness literature in the UK has now mostly moved past considering homelessness as either caused solely by structural or individuals factors to coalesce around the 'new orthodoxy' (Fitzpatrick 2005), where homelessness is attributed to an interplay between structural and individual factors. The 'new orthodoxy' within

homelessness research states that homelessness is triggered by structural causes such as policy changes, economic forces, and individual factors (Fitzpatrick 2005). Structural causes of homelessness function on a macro level and include trends such as the affordability of the housing market, poverty, unemployment, changes to welfare benefits and difficulty accessing affordable rented housing (Anderson 2007). Individual factors focus on personal issues, such as drug and alcohol abuse and other behaviours (Harding and Hartnett 2005). These factors then interplay, resulting in structural disadvantages, such as poverty and lack of affordable housing; people are less able to respond to personal issues such as relationship breakdown, bereavement and other traumatic events without becoming homeless (Fitzpatrick and Christian 2006).

Within the literature, it is striking that structural forces are often the focus, as poverty is taken as a universal risk factor (Somerville 2013). Although housing with a secure tenure is often painted as a panacea in homelessness literature, Atherton and McNaughton Nicholls (2008) have drawn attention to issues with this. Neatly outlining the overall issues, Shinn and Baumohl (1999 p.1) state that “preventing homelessness is not identical to ending poverty, curing mental illness, promoting economic self-sufficiency, or making needy people healthy, wealthy and wise”. In their research into homelessness assistance, Culhane and Metraux (2008) argue that whilst it is possible to make homelessness services more effective and therefore help more people, it does not address the underlying affordability issues many people face. Often the reality of homelessness causation is far more complex than the ‘new orthodoxy’ suggests; for instance, marriage breakdown and poor parenting could be said to be a structural or individual risk factor for homelessness (Fitzpatrick 2005). Gowan’s (2010) talks, as presented in Table 1, provide a framework for situating the empirical research in this thesis within broader narratives on homelessness. However, while these talks serve as a shorthand for such discourses, the theoretical framework of this thesis required further development to address how these talks relate specifically to homelessness in the UK. Gowan’s (2010) talks are based on her observations and analysis of social control. While these talks outline the macro-level forces driving responses to homelessness—reflected in everyday language, policy, and research—they must be contextualized as modes of social control within the UK. Social control is defined by Johnsen et al. (2018, p. 1106) as “measures which seek to mould the

behaviour of targeted individuals.” For this research, a mode of social control refers to a specific type of social control identified by Johnsen et al. (2018).

Situating the talks within the context of social control is essential to demonstrate their function. There is a degree of analytical distance between Gowan’s (2010) theorizing, which informed the creation of these talks, and the lived interactions of homeless individuals with health services and the police. This necessitates a closer focus on social control within the UK, where the data for this research originates. Due to how Gowan (2010) developed these talks, it is challenging to directly apply them to empirical research involving individuals experiencing homelessness in the UK. Therefore, to provide a theoretical basis for empirical observation and analysis, it is crucial to explore how these talks may operate as mechanisms of social control. Additionally, it is important to consider how they can be aligned with research grounded in the empirical interactions between homeless individuals and services in the UK. This approach bridges the gap between macro-level theoretical frameworks and empirical administrative data analysis. The following chapter will consequently examine how each of Gowan’s (2010) talks functions as a mode of social control, situating them within broader discourses on homelessness, including responsibilisation, revanchism, and the concepts of the deserving and undeserving poor. This analysis will illustrate how the theoretical framework transitions from macro-level literature to the empirical administrative data analysis presented in subsequent chapters.

Social control is a way of describing power that is deployed to change the actions or behaviour of marginalised groups. Parsell et al. (2020) started to develop this framework in their use of the concepts to explore the response in Australia to homelessness during the COVID-19 pandemic. They find that sin talk, and sick talk are both deployed in the response to homelessness, but instead of the typical individualising focus on both talks, they are focused on societal-level risks that must be controlled. This section will explore how each of Gowan’s (2010) talks functions as a mode of social control, utilizing the typology developed by Johnsen et al. (2018) to contextualize how these talks might operate within the UK (see Figure 1).

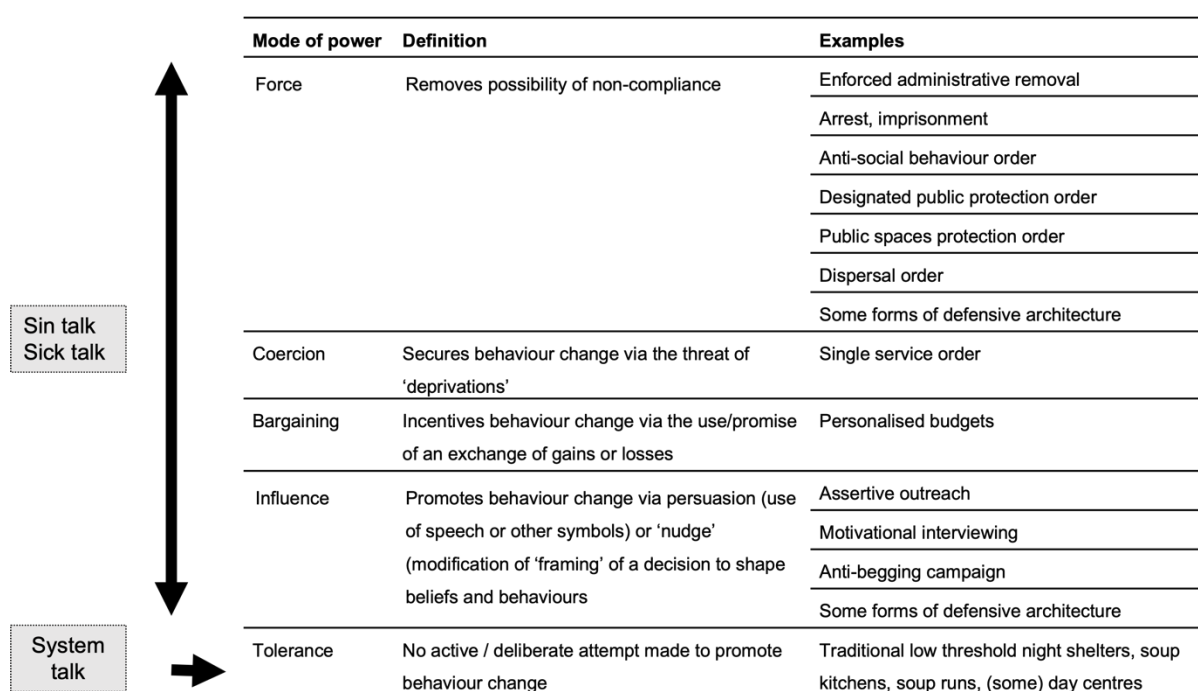
Johnsen et al. (2018) aim to move beyond ideologically driven narratives on street homelessness interventions (see Table 1), which often rely on normative analyses of

how individuals experiencing homelessness engage with services. They propose that a typology-based approach is valuable for transcending dominant discourses. The discourses identified by Johnsen et al. (2018) are consistent with those identified by Gowan (2010) in Table 1, where she summarises theories of knowledge on homelessness. Johnsen et al. (2018) suggest that their typology of social control offers a way to move beyond these ideological narratives. This application of a typology, aimed at transcending these narratives on homelessness, informs the use of "talks" and the topology of social control within this thesis. Specifically, it facilitates the translation of macro-level debates surrounding the legitimacy of interventions and service involvement into a refined analytical tool that supports empirical research, without imposing a normative framework.

Figure 1 illustrates how the discussions in Gowan (2010) align with the typology of social control developed by Johnsen et al. (2018). This typology was created through the integration of existing approaches to social control, as proposed by Johnsen et al. (2018). Their framework is divided into five modes of power, within which the interventions they identified are categorized. According to Johnsen et al. (2018), their typology facilitates a nuanced analysis of how these modes of power and their associated interventions often draw from opposing debates. This approach also reflects the complexity of Gowan's (2010) framework of talks, demonstrating how these frameworks can coexist within the same service or even a single conversation involving a service user, frontline worker, or policymaker.

Figure 1 shows how the talks might sit within Johnsen et al's (2018) typology as sick and sin talk might initially be seen as opposing narratives when applied to actual services for homeless people; they both can be applied to many types of services. This is because both sick and sin talk both wish to change the behaviour of those experiencing homeless, simply having differing motivations for doing so. It is only system talk that differs, as it refers to the structural reasons for homelessness; this means that no behaviour change is required. It therefore sits at the bottom of the typology in 'tolerance'. It is important that tolerance is included in the typology and analysis to demonstrate that not all responses to homelessness are focused on behaviour change.

Figure 1: social control and the 'talks' adapted from Johnsen et al. (2018)



There is a limitation, which applies to much of the evidence on homelessness and will be further explored in the following chapter, which is that both Gowan (2010) and Johnsen et al. (2018) developed their typology based initially on shelterless people experiencing homelessness. Homelessness is wider than shelterless people, and as Gowan (2010) continued her fieldwork, she traced the lives of her research participants through the homelessness archipelago, including homeless shelters, housing, and inpatient treatment centres. However, the talks she develops draw on her fieldwork with frontline workers, public policy analysis, and ethnographic fieldwork. Johnsen et al. (2018) similarly base their typology on the social control of rough sleepers. This thesis will therefore explore how these concepts can be used to understand the experience of a broader group of people experiencing homelessness. It will explore if they are subject to social control, which can be observed in their interaction with the police or A&E and if or how the 'talks' identified by Gowan (2010), spanning concepts of social control, can support our understanding of the experiences of homelessness in Wales.

Gowan (2010) develops her talks via her fieldwork with the homelessness archipelago and this thesis engaged with three specific parts of the archipelago in Wales through analysing and linking administrative data for each of them. These are:

- Local Authority statutory homelessness service dataset (referred to as the 'homelessness data')
- The Emergency Department Dataset (referred to as the 'A&E data')
- Crime and Policing Dataset (referred to as the 'police data')

There are conceptual links between each of the datasets and the talks developed by Gowan (2010) at the institutional level. Each chapter of this thesis focuses more on one of these forms of 'talk', to explore the ways in which housing, police and emergency healthcare institutions are connected to homelessness in Wales, drawing out connections and divergences. Although following Gowan (2010), the constructions are not distinct from one another; each can be deployed to explain various aspects of the homeless institutional landscape. Her use of the "talks" throughout the book is uneven. She asserts that, historically, policy and research narratives transition from "sin talk" to "sick talk" and "system talk." However, she emphasizes the continued presence of "sin talk" in the lived experiences of her research participants, including homeless individuals and those working in service roles. The 'talks' do not occur in isolation and can be used 'messily' by actors within a context. For instance, Gowan (2010) describes how frontline staff moved between describing their work as therapeutic to support people experiencing homelessness to overcome personal struggles or health issues but then moved into describing their clients as morally lacking and needing to be controlled. Therefore, whilst Chapter 6 main analytical focus is sick talk, due to the clear links between the therapeutic management of homelessness in a medical setting and the A&E data, aspects of system talk and sin talk will also be explored. The same is true for Chapter 7, where all three talks are used to explore the role of the police in the lives of people experiencing homelessness. This point on the messiness of the talks and the ways that they are interwoven is a key aspect of the theoretical framework.

Chapter 6 focuses on 'sick talk'. Gowan (2010) traced the emergence of sick talk historically, focusing on institutions, first considering sick talk in the context of the separation of the deserving and undeserving poor in infirmaries and poor houses for sick or disabled children and the able-bodied. Sick talk is then linked by Gowan (2010) to modern discourses on the deserving poor whereby homelessness is portrayed as a social issue deserving of public sympathy. This was in the face of anti-homeless

policy under Regan and she argues that activists portrayed homeless as suffered by those in categories which generated sympathy such as: veterans, white people, two parent families and those with disabilities. The focus of the homelessness services in Gowan's (2010) empirical analysis of the daily lives of her research participants, is disease and dysfunction and connects the professionalisation of services to growing literature on the pathology of homelessness, specifically 'addiction, depression and family dysfunction.' (pg 49). She suggests that, 'researchers developed complex multi-faceted models on the causes of homeless (pg 50)' in the fields of social welfare, psychology and public health.

She suggested that contemporary sick talk became recognisable in the eighties with both the professionalisation of homelessness services and the expansion of therapeutic services – a mass expansion of the homelessness archipelago. She links this to the emergence of the highly influential concepts, both within and outside of the USA, of 'housing readiness' and the 'continuum of care' (Tsemberis et al. 2004; Busch-Geertsema and Sahlin 2007; O' Shaughnessy et al. 2021). Whilst being designed to utilise shelters to transition people out of homelessness, partly due to a lack of housing, the model has become one where the transition from homelessness can only be achieved through the remedy of individual pathology, which only once addressed allows someone to be housed. She suggests that sick talk merely accommodates homelessness and cannot ameliorate it. Gowan (2010, pg. 50) directs a strong critique at much of this literature, arguing that 'from the point of view of the many health professionals building expertise within the homelessness archipelago, homelessness was a symptom of the severe mental illness and substance misuse of the few and had little to do with working and housing conditions of the many'.

Returning to the typology in Figure 1, sick talk, for Gowan (2010), sits mainly within bargaining and influencing as the modes of power deployed. This is because, at their core therapeutic interventions aim to change a person's behaviour, a key aspect of social control. Within much of her fieldwork, the services her participants engaged in aimed to 'influence' as this is key to the idea of individual pathology, which underlies 'sick talk'; there is something wrong with the person experiencing homelessness. The part of the homelessness archipelago that Gowan (2010) engages with that moves into bargaining, is the 'continuum of care' model, which was the main way that her participants could try to access housing. They needed to demonstrate that they were

changing their behaviour before moving through the homelessness system. Moving beyond Gowan (2010), sick talk might also be observed through 'force' when considering some of the rationale for applying some of the examples found in Johnsen et al. (2018). Within Johnson et al. (2018) ideas which could be attributed to sick talk can be seen in 'strong' and 'weak paternalism' or 'coercive care', where they describe the rationale behind public space protection orders and other 'forceful' interventions. Johnson et al. (2018) suggest the intervention is justified because it is in the best interest of the individual, helping them fulfil their capabilities or avoid further harm. Gowan (2010) empirically reveals sick talk and social control in the personal narratives of research participants and homelessness-focused service providers. She suggests that for those on the street, sick talk is not used by homeless people because of the requirement of remaking the self through airing their 'dirty laundry' of trauma and inner emotional selves. In Gowan's (2010) fieldwork, this indicates a lack of self-respect. However, for those who have had a sustained engagement with services and ultimately gained housing, the narrative is more prominent, particularly the relief at being 'sick' rather than 'bad'.

Gowan (2010) does not engage specifically with the space of the hospital, which is where the A&E data used in this thesis is recorded and is the main service referred to in quantitative studies detailing the poor health of people experiencing homelessness and drawing on ideas of sick talk. Gowan (2010) links academic research and the individual pathology of homelessness. Many drivers and narratives around sick talk identified by Gowan (2010) are prominent in policy analysis and research within the UK context. Although not using the terminology, she particularly draws on concepts related to 'responsibilisation' and 'neoliberal paternalism'. These ideas emerged from analysis of the changes in the UK welfare state under neoliberalism and scholars suggest that services move to focus on building skills related to responsible citizenship, rather than giving services based on rights and can also refer to ideas of welfare dependence (Schram 2010). Some argue that these approaches infantilise welfare subjects, however more recent evidence suggests that in frontline services responsibilities and an ethic of care which is in opposition to neoliberalism can coexist (England 2023). Chapter 6 will seek to situate the empirical analyses of administrative data taken from emergency medical treatments within the lens provided by Gowan (2010).

In Gowan (2010), sin talk is defined by the construction of poverty through character failings which call for either control or punishment, sometimes the blurring of the two. She argues that this narrative has remained the same over the last 500 years for both North American and European Protestants. Gowan (2010) asserts that the USA history of colonialism means that ideas of poverty management are even more focused on punishment and incarceration; themes of racism in the USA underly much of the historical analysis. She suggests that the more specific discourse on homelessness linked to these ideas, sin talk, stems from the idea of 'the lawless tramp'. The management of homelessness for sin talk has two prongs, clearance to move people away from the rest of society and punishment through confinement.

Sin talk is centred around personal responsibility: the key difference between sin talk and the other talks is the prominence of personal agency (see Figure 1). This can be linked to the idea of homelessness as a choice (Parsell 2012). In the UK, scholars undertaking policy analysis have found that there is a narrative that the welfare state enables the immoral choice of a 'homelessness lifestyle' (Parsell 2012). This then links to other longstanding concepts of the 'undeserving poor', to be compared with the 'deserving poor'. Those choosing homelessness are undeserving because their homelessness is a consequence of them not engaging with the labour market (Parsell 2012). Some scholars, like Gowan (2010) also link these concepts to societal beliefs around self-interest and meritocracy, therefore homelessness is a fair consequence of the failure of the individual. For Gowan (2010), sin talk can be observed at various scales and geography, but at its core, sin talk arises from the differentiation between the deserving and the undeserving poor.

. Discourses surrounding the 'undeserving poor' can be connected to examples provided by Johnsen et al. (2008). The study highlights benefit sanctions as a particularly extreme demonstration of coercion within the typology of social control. They further illustrate this discourse for homeless individuals, describing examples of initiatives such as 'No Second Night Out' which can lead to exclusion from statutory services if people do not adhere. However, the overarching concept of coercion can also be seen within sick talk in Gowan (2010), where her participants were excluded from services due to refusals to adhere to behavioural rules, often related to substances, alcohol or participation in certain therapeutic groups.

Gowan (2010) argues that sin talk is much less prevalent in social policy narratives as it has been replaced by sick talk, but that the underlying logic of sin talk, for both people experiencing homelessness and those that work in the homelessness archipelago, has never gone away. She asserts that this can be observed in her ethnography through the words and actions of participants, and her analysis of policy. Sin talk is primarily examined in Chapter 7. For Gowan (2010), contemporary sin talk is linked to a conflict between the needs of street dwelling homeless people to live their lives in public spaces and the perception of this as ugly and disorderly, she calls this the aestheticization of public space. Gowan (2010, pp. 55) identifies the policy and legislation that emerged to exclude people experiencing homelessness arguing that 'in general the poor were increasingly treated as external threats to the social body rather than community members in need of help or integration'. She argues that this is in line with broader changes in discourses on policy that were punitive and included criminal sanctions. An example used by Gowan (2010) is the 'broken window' thesis that first emerged in New York. In her explanation of 'contemporary sin talk' she draws particularly on concepts common to revanchism literature. Revanchism can be defined around the idea of a 'meaner' city, which is less tolerant of visible difference, particularly focused on racial minorities and the visibly poor. The use of the term revanchism arose out of the punitive urban environment observed by Smith (1996) in the 1990s in New York city and was quickly taken up in urban geography as a framework where critiques of the aggressive treatment of visible minorities in the city could coalesce. The literature examines anti-homelessness laws and policing in public space in the US, however more recent analysis tends to suggest that revanchism is more complex, with some suggesting 'post-revanchism' is more accurate and others finding evidence of both revanchist ideals and supportive and emancipatory approaches (DeVerteuil 2019). A fuller discussion of these ideas follows in the literature review.

Within Gowan's (2010) empirical analysis sin talk is explored through the interactions with homeless men who draw on the narratives of 'street' vs 'straight' to explain their moves into homelessness; where 'street' is criminal and 'straight' is law-abiding. Her analysis here draws on another idea in homelessness scholarship: stigma. Stigma is defined as a deviance or rejection of the norms, values, and institutions of mainstream society. Stigma, as conceptualized by Goffman (1956), refers to the social

identities defined by negative stereotypes. In such cases, individuals may develop 'spoiled identities,' leading to their exclusion and rejection by society. This creates a division between 'us,' representing the acceptable and normal, and 'them,' those deemed as 'other' for failing to conform to narrow societal standards. Gowan (2010) similarly describes her research participants' mundane realities at the edges of acceptable 'straight' society.

The police feature in the lives of Gowan's (2010) research participants as a constant malevolent presence, seeking to criminalise their day-to-day lives and informing their sense of self as unwanted and unwelcome outsiders. Sin talk is not only identified through the homeless men's constructions of the issue, but Gowan (2010) also identifies sin talk in the management of homelessness by exploring the role the police play in picking up her participants for petty crime and drug dealing alongside the enforcement of homelessness clearance laws—the police feature as a key conduit in the cycle of homelessness and incarceration. For Gowan (2010) the police are only acting to deploy power by force, which is always characterised by sin talk, as the result on her participants is control or punishment.

The police have a unique role in the typology of social control, as they are the only actors delivering the force elements of the typology, although others may request or play in a role in delivering the interventions described by Johnsen et al. (2018) in Figure 1. The police are seen, as in the literature on power and control in society, as some of the only legitimate holders of this force. This means the police have a very distinct place in the homelessness archipelago. Despite this, the specific role of the police in managing homelessness is not often explored beyond their function as the enactment of state policies, particularly in urban geographical literature, aside from Stuart (2013). However, looking more broadly at the role of the police, it has tended to be cast as part of the social contract, where citizens give up rights to violence to the state in exchange for protection from violence (Fyfe 1991). The police are the holders of the state's right to commit violence on behalf of society, a coercive force within a state's territory (Fyfe 1991). This Hobbesian pact has been recast somewhat in current thinking as policing by consent. However, the police are an organisation set up to support the violence and surveillant power of the state (Fyfe 1991). The principles remain that police perform state-sanctioned violence where it is necessary to maintain public order (Fleetwood and Lea 2022). The police are perceived to be actors whose

primary function is social control and the territorial enactment of state power, not a caring institution (Bloch 2021).

However, evidence on the role of the police in relation to rough sleepers places them across the typology of social control. The police are known to use all the forms of power outlined by Johnsen et al. (2018) and within the UK there are parts of the police focusing specifically on the 'softer' side of power, community engagement and relationship development, where people experiencing homelessness might be requested to change their behaviour. Stuart (2013) explores the views of the police on skid row in LA, finding that they firmly place themselves in recovery management or within sick talk, where they use coercion or force in the typology developed by Johnsen et al. (2018).

Chapter 7 will situate the findings from empirical analysis of the police data within this broader landscape of homelessness, to explore the role that the police might be playing in homelessness in Wales. It will primarily explore these through sin talk and considering the role of social control.

System talk is a discourse that moves away from personal behaviour and instead focuses on the failures in the 'systems' which contribute to homelessness. For Gowan (2010) it means that homelessness is the result of economic inequality, this is specifically seen as injustice. System talk does not seek social control or focus on the behaviour of people experiencing homelessness. It is arguable whether it should be within the typology of social control, as Johnsen et al. (2018) suggest that the services they characterize as tolerant, may still wish for change in people experiencing homelessness. Instead, system talk for Gowan (2010) moves the focus away from, in the language of homelessness causation, individual factors to structural factors. System talk therefore suggests that the response to homelessness should be based on housing or a change to social policy that redistributes resources rather than any form of control.

In this thesis, Chapter 5 will focus on data taken from the homelessness system itself. This could be seen as part of system talk as it is the way in which social welfare systems in the UK offer housing. It is this system which is said to have failed the participants in Gowan's (2010) research. Therefore, system talk will also be explored through each of the analysis chapters, as a lens on the way that the whole of the

homelessness archipelago explored in this thesis is functioning as a system with broader social welfare policy implications.

2.1 CHAPTER CONCLUSION

This Chapter has set out the theoretical framework for this thesis. This thesis has taken Gowan's (2010) talks: sick talk, sin talk, and system talk and developed them to fit the contexts within which homelessness sits in Wales. This Chapter has also sought to add to these talks by considering Johnson et al.'s (2018) social control of people experiencing homelessness, exploring the links between different forms of social control and the talks, showing the complexity of their interaction. It is this framework that will be applied to the thesis.

3 Literature Review

3.1 INTRODUCTION

This chapter will explore the existing literature connected to the themes of the three talks: sick talk, sin talk and system talk. Firstly, a definition of homelessness – the ETHOS typology – is selected, which is clear and internationally recognised. ETHOS defines homelessness in relation to the home, outlining the differing degrees to which people are housed appropriately. The ETHOS typology is explored, as it will be used throughout the thesis to explain homelessness, defining some aspects of the typology further to provide contextual information when health and criminal justice interactions are considered. But it is not just the type of homeless experience that matters; the literature review also examines personal and household characteristics, particularly focussing on those that are available in datasets used for later analysis (See Section 4.3). The second section of the literature review outlines the homelessness archipelago, defined in this thesis as the statutory homelessness system, the health system, and the criminal justice system. Within this, it will examine how the existing evidence suggests people experiencing homelessness have poorer health, more emergency healthcare interactions, are more likely to be the victims of crime and the bi-directional association between imprisonment and homelessness. The literature review will demonstrate how most of the significant evidence on health interactions, and the evidence on criminal justice involvement, is dominated by studies whose participants are shelterless, rough sleeping, or in low threshold services known to be used mainly by more excluded people experiencing homelessness. There is little evidence across the homelessness archipelago on the interactions with people experiencing other forms of homelessness.

3.2 A DEFINITION OF HOMELESSNESS: THE ETHOS TYPOLOGY

Much has been written to try and neatly define homelessness, yet within the literature there is still widespread debate (Somerville 1990; Jacobs et al. 1999; Tipple and Speak 2005; Tipple and Speak 2006) - homelessness is a multifaceted concept that can be defined in multiple ways. This literature review will focus on just three: homelessness in relation to causation, people's living situations and some personal and household characteristics. Each of these can interplay with Gowan's (2010) lenses and change how homelessness is understood and responded to.

It is important to have a clear definition of homelessness to use in academia and practice to enable clarity. This section will introduce the ETHOS typology, which defines homelessness in relation to the home, outlining the differing degrees to which people are housed appropriately.

As demonstrated by the very word itself, homelessness is usually defined in relation to 'home' rather than housing. Therefore, it is worth briefly noting some of the features of the meaning of home. Home is a highly contested and emotive topic, which will inform the later discussions about the stigmatising impacts of not having a home and the conceptual linkages between home and gender (Parsell 2012). The meaning of home is usually seen as encompassing the social, psychological, material and emotional and is, therefore, a highly subjective topic (Tomas and Dittmar 1995; Mallett 2004). It is seen as a marker of normality, control and a place of family (Tomas and Dittmar 1995; Wardhaugh 1999). Parsell (2012) argues that this is the opposite of how shelter-less people view their current situation. The literature points to the centrality of home in our understanding of our daily lives, and this lack of home is a factor in the negative experiences and perceptions of homelessness.

The ETHOS typology conceptualises homelessness as a continuum – from rough sleeping to insecure accommodation (Edgar and Meert 2005; Busch-Geertsema 2010) – see Table 2. The two extremes of the typology span from rooflessness to inadequate housing. It is beneficial for the global discussion and measurement of homelessness to have a systematic typology that is comparable across national boundaries. Moreover, it is vital to have a solid definition of homelessness to evaluate policy and progress (Busch-Geertsema et al. 2016). Therefore, in gaining widespread

support, the ETHOS typology facilitates a common language and framework with which to understand homelessness.

Table 2: ETHOS typology of homelessness adapted from Edgar and Meert (2005)

Category	Living situation
Roofless	Sleeping rough
	Night shelter
Houseless	Accommodation for homelessness (including temporary accommodation)
	Women's shelters
	Released from institutions (prison and hospital) who are at risk of homelessness due to support needs and people who are unable to move on from institutions due to lack of suitable move on housing)
	Receiving support (due to homelessness i.e., in supported accommodation, including those unable to move on from supported housing due to lack of suitable)
Insecure	Insecure accommodation (squatting, illegal camping, sofa surfing or sleeping on floors, staying with friends or relatives)
	Under threat of eviction
	Under threat of violence
Inadequate	Living in temporary / non-standard structures
	Unfit housing
	Extreme overcrowding

The ETHOS continuum begins with 'rooflessness', defined as 'sleeping rough', or in a 'night shelter'. Sleeping rough is a person sleeping outdoors or in a temporary shelter in a public space, or a private space where they have no lawful right to abide (Waldron 1991). Night shelters only provide very short-term accommodation, usually just a single night and offer little security or space to secure belongings. Night shelter provision is also extremely varied. Rooflessness involves physical, legal and social exclusion and there is no privately safe space for social relations (Busch-Geertsema and Sahlin 2007).

The next point on the continuum to be defined is houseless, focusing specifically on hostel and shelter-type provision. While shelters and hostels are ubiquitous features of homelessness assistance, they refer to many services encompassing multiple forms of short-term accommodation. The term hostel can refer to large 'warehouses' for serving a diverse group and smaller sites catering to specific needs, such as those fleeing domestic violence (Neale and Stevenson 2015). Multiple organisations can run hostels, often the third sector or faith-based groups. Busch-Geertsma and Sahlin (2007) draw together commonalities across the sector, arguing that hostels are characterised by communal living and shared spaces, a lack of privacy, staff supervision and no tenancy agreement meaning that the accommodation is temporary, and no court action is needed for an eviction. Often these types of accommodation exist as part of a staircase system or continuum of care, whereby people experiencing homelessness must meet various targets and abide by certain rules to be allowed to live in more desirable accommodation (Padgett et al. 2011). Hostels will also serve particular groups, such as young people or women, drug users or wet and dry hostels (Busch-Geertsema and Sahlin 2007).

There are two main overarching critiques of hostel provision; that they are total institutions and that their communal nature causes many stresses. Goffman's (1961) work on total institutions mainly described the social world of the asylum and outlined the main features of a total institution as a place where the residents are cut off from the wider world and rely entirely on the whims of staff. He argues that total institutions break down and remake people, institutionalising them (ibid). Building on the work of Goffman (1961), hostels have been conceptualised as total institutions in empirical research. For instance, Mayock et al. (2013) found that service users became acculturated to hostel life and that this was partly due to the rules and regulations. The rules and regulations intrinsic to hostels have led to several writers considering shelters as spaces of control (Lyon-Callo 2000; DeVerteuil 2006). The spaces of control often have an ideological origin, as hostels can be embedded in a system of sanctions if they are part of a continuum of care model. Busch-Geertsema and Sahlin (2007) argue that the control and regulation in hostels make service users reliant on the institution, as living in a hostel with many rules does not facilitate independent living as it requires a very different set of skills. The other main difficulty with hostel accommodation is the communal living arrangements. These communal living

arrangements have been found to be sources of fear for hostel residents, with research stating that some people prefer to sleep on the street, perceiving it as safer (Newburn and Rock 2006; Warnes and Crane 2006). Neale and Stevenson (2015) similarly found that having to share spaces in a hostel setting created many stresses and tensions, which meant that people were reluctant to use communal facilities due to these fears.

ETHOS refers to insecure and inadequate housing, these forms of homelessness are less visible and often referred to together as 'hidden homelessness' (Deleu et al. 2023). Hidden homelessness has several different interpretations that include: non-statutory homelessness, those not using services, those missing from counts and sofa surfing (Deleu et al. 2023). The key intersecting feature across these uses of the term is that most hidden homeless people will not feature in research or statistics which focus on traditional homelessness spaces or services. However, people experiencing homelessness can move from hidden homelessness to houseless or roofless and back again, see, for instance, Mayock and Parker (2020). There is limited evidence on the characteristic of hidden homeless people, although it has been associated with women's homelessness and men's homelessness in different studies (Bretherton 2017; Deleu et al. 2023).

There are some critiques of the ETHOS typology; firstly, that it adopts an unreflective realist stance. A realist approach to research asserts that the world exists beyond our understanding of it (Somerville and Bengtsson 2002). However, what is missing from a realist approach is a consideration of how forces such as the media and politics can create and transform knowledges. For instance, Cronley (2010) traces how the changing narrative around homelessness in the UK has resulted in different policy approaches and, consequentially, a change in service delivery. A second, linked, critique, is that by placing homelessness into a typology, there are implications for who is entitled to homelessness support and who is researched. As stated by Tipple and Speak (2006), if homelessness categories are too broad, then those in greatest need will not be recognised. Typologies can often be used to decide who is allocated resources, as it is unfortunately necessary when managing scarce budgets to decide who is the 'neediest' (Busch-Geertsema et al. 2016). Depending on the definition used, this can include or exclude people due to differing agendas (Busch-Geertsema Volker et al. 2010). As Somerville (Somerville 2013, p.385) states, ideas of homelessness

'can take on a life of [their] own...in terms of legislation.' This point is key for two main reasons when considering definitions of homelessness; first, how homelessness is defined impacts its measurement. By deciding what homelessness 'is' we decide who and what is measured, which in turn impacts perceptions of the breadth and depth of the issue. When deciding who is in the greatest need, this means that certain groups' claims to resources eclipse others. If this decision is considered neutral, we can lose sight of the different forces that can drive policy-making.

An example of this can be seen in the empirical research conducted by Byrne and Culhane (2015), where through their testing of the change in definitions of chronic homelessness in the USA, they found that the numbers of people in the 'chronically homeless' category would be halved. As those who are chronically homeless received more resources and support, this meant those no longer 'chronically' homeless lost out. These individuals are some of the heaviest users of resources and are, therefore, often the focus of discussion about cost savings. By looking critically at the research by Byrne and Culhane (2015), we can see how changing a definition can be an ethical and political issue that goes beyond the empirical. Therefore, whilst it is practically useful to have a clearly defined typology of homelessness, at the same time, we must be mindful of the ways in which our knowledges are constructed and the impacts of applying these categories to people and the services that they rely on.

A further challenge in defining homelessness through the ETHOS typology, is the dynamic nature of homelessness. Literature suggests that homelessness is often a temporary state in an individual's life (Culhane et al. 2007; Jones and Pleace 2010; Mayock et al. 2015). For instance, Mayock et al. (2013) characterise homelessness as a period of residential instability, finding that within their longitudinal sample of homeless young people, roughly half were housed several years later. Understanding homelessness needs to consider the movement in and out of homelessness for many people, and any definition of homelessness based on a person's accommodation status cannot account for this. Some scholars draw on the pathways approach to understanding homelessness to account for this temporality. A housing pathway, whilst not being a way of defining homelessness, instead is a 'patterns of interaction (practices) concerning house and home, over time and space' (Clapham 2002, p.63). As homelessness research clearly identifies the heterogeneity of experiences and needs, the pathways approach brings together individual perceptions and meanings

while allowing for appropriate comparisons (Clapham et al. 2014). For example, utilising the pathways approach, Chamberlain and Johnson (2011) document 'ideal type' homelessness pathways to reflect the movement of different individuals in to and out of homelessness. They argue that it is necessary to use the metaphor of a 'pathway' in order to include both structural and individual factors impacting a movement through homelessness without characterising homelessness as inevitable and a downward spiral. The pathways approach has been developed within housing studies to take account of the nonlinear pathways resulting from both constraints, lack of capital and strategic navigation of housing fields (Hochstenbach and Boterman 2015). As the housing pathways approach arose through social constructionism, two key critiques can be levelled at it. Social constructionism, in housing studies, and more widely, has been found to overstate the role of the individual and their agency over structural factors and secondly, that in not subscribing to an objective reality, it does not allow for political or ethical claims (Jacobs and Manzi 2000; Fopp 2008; Cronley 2010). Nonetheless, despite these critiques, the pathways approach is one of the few to present a conceptually strong view of homelessness that considers the inherent temporality.

This thesis will utilise the ETHOS typology to define homelessness. Its strong conceptual foundation, international consensus, and clear links to practical data collection make it the most suitable framework for this research. By providing a comprehensive view of homelessness, it ensures that not only its most visible manifestations are considered but also less apparent forms. This definition of homelessness differs from statutory definitions in the UK, as it adopts a broader perspective. Edgar and Meert (2005) argue that taking a broad conceptual approach is stronger, given the influence of social constructions, particularly in governmental statistics, on perceptions of homelessness. A broader definition provides greater consistency and is less susceptible to shifts in institutional priorities, which can affect statutory classifications of homelessness (Edgar and Meert, 2005). A definition of homelessness must be both conceptually robust and operationally viable.

Any definition used for data collection inevitably faces challenges, particularly in accounting for critiques rooted in the social construction of homelessness and its temporal nature. These limitations will be examined in later analysis chapters. Additional challenges arise in the definition of homelessness when relying on

administrative data, as such data is inherently shaped by social constructions (Thomas and Tweed, 2018). Subsequent chapters will examine the application of the ETHOS typology as an ideal framework for conceptualising homelessness, alongside the complexities and practical difficulties of implementing it within a dataset originally collected for alternative purposes.

3.2.1 Personal and household characteristics

The ETHOS definition describes a continuum of homelessness. However, homelessness also differs according to personal and household characteristics. Often literature will just focus on these characteristics individually. For example, there are broad evidence bases focusing on: sexuality (Page 2017), gender identity (Spicer 2010; Yu 2010), disability (Mercier and Picard 2011), age (Mayock et al. 2013) and others. This literature review focusses on a limited list of characteristics: women and men's homelessness, ethnic minority homelessness, family homelessness, single or lone household homelessness, and lastly, multiple-exclusion homelessness. These characteristics were selected for review because they are some of the most central when looking at homelessness, but also pragmatically because they are the only characteristics available within the administrative datasets used in the analysis described in section 4.3.

As this section will discuss the personal characteristics of people experiencing homelessness, it is important first to consider the role of intersectionality in these characteristics. Geographical research on homelessness, which takes an explicitly intersectional view, is limited (Klodawsky 2006). Much of the scholarship focuses on groups such as women, young people, or those with mental health issues; few studies focus on the overlap between these categories of difference and discrimination. Research which does take an intersectional approach to studying homelessness indicates that multiple intersecting identities can all play a role in increasing the disadvantage suffered by individuals, particularly those from ethnic minority backgrounds (Greene et al. 2013; David et al. 2015; Mizock and Russinova 2015; Gonyea and Melekis 2017). For instance, Greene et al. (2013) found that Human Immunodeficiency Syndrome (HIV)-positive mothers from African and Caribbean communities in Canada, who were homeless did not have services which adequately served them. Without recognising the diversity of experiences and sites of

discrimination suffered by those using homelessness services, they will be ineffective (Whitzman 2006).

This is a limitation in the evidence base. Intersectionality arose from gender studies and a recognition of the limitations of viewing gender as a sole source of discrimination and damaging power relations (Valentine 2007). It is a conceptual tool which draws our attention to the impacts of belonging to multiple stigmatised categories. Stigma is a concept developed by Goffman (1956), who emphasised how we all have social identities, some of which can be based on negative stereotypes. When this is the case, Goffman (1956) argues that some people then have 'spoiled identities'. These people are then excluded and rejected from the wider community. It is often said that stigmatisation creates an 'us' vs 'them' binary whereby we are good and normal, and those who do not fit within a relatively narrow set of circumstances are 'othered'.

Many aspects of homelessness have been understood through the lens of stigma (Rayburn and Guittar 2013). Takahashi (1997) writes that homelessness has become a shorthand for those perceived as threatening and non-productive, whilst Hopper (2003) states that homelessness is a social label for all that is negative and disordered in society. It is key to the idea of intersectionality that layers of discrimination do not simply multiply each other; instead, they 'abrade, inflame, amplify, twist, negate, dampen and complicate each other' (Valentine 2007 p.13). If we assume that a homeless person is simply suffering from the same disadvantage as a 'neutral' person but without a home, we fail to grasp the interaction of different categories of inequality. As stated by Cho et al. (2013, p.787), 'single-axis thinking undermines legal thinking, disciplinary knowledge production, and struggles for social justice'. The concept of intersectionality is a key tool with which to consider the personal characteristics associated with homelessness to avoid this single axis thinking.

3.2.1.1 Gender and homelessness

Family homelessness, or more precisely, female-headed household family homelessness, has historically been the focus of the statutory system in the UK. This section will discuss family homelessness to differentiate it from lone women's homelessness. However, a majority of family homelessness is women's homelessness too. This thesis follows feminist thought on why family homelessness is equal to women's homelessness because of societal gender inequality. This thesis

cannot do justice to this topic within the space available, but in short, inequality in socioeconomic structures, housing security and patriarchal attitudes toward societal gender roles all contribute to the gendered differences in homelessness. Homelessness is steeped in gender binaries, that women are naturally placed in the home with men in public spaces and that women failing to fit within these normative categorisations are deviant (Bretherton 2017; Reeve 2018).

Within feminist work, intersectionality has long been used as a tool to focus on multiple categories of discrimination (Cho et al. 2013). Key findings to emerge from this body of literature are the gendered nature of assumptions about people experiencing homelessness. Men and women are differently visible in homelessness research, which has implications for creating effective homelessness services (Klodawsky 2006). For example, due to the perceived invisibility of women, many shelters are set up to mainly serve men - reinforcing women's invisibility due to a lack of appropriate provision (Bowpitt et al. 2011). Whilst this body of work takes gender as the key site of discrimination, without using the lens of intersectionality, responses to homelessness will be one-sided and fail to appreciate the full spectrum of marginalisation experienced by many of those experiencing homelessness.

In housing law in the UK, family homelessness is defined as a household with dependent children. These households tend to be female-headed and have historically had greater statutory entitlements to housing support in the UK and therefore made up the majority of statutory homelessness applications. The Housing Acts 1977, 1985 and 1996 have all had provisions for family homelessness (Reeve 2018). The way that women's homelessness is treated under the law means that family homelessness has historically had higher quality quantitative data due to the official statistics associated with these systems, although with changes to homelessness law across the nations this is no longer the case. Despite the centrality of family homelessness in the statutory system in the UK it is not often at the forefront of thought when considering homelessness. Family homelessness in the UK fits within the ETHOS typology as families can be placed in or required to remain in insecure, overcrowded, or unsafe housing while passing through the statutory homelessness system. This is because, across the UK, emergency or hostel-type accommodation is routinely used to place families due to a lack of settled accommodation. There, are generally seen to be lower rates of mental illness and addiction co-occurring with family homelessness; however,

there is little evidence of the health interactions for female-headed homeless households nor interactions with criminal justice services outside of the known link between homelessness and violence. There have been few studies to demonstrate quantitatively, with non-survey-based data, the extent to which these households interact with the police.

3.2.1.2 Single or lone homelessness

Other forms of homelessness are contrasted with family homelessness; lone homelessness is named in opposition to family homelessness. Lone homelessness tends to be associated with men without dependants, often sleeping rough or using hostel-type services (Reeve 2011). Within Wales, until the Housing Act (Wales) 2014, most single person experiencing homelessness were not entitled to meaningful statutory support under homelessness legislation and were known to be discouraged from seeking support (Mackie 2014). Lone or single homelessness is often the dominant view of homelessness and the focus of much of the evidence on health and interactions with the criminal justice system, as will be explored in later sections. Evidence suggests that lone homelessness is also associated with periods of hidden homelessness and rough sleeping (Deleu et al. 2023), although this is not the dominant image. Evidence in the UK also suggests that whilst lone homelessness was predominantly White, male, and middle-aged, this is no longer the case (Jones and Pleace 2010). In London particularly, lone homelessness is associated with migration, some of whom are from ethnic minority backgrounds (Pleace 2010). Moreover, there is a growing literature focusing on the experiences of lone homeless women; overall this suggests women are more likely to be hidden homeless, although there is some evidence on the experiences of street-based homeless women which challenges the view of the rough sleeping as solely male (Reeve 2018).

The concept of multiple exclusion homelessness (MEH) has been developed to recognise a particularly vulnerable sub-group of lone or single homelessness people who suffer complex and severe disadvantage. Fitzpatrick et al. (2011) characterise the MEH group as suffering from mental health difficulties and having histories of long-term marginalisation and childhood trauma. There is a large body of research that clearly outlines the extent to which childhood trauma impacts many people experiencing homelessness (Fitzpatrick et al. 2012; Nordentoft and Wandall-Holm 2003; Luchenski et al. 2017). Adverse childhood experiences (ACEs) are defined as

all forms of abuse, neglect and household dysfunction and are highly associated with adult homelessness (Woodhall-Melnik et al. 2018). The growing awareness of ACEs within homelessness practice suggests that homelessness must be understood as more than a lack of secure housing; rather is linked to deep inequality (Bowen and Murshid 2016).

Bowpit et al. (2011) concur with this finding, indicating that the lives of those experiencing MEH were characterised by social disadvantage, violence, and trauma. This is echoed by Fitzpatrick et al. (2011), who find that problematic drug and alcohol misuse, institutionalisation in either care or the criminal justice systems and begging and street drinking all played a role in the lives of many of those in the MEH group in their study. They also found that homelessness was a key intersecting marker of extreme disadvantage (Fitzpatrick et al. 2011). MEH research connects homelessness with wider social exclusion, 'resulting in severe negative consequences for [their] quality of life, well-being, and future life chances' (Levitas et al. 2007 p.9). The literature on MEH demonstrates the often complex and messy difficulties experienced by person experiencing homelessness, where problems often span multiple services and require varied interventions (Manthorpe et al. 2015; Dwyer and Somerville 2011).

However, the evidence on the extent of MEH homelessness in the UK is undeveloped in the evidence base. With only two quantitative studies, both based on survey data (see England et al (2022) and Fitzpatrick et al. 2011)). This has contributed to a lack of clarity on who is in the MEH group; some evidence suggests that people in the MEH group are generally white men, aged between 25 to 44, with contact with at least two of homelessness, problematic drug and alcohol misuse and criminal justice systems (Bramley et al. 2015)—however, more recent evidence from England et al. (2022) finds that sampling strategies and study aims have significant implications for the results of the studies. They identify high, intermediate and low adversity groups, finding just one group was focused around complex and protracted mental ill health and high rates of offending, incarceration and/or high rates of risky drug and alcohol misuse and the most common grouping was those with low adversity (England et al. 2022).

3.2.1.3 Ethnicity and homelessness

The final, personal characteristic to be discussed is ethnicity, although ethnic minority communities are not homogenous. Literature in the UK on the homeless of ethnic minority people experiencing homelessness is not well developed aside from secondary statistical analysis by Bramley et al. (2022) and evidence from Netto (2006) demonstrates the differing homelessness trajectories faced by some ethnic minority communities. Where the evidence does exist, it suggests Indian people are unlikely to experience homelessness, and people with a Black African or Caribbean background are disproportionately likely to experience homelessness (Bramley et al. 2022). Evidence from the third sector in Wales suggests that some ethnic minority households may be at higher risk of homelessness due to discrimination across housing, health and employment sectors (Campbell 2014). There is also a link between migrant homelessness and ethnicity, although migrant homelessness is an ideologically and politically inflamed topic. This is partly because the UK does not routinely offer services to homeless economic migrants and tries to repatriate them, whilst the asylum system offers extremely basic support and excludes people from much of society, not only social welfare benefits, both of which have implications for homelessness. Those who have irregular migration status and are experiencing homelessness are likely to be doubly excluded due to the intersection of racism, immigration systems and the social welfare system. For example, Pleace (2010) reports that there is some evidence that low-threshold homelessness services try to avoid undocumented migrants because of the political stance of the government, which has implications for funding.

3.3 THE HOMELESSNESS ARCHIPELAGO

This section considers each part of the homelessness archipelago associated with each of Gowan's (2010) three talks: system talk and the statutory homelessness system, sick talk, and the literature on the health of those experiencing homelessness, and lastly sin talk, considering the evidence on the criminal justice interactions of people experiencing homelessness. For Gowan (2010) the homelessness archipelago is the isolated spaces that her participants moved between; the concept shows the social and geographical marginality they faced. For this thesis the metaphor has been developed to encompass the three services people experiencing homelessness moved between. There are multiple possible public services that might be explored,

but the focus here will be: statutory homelessness services, the police and emergency healthcare, because these align with the prevailing sin and sick talk described by Gowan (2010). These are the datasets that will be drawn on in the later empirical chapters.

First, to provide context for later considerations of the homelessness, this section will briefly give an overview of the homelessness system in the UK and some of the strengths and challenges. These have implications for how administrative data on homelessness is collected.

Homelessness systems in the UK are based on rights-based systems. There is an important distinction to be made between programmatic and legal rights to housing for people experiencing homelessness (Fitzpatrick et al. 2014). Programmatic rights, sometimes referred to as aspirational rights, are in contrast with legal rights, which are legally enforceable in domestic courts (Fitzpatrick and Watts 2010). This section will focus on legal rights as these form the basis of responses to homelessness across the UK nations. Research into homelessness systems based on legal rights has found that they have numerous benefits. Rights-based systems of homelessness assistance have seen widespread support both in literature and practice (Fitzpatrick and Watts 2010; Anderson and Serpa 2013). Rights can help to challenge entrenched hierarchies of power, particularly those faced by people experiencing homelessness, who are often left powerless (Fitzpatrick et al. 2014). By holding housing rights, people experiencing homelessness are put on an equal footing with service providers. This should mean that homelessness support and entitlement is not discretionary. Research indicates that when housing support for people experiencing homelessness is offered on a discretionary basis, it damages the self-respect of service users (Watts 2014). Moreover, Loison-Leruste and Quilgars (2009) find that rights-based homelessness systems mean that the most marginalised households take priority.

The UK is one of the very few places where legally enforceable rights exist (Fitzpatrick et al. 2014). However, the exact approaches differ across England, Northern Ireland, Scotland, and Wales. Services in Wales and England focus on preventing homelessness, whilst Scotland offers universal access to accommodation. When looking specifically at the rights-based systems in the UK, enforceable homelessness rights in England have been found to be both; effective in remedying the housing crises

of those who are unable to find alternative accommodation, as well as improving the quality of life for households who have received assistance (Fitzpatrick and Pleace 2012). Whilst in Scotland, Watts (2014) found that the creation of housing rights meant that those experiencing homelessness felt less stigma and ensured their claims to housing assistance appeared more legitimate. The system in Wales has also been found to effectively prevent homelessness for many service users (Mackie, et al. 2017).

However, creating more extensive homelessness rights in the UK has led to difficulties in their implementation. For instance, granting homelessness rights to all at risk of homelessness in Scotland has been problematic. This is due to the increased demand for accommodation, and the result has been households living in housing which should be temporary (Anderson and Serpa 2013). Moreover, in England, certain categories of people can be excluded from social housing assistance, such as asylum seekers and those with histories of anti-social behaviour (Dean, 2015). Similarly, in Wales, whilst prevention services should, in principle, be for all at risk of homelessness single people can receive poorer services (Mackie et al. 2017). Therefore, whilst certain homelessness rights can be claimed in the UK, they are often delivered selectively, and it is a misnomer to state that they are universal (Dean, 2015).

Evidence on the selectivity, differential outcomes and discretion that exists in the statutory homelessness system are important context when considering the ways the administrative data are collected in later sections. This is because the data is used by the frontline organisations themselves, therefore the data is likely to be influenced by the practices within the organisations. The delivery of homelessness rights in the UK has been found to suffer from a lack of coherence. Frontline workers have discretion in implementing a policy which can lead to differential outcomes according to personal preferences, prejudices, and severe resource constraints (Hunter 2016, Alden 2015). Evidence suggests that frontline workers in local authority homelessness services sometimes practice unlawful discretion, choosing when to grant certain rights (Alden 2015). Rights-based systems can create significant welfare bureaucracies that require resources to navigate effectively and can both grant rights whilst disempowering service users (Browne Gott et al. 2021). They can act to disempower people experiencing homelessness, enforcing passivity. However, other evidence shows that

those working in statutory homelessness services can act in supportive ways, ensuring clients can access the support that they need (Francis 2000, Browne Gott et al. 2021).

3.4 HEALTH AND HOMELESSNESS

The concept of sick talk indicates the linkages made between poor health, particularly risky drug and alcohol misuse and mental ill health. Often, 'the link between homelessness and poor health has been generally assumed to be bi-directional: sick people become homeless, and homelessness makes people sick' (Hwang 2001). This section will focus on this part of the homelessness archipelago, considering health and homelessness and how these can change as people experiencing homelessness move through the archipelago. It will explore the substantial evidence base on this, exploring where there is strong evidence for a relationship and where sick talk has infiltrated the evidence base, skewing perceptions of all types of homelessness and overstating the 'sickness' of people experiencing homelessness.

Strong evidence from the United States (US) and Sweden shows that the health outcomes for both family and single homeless people in shelters are far worse than the general population and, importantly, worse than other low-income groups (Lebrun-Harris et al. 2013; Kerker et al. 2011; Sun et al. 2012). This suggests that there are certain factors associated with homelessness which are damaging to people's health beyond their low-income status. Homelessness people who are shelterless or residing in hostels in the US or Denmark also have a far higher risk of mortality than housed people, again demonstrating health inequalities (Teruya et al. 2010; Nielsen et al. 2011; Ku et al. 2010). The specific health difficulties associated with houseless homelessness in the US include both infectious and cardiovascular diseases (Schanzer et al. 2007). The literature points to higher rates of cardiovascular disease amongst the homeless population (Schanzer et al. 2007), whilst the most prevalent diseases within the homeless population are; tuberculosis, hepatitis C and HIV (Beijer et al. 2012; Fazel et al. 2015). Meta reviews of the evidence suggest a range of infection rates due to differing geographic locations and definitions of homelessness; however, people experiencing homelessness always have far higher rates of disease than those who are housed (Beijer et al. 2012; Fazel et al. 2015). There is also little evidence for other forms of homelessness that could be identified.

There is a need to look at the health of people experiencing homelessness alongside control groups which matched as closely as possible to avoid overstating the existence of poor mental and physical health. It is worth briefly considering the concept of 'success' in a homelessness intervention as an example. Much of the research on homelessness interventions will measure a variable at the start, such as mental health or drug use, and then report any change at the end. This is premised on the idea that changing these issues at the end of an intervention is possible. However, poor mental and physical health exists in the housed population. In particular, lower income groups have worse health, and it is recognised that health inequalities have many complex causes which are often broadly attributed to poverty (Dunn 2000; Hodgetts et al. 2007). It may therefore be problematic to assume that by housing people experiencing homelessness they will suddenly demonstrate improved health outcomes (Lamanna et al. 2017; Poremski et al. 2016).

Many studies focus specifically on people experiencing homelessness residing in hostels, a type of temporary accommodation. The health of hostel residents is far worse than the general population (Hwang 2000; Nordentoft and Wandall-Holm 2003). This is attributed to both health risks in hostels, such as; the ease with which communicable diseases can spread, widespread substance misuse and the pressures of the environment on mental health (Mackie and Johnsen, et al. 2017). This was particularly problematic during the COVID-19 pandemic where high rates of infection were seen in some cases due to overcrowded conditions (Levesque et al. 2022). However, as Mackie and Johnsen et al. (2017) state, hostels can protect service users from some of the health risks of rough sleeping. In addition, the health of those in hostels is also seen to be poor due to pre-existing health conditions within the populations, meaning the causal relationship is unclear.

3.4.1 Mental health diagnoses and problematic drug and alcohol use

Both mental health diagnoses and substance misuse issues are often associated with rough sleeping or shelter use. A large amount of literature focuses on the relationship between problematic drug and alcohol use, homelessness, and the accompanying health implications. Levels of problematic drug and alcohol use by rough sleepers is far higher than in the wider population (McVicar et al. 2015; Early 2005; Greene et al. 1997; Shinn et al. 1998; Kemp et al. 2006). However, in a large-scale study in Scotland focusing on statutory homelessness, not only rough sleepers, 49 per cent of the

homeless population had evidence of health issues relating to mental health, drugs, and alcohol (Waugh et al. 2018), which was more than in the low-income control group, where 26 per cent had evidence of the same issues (ibid). Whilst heavy drinking is associated with homelessness, in a study by McVicar et al. (2015) they found that risky alcohol use was only a risk factor for some types of homelessness.

The literature is divided on whether homelessness causes problematic alcohol or drug use (Shinn et al., 1998; Johnson and Chamberlain, 2008), alcohol or drug use causes homelessness (Allgood and Warren, 2003; Early, 2005) or both (Johnson et al. 1997). Neale (2001) states that the 'risk factors are strikingly similar, the relationship between these two problems is highly complex'. In particular, rough sleeping and shelter use is often associated with injection drug use (Aidala et al. 2005; Bourgois 1998; Briggs et al. 2009; Song et al. 2000; Linton et al. 2013). Moreover, injecting drug use is also linked with several other factors of extreme deprivation, including poverty, incarceration, and mental health issues (Aidala et al. 2005; Mizuno et al. 2009; Bohnert et al. 2009; Genberg et al. 2011; Mackesy-Amiti et al. 2012; Linton et al. 2013). Pluck et al. (2007) found that hostels can facilitate risky alcohol or drug use resulting in some avoiding hostels due to drug taking.

Mental health issues are also often associated with homelessness and robust quantitative studies from the USA and Denmark find that there was far higher prevalence of mental health issues in the shelterless homeless population compared with the general population (Schanzer et al. 2007; Nielsen et al. 2011; Fazel et al. 2008). In a Scottish data linkage study, 30 per cent of the homeless population had a mental health problem, without evidence of drug or alcohol-related issues (Waugh et al. 2018), whereas only 21 per cent of the low-income control group suffered solely from a mental health condition. The most common mental health difficulties reported in the literature are depression, anxiety, and addiction (Schanzer et al. 2007).

The co-occurrence of mental health issues and substance misuse is also well documented; this is often known as 'dual diagnoses'. In a recent data linkage project in Scotland: 19 per cent of the population in the study had substance-related interactions, with 94 per cent of these people experiencing mental health difficulties (Waugh et al. 2018). From the same research it was found that 6 per cent of the study population had evidence for mental health issues and problematic drug and alcohol

use, compared with only 1 per cent of the low-income control group. Moreover, for those who had been repeatedly homeless, 11.4 per cent had dual diagnoses. This group often reflects the previously discussed MEH, where there is a relatively small proportion of people experiencing homelessness that often have more complex health needs (Johnson and Chamberlain 2008; Mallett et al. 2005). Comparing men and women with 'dual diagnoses', residing in shelters or accessing meal programme in Canada, Chambers et al. (2013) women were more likely to have mental health issues, whereas men were more likely to struggle with problematic drug and alcohol use, compared with only 1 per cent of the low-income control group. Moreover, for those who had been repeatedly homeless, 11.4 per cent had dual diagnoses. This group often reflects the previously discussed MEH, where there is a relatively small proportion of people experiencing homelessness that often have more complex health needs (Johnson and Chamberlain 2008; Mallett et al. 2005). Comparing men and women with 'dual diagnoses', Chambers et al. (2013) found that women were more likely to have mental health issues, whereas men were more likely to be risky drug or alcohol users.

However, when considering the international evidence base, the comparability is limited because of differing welfare regimes having significant implications on homelessness. Welfare regime analysis is often based on the seminal work by Esping-Anderson (1990), where he describes the features of different welfare regimes and their approach to social problems. The welfare regimes identified are based on power structures and create the varied relationships between the state, markets, and family which in turn influence the distribution of welfare goods (O'Sullivan 2012). The importance of welfare regimes on responses to homelessness is reinforced by the quantitative work of Benjaminsen and Andrade (2015), who use cluster analysis on shelter users in the USA and Denmark. The results confirm that the extensive welfare state in Denmark means those using shelters are very different to the broad range of service users in the USA. They attribute this to the lower levels of income poverty and large social housing systems in Denmark (Benjaminsen and Andrade 2015).

Further, in their analysis of the impact of social welfare regime on the most marginalised people experiencing homelessness who would typically be 'hidden' from official statistics, Fitzpatrick and Stephens (2014) clearly demonstrate the impact of welfare regimes on the responses to various marginalised groups. In particular, taking

the case of a homeless prison leaver with a history of substance abuse, Fitzpatrick and Stephens (2014) draw out the differing responses between Sweden and the UK. They found that the solidaristic social democratic regime in Sweden meant that there was an exceptionally high level of personal responsibility placed on the homeless person. Theorising that this is a result of hugely robust welfare safety net in social democratic countries where those who are transgressive and excluded pay a much higher price due to the unusualness of their 'failure' (Fitzpatrick and Stephens 2014). Whereas, in the UK, due to the higher levels of marginalisation, fewer practitioners had a normative response to the homeless service users.

Very few of the studies focusing on the impact of housing interventions on health are from the UK (with the notable exception of Waugh et al. 2018). The geographies of homelessness are not homogenous (Deverteuil et al. 2009). Place is vital in understanding homelessness interventions. There are difficulties in comparing various research studies about homelessness and health, as who is 'homeless' in different studies can be dissimilar. For example, in Nielsen et al.'s (2011) research they analysed data taken from the Danish homeless shelter system over ten years. This will be a different group than many of the studies from the USA due to the differing welfare regime in place. This is reinforced by Fazel et al. (2015) who state in their meta-analysis on the health of people experiencing homelessness, that there is high heterogeneity in the studies in part to do with the different localities studied.

As there is a lack of largescale research on this topic in Wales, this points to the need for local analysis considering the complexity of local circumstances. Much of the evidence (aside from the work by Waugh et al. (2018) in this section refers to those who are shelter-less rather than the broader definition of homelessness used in ETHOS. Many of the studies contribute to the view of the single homeless rough sleeping man, which can be problematic and contribute to views of sick talk. This is a limitation of many of the studies into this topic and indicates a need for research which takes a wider definition of homelessness.

3.4.2 Service interactions and changes in healthcare use

There is strong evidence that people experiencing homelessness are frequent users of emergency departments and have higher rates of inpatient admissions than matched housed populations (Moore et al. 2007; Ku et al. 2010; Hwang et al. 2005).

Both Moore et al. (2007) and Hwang et al. (2013) find that people experiencing homelessness will tend to be high users of Accident and Emergency (A&E) services, with average use ranging from three to 12 visits per year. In a nationally representative survey, Ku et al. (2010) found that people experiencing homelessness were three times more likely to use emergency departments. In Scotland, the homeless cohort were responsible for 55 per cent of the A&E visits, whilst the number of visits from people experiencing homelessness were twice as high as the most deprived cohort control (Waugh et al. 2018). In Chamber et al.'s (2013) study drawing on shelters and meal programmes in Canada with a two to one ratio of single men to single women and families, there was a clustering of 'high level' A&E service users. These people accounted for 60.3 per cent of total emergency department visits, at an average of 12.1 visits per person. However, they only comprised 10 per cent of the total population (ibid). The risk factors for appearing in the high use group were being a problematic drug and alcohol user and/or having mental health issues. Chambers et al. (2013) also find that women are more likely to use the emergency department than men, reflecting a pattern found in the general population.

People experiencing homelessness often use A&E services differently than the housed population. For instance, those identified in New York hospital records as residing in a shelter, in Salit et al.'s (1998) study tended to stay in A&E an average of 4.1 days longer than their housed group and if people had mental health difficulties, this increased the length of their stay. People experiencing houseless and shelterless homelessness in the US, were also found to make more reoccurring visits in a short space of time than the housed population (Ku et al. 2010). For example, 13 per cent of the people experiencing homelessness in Ku et al.'s (2010) study were likely to have used the A&E in the last three days, while only 3.9 per cent of housed people had done so. A meta review identified that individuals who used emergency services more often were more likely to have worse physical health generally, as defined by having a higher burden of serious and complex health conditions (Fazel et al. 2015). This is similar to other large quantitative studies, albeit focusing on houseless homelessness, which indicate a strong association between poor health and emergency service use (Chambers et al. 2013). Ku et al. (2010) state that people experiencing homelessness using A&E were more likely to be older than non-homeless visitors. The main reasons for accessing emergency department services

by people who are homeless were reported to be; unintentional injuries, falls, cold, burns, poisoning, victimisation by assault and sexual assault, brain injuries, and self-harm (Salit et al. 1998; Ku et al. 2010).

Reflecting their different use of emergency services, people experiencing homelessness often have differing reasons for using A&E than other groups. Canavan et al. (2012) state that due to difficulties with registering with health services people experiencing homelessness will tend to try to access mental health care through A&E services, which can lead to inappropriate treatment and care. People experiencing homelessness have been found to have multiple barriers to accessing appropriate healthcare services (Crane et al. 2006). Some of the barriers are due to the negative attitudes towards people experiencing homelessness from frontline staff and inflexible services that are not set up in ways which facilitate engagement (Whitley 2013; Neale 2001). In addition, some homelessness people may face greater barriers. This is because they might have competing priorities of subsistence and chaotic lifestyles, it can often be difficult for people experiencing homelessness to attend appointments with healthcare professionals (Hwang 2001; Neale et al. 2008; Folsom et al. 2005). Being homelessness can therefore contribute to poorer health due to a lack of access to healthcare, which can be exacerbated for more vulnerable homeless people (Fitzpatrick-Lewis et al. 2011).

3.4.3 Spaces of care

Much of the quantitative literature on homelessness and health does not engage with the theoretical framing of these interactions. One way that geographical literature has started to conceptualise interactions between people experiencing homelessness and services is in the literature on spaces of care. Rather than emphasising the controlling nature of homelessness interventions, discussions of spaces of care focus on the potential for caring encounters in homelessness provision. This conceptual approach provides insight with which to understand people's movements through homeless services and the potential micro-interactions that may be occurring to impact their pathways between the different institutions of health, criminal justice, and housing.

Care is defined as 'the provision of practical or emotional support' (Milligan and Wiles 2010 p.737) and builds on the geographical work on spaces of care in other geographical literature, such as hospitals, asylums, and nurseries (Wolch and Philo

2000; Hanlon et al. 2017; Conradson 2003; Joseph et al. 2009). Milligan and Wiles (2010) argue that spaces of care can operate at multiple scales, macro governance and micro-interactions such as who is receiving and providing care, which can also display a geographical unevenness. Homelessness services can be thought of as spaces of care in a number of different ways; by providing physical care such as a warm environment or food, as places of security and stability and as places where therapeutic encounters can occur (Conradson 2003). This concept of supportive spaces is used by Parr (2000) who suggests that drop-in centres can be conceptualised as 'places of licence' where those who might otherwise be othered can be accepted. People are able to behave in a way usually perceived as unusual without being othered.

It is important to note that these spaces are not only spaces of control and often also feature elements of care, with Johnsen and Fitzpatrick (2010) dubbing these practices 'coercive care'. There is a well-developed literature on homelessness interventions as spaces which can feature elements of control (Marquardt 2016; Harding and Hartnett 2005; Watts et al. 2017). For instance, Daya and Wilkins (2013) discuss how the shelter residents in their research felt as though they were constantly under surveillance. Building on this literature, Johnsen et al. (2005) have utilised the concept of spaces of care to understand homeless drop-in centres. Johnsen et al. (2005) find that the homeless drop-in services act as spaces of care, providing physical resources such as warm showers and laundry. Moreover, providing these physical resources can also mitigate the stigma associated with homelessness. The space is also a space for refuge from danger for the service users. In focusing specifically on the practices in support services in the UK, Johnsen et al. (2018) and Parr (2000) find services which are ostensibly supportive, with low barriers to entry and provide care and compassion for those living on the street.

The research findings are nuanced, with the authors drawing attention to how day centres can also be spaces of control. Milligan and Wiles (2010) define care as a necessarily reciprocal activity which works across networks in both paternalistic and non-paternalistic ways. Spaces of care can also be spaces of control for two main reasons - the ideological stance of the service where they might aim to change service users' behaviour, or it can be because of safety issues for staff and service users. For instance, Johnsen et al. (2005) explore the ambiguities of the space of a day centre,

finding both care and the reproduction of stigma and control. This is echoed in research across homelessness services in Australia (Parsell et al. 2020) and the US (Hennigan and Speer 2019; DeVerteuil 2014).

3.5 THE CRIMINAL JUSTICE SYSTEM AND HOMELESSNESS

Gowan's (2010) sin talk is able to show the way that 'homeless' and 'criminal' are often interchangeable terms in popular thought. Sin talk can be observed throughout the evidence base, research on crime and homelessness often assumes that people experiencing homelessness are offenders (Kinsella 2012). Rough sleepers in particular are often associated with criminal activity (O'Sullivan 2012). However, whilst there is an observable relationship between leaving and entering prison and homelessness (Dyb 2009), people who are shelterless are also very likely to be the victims of crime (Newburn and Rock 2006). This section will focus on this part of the archipelago, exploring the strength of the evidence and particularly focusing on the many gaps in knowledge of how people experiencing homelessness interaction with the police.

3.5.1 Offending, incarceration, and homelessness

In terms of quantitative evidence on this theme, several robust studies from the USA demonstrate a clear relationship between single people who are rough sleeping, arrest, and imprisonment (Foster and Hagan 2007). Kinsella (2012) suggests that rather than attempting to simply divide the relationship between rough sleeping and crime into victims and perpetrators, it is easier to see it as a 'criminogenic situation'¹. In one study utilising matched administrative data, Metraux and Culhane (2006) found that of their population of those staying in shelters in New York, 23 per cent had been incarcerated in the previous two years. However, in Gonzales et al.'s (2017) study, 76 per cent of the sample had been arrested, whilst 57 per cent had been incarcerated more than three times prior to the research project. Gonzales et al. (2017) report that the types of crimes leading to imprisonment in their study were predominantly drug possession (35 per cent) and public disorderliness or drunkenness (28 per cent). Breaking the relationship down by gender, Weiser et al. (2009) find that during the

¹ A criminogenic situation refers to situational factors which place pressures on homelessness people and are seen as both; pushing people into crime and creating opportunities for it to happen (Mccarthy and Hagan 1991).

year before their study, 71 per cent of men and 21 per cent of women had been in jail. Not only has homelessness been associated with imprisonment, but research also demonstrates that single shelter-less adults are far more likely to return to prison than the housed population (Metraux and Culhane 2004). These findings are reflected in Gowan's (2002) ethnography in the USA, where she uncovered the erosion of social networks caused by imprisonment. The erosion of these social networks heavily contributed to the likelihood that people would be homeless on their release from prison, creating a powerful cycle of exclusion. However, all of these studies are from the USA and the relationships discussed will likely be heavily impacted by specific local circumstances (Fitzpatrick and Christian 2006).

The relationship between offending and homelessness is reflected in Dyb's (2009) study of a representative population within Norwegian jails, where two-thirds of prisoners were homeless on release. The levels of homelessness reported by Dyb (2009) are far higher than those found by Metraux and Culhane (2004), where only 11.4 per cent of adults had used a shelter two years after release. However, this may be due to the differing definitions of homelessness used within the two studies. As Dyb (2009) defined homelessness as having no secure address to return to on leaving prison, while the definition used by Metraux and Culhane (2004), shelter use, is a specific form of homelessness and will not pick up on those outside of the shelter system or in precarious forms of accommodation. Many people experiencing homelessness avoid hostels and shelters due to fears of criminal activity (Kinsella 2012) and it is known that shelters often have a relatively large population of people with a history of criminal offences (Homeless Link 2015). Homeless Link (2015) also identify that that crime and antisocial behaviour is one of the most common reasons for eviction from shelters. The comparison between the two studies shows the key limitations of the evidence on the links between homelessness and incarceration. Studies are highly dependent on the location used to sample people experiencing homelessness, both in terms of the country and the type of service provision.

Where homeless women are linked to criminal activity, there is a misconception lone women's homelessness can be linked to sex work, which is a criminalised activity in various forms depending on the country. However, the actual existence of this link is questioned with little evidence aside from Harding and Hamilton (2009). Bretherton (2017) suggests that the narrative instead stems from the stereotypes of homeless

women's deviance and the patriarchal binaries of women at home being a moral norm and women in public / outside the home as deviant. There is little other evidence on women's homelessness and criminal justice involvement.

Imprisonment and shelterless homelessness are associated with health issues, including problematic drug and alcohol use, mental illness, and some infectious and chronic diseases (Weiser et al. 2009; Brinkley-Rubinstein 2013). A particular focus in the literature is the intersection between mental health difficulties, homelessness, and incarceration. There is a clear interplay between the three, each of them reinforcing disadvantage and exclusion. Metraux and Culhane (2004) state that when mentally ill people enter prison, they are at far higher risk of shelterless homelessness following their release. Therefore, there is a clear interrelation between shelterless homelessness and offending and poor health, imprisonment and shelterless homelessness.

However, research indicates that many traditional health, social care, housing, and criminal justice services are inappropriate in supporting those with complex needs - such as the MEH (Cornes et al. 2011). This may be due to the way that welfare services, such as health provision, homelessness services and the criminal justice system, are traditionally run separately, meaning that multiple organisations often need to converge to work with specific individuals (De Corte et al. 2017). Due to services being run in silos, with separate methods of measuring results, many problems often arise at the boundaries of services, meaning that the MEH often fall between the cracks (Clark et al. 2015).

3.5.2 Criminal victimisation and homelessness

Research suggests that people experiencing homelessness who are rough sleeping suffer from far higher rates of victimisation than people who are housed (Diette and Ribar 2018; Lee and Schreck 2005; Wenzel et al. 2000). Factors that often intersect with rough sleeping, such as mental health issues and substance and alcohol use are also found to increase the risk of victimisation (Hart et al. 2012). In a robust study by Hart et al. (2012), 15 per cent of the participants had experienced crime 12 months prior to the study, and roughly 2 per cent had experienced violence. In particular, they found that mental health difficulties were highly associated with the chances of violent victimisation. Correspondingly, people experiencing homelessness are at a higher risk

of violence than housed people (Murray 2011; Larney et al. 2009; Robinson et al. 1997). In a study by Newburn and Rock (2006), half of the respondents reported violence and half reported threats of violence. This experience of crime created a fear of violence from the general population, similar to a fear of hate crime (Kinsella 2012). Similarly, both Ballintyne (1999) and Newburn and Rock (2005) identify the general public as perpetrators of crimes against those sleeping rough rather than other rough sleepers.

Gender is key in determining the types of crime faced by people experiencing homelessness. Women are found to be at higher risk of sexual violence, whereas men tend to experience other forms of violence (Heslin et al. 2007; Tyler et al. 2001; Wenzel et al. 2000). However, both women and men have been found to suffer from an increased risk of violence if they suffer from mental health difficulties (Hart et al. 2012; Murray 2011). The most prominent form of gendered violence and homelessness is the nexus between domestic violence and homelessness (Bassuk et al. 2001). The literature outlines the extent of domestic violence as a cause of women's and children's homelessness (Netto et al. 2009; Murray 2011). This violence linked to lone homeless women and homeless women with children is highly gendered and does not impact lone homeless men in the same way (Jones, 1999; Reeve et al., 2007; Mayock et al., 2016).

The evidence on domestic violence and homelessness is some of the only evidence to consider criminal victimisation and other forms of homelessness outside rough sleeping; it is unknown the extent to which other people experiencing homelessness are victims of crime nor how this relates to their homelessness. There is a further gap: despite the known evidence on the extent to which women's homelessness is linked to domestic violence (due to the differing systems supporting victims of domestic violence and homelessness), it is suggested that the linkages between the two can sometimes be missed in administrative systems, and the extent to which it is occurring may be underestimated. (Bretherton 2017).

3.5.3 The space of criminal justice

The police are key part of the homelessness archipelago and generally the relationship between the police and people experiencing homelessness is focused on sin talk. However, literature that conceptually engages with the relationship between the two

is more nuanced, it can at times also encompass sick talk or system talk. This section will now go on to explore some of the literature which enables a conceptual understanding of how the police and homeless people may interact. Although the police are often not the primary focus within the evidence they are often perceived as key actors.

There is significant literature focusing on the criminalisation of street homelessness which is linked to 'anti-homelessness laws' or 'quality of life policing'. This evidence explores the role of the police and public space (through public/private space and defensive architecture) in regulating or criminalising street homeless people's activities (Johnsen and Fitzpatrick 2010; Watts et al. 2018; Hennigan and Speer 2019; Robinson 2019). Earlier literature framed these interactions between the police and street homeless people as revanchist, arguing that they are a cruel part of urban governance aiming to 'cleanse' the city of 'undesirables'. The term "revanchism" emerged from Smith's (1996) analysis of New York City's punitive urban climate in the 1990s. It soon became a cornerstone in urban geography, providing a framework to critique the expulsion of visible minorities in urban spaces.

This can be linked to ideas of poverty management. Ideas of poverty management are prevalent in carceral geographies; scholars draw attention to the use of prisons as 'management' spaces for poor communities within the USA (Miller 2014, Wacquant 2010). Miller (2014) argues that programs that help people reintegrate after incarceration demonstrate the management of those in poverty and the persistent relationship between punishment and social welfare. The concept of poverty management argues that responses to homelessness are as a result of attempts to 'regulate and manage the spill over costs associated with so-called disruptive populations' (Deverteuil et al. 2009 p.652). The globalisation literature that informed revanchism focused particularly on the anti-homelessness laws in public spaces, enacted by the police, that were supposed to make public space more attractive for footloose global capital flows. Mitchell (1997) argues that this is the annihilation of space by law and is heavily informed by Harvey's (1982) work linking global capital flows to national de/regulation. The revanchism analysis emerged from the USA and draws on the perception that poverty equals shelter-less homelessness. Both Gowan (2010), whom the analytical framework for this thesis is drawn from and Mitchell (1997 pp. 305), a seminal author in revanchism, refer to Anatole France's declaration that

“the law, in all of its magisterial impartiality, understands that the rich have no more right to sleep under bridges than do the poor.” Some suggest that revanchism provides evidence of policy transfer between the USA and Britain, through ideology, language and privatisation (Newburn 2002). However, the clear similarities that Newburn (2002) identifies can sometimes obscure the key differences between the USA and Britain in how the police and homelessness services interact.

However, more recent literature has considered the ambiguity of these interactions between the police and people experiencing homelessness. To aid an understanding of this complexity and the ways in which services and institutions deploy concepts of care and control, as explored in Chapter 2, Johnsen et al. (2018) have developed a typology from force to tolerance which shows how the modes of power function across services. For Stuart (2015) and Margier (2023) in the US, whilst the police are engaging with shelter-less people experiencing homelessness on behalf of services, they aim to make service users into responsible citizens. For Johnsen and Fitzpatrick (2010) this is also ‘coercive care’, where the police act paternalistically with those involved in street culture. Some evidence finds that interventions can both counter and advance revanchist ideals, where projects ‘play a game’ with revanchism but also attempt to emancipate people experiencing homelessness (Scullion et al. 2015).

Devertueil (2003) argues that new poverty management is premised on the movement of people who are unwanted through various institutional settings such as; prisons, hospitals, and other forms of temporary accommodation. Devertueil et al. (2009) state that poverty management is not necessarily punitive in the sense of anti-homelessness architecture and can include supportive approaches such as Housing First; nevertheless, the emphasis is always on controlling deviant populations, often via the police. Poverty management spaces are therefore characterised as attempts by the state to manage those receiving welfare benefits. Some argue that revanchist law can be a part of ‘tough love’, which aims to support people experiencing homelessness to ‘get their lives’ together (Robinson 2019). Comparatively, others have instead argued that some spaces of care, seen to be outside revanchism, actually act as tools of revanchism and act punitively on people experiencing homelessness (Hennigan and Speer 2019).

3.6 CHAPTER CONCLUSION

This chapter has outlined the definition of homelessness that will be used in this thesis, finding that the ETHOS typology has broad consensus that it can account for the range of living situations that homelessness can encompass. It then explored evidence on the harms associated with homelessness, finding that there is limited evidence of the health interactions for people experiencing homelessness who apply to statutory homelessness services with children. There was also a predominance of robust quantitative evidence on the health and health interactions of single male people experiencing homelessness from outside of the UK, apart from data linkage work in Scotland (Waugh et al. 2018). There was also some recent evidence focused on rough sleeping people experiencing homelessness identified through administrative data linkage in Wales (Song et al. 2021). The chapter established that geographies of care and coercive care might be useful concepts with which to understand the interactions of people experiencing homelessness and the archipelago. Although there is broad literature on care, when applied to lives of people experiencing homelessness it is also focused on rough sleepers or services supporting those with more complex needs rather than other forms of homelessness. The chapter then explored the evidence base on criminal justice involvement and found that there was much poorer evidence than on health interaction. Most literature focused on three main areas, the association between MEH and incarceration or low-level offending and secondly, interactions between rough sleepers and police because of ‘quality of life’ policing, sometimes referred to as revanchism and women as victims of domestic violence. There was some evidence that people experiencing homelessness experience greater levels of criminal victimisation outside of this, but it was mainly focused on rough sleepers. However, overall, there were far fewer good quality quantitative studies, particularly from the UK, on any aspects of the interaction between people experiencing homelessness and the police.

4 Methodology

This chapter will show the ways in which the gaps identified in the literature review and the research objectives were addressed. First, this chapter will outline the research paradigms guiding this thesis (pragmatic paradigm as well as post-positivism), explaining how this led to the methods used. Quantitative methods are used as they are most suitable for addressing the research questions. The data used in this thesis were administrative data and data linkage between:

- Local Authority statutory homelessness service dataset (referred to as the 'homelessness data')
- The Emergency Department Dataset (referred to as the 'A&E data')
- South Wales Crime and Policing Dataset (referred to as the 'police data')

As administrative data have key epistemological, ethical, and analytical considerations these will also be explored. The conceptual definition, benefits, and limitations of research using administrative will be discussed before outlining the process for data access (as a significant barrier faced) and the ethical process and considerations unique to administrative data. This chapter will then introduce each of datasets used, how they were accessed and for the A&E data and the police, the process of cleaning and preparing for linking will be discussed. Next, for each of the datasets the variables selected for analysis will be explained. Lastly the analysis approaches undertaken are explained as well as some of the specific considerations for using statistical techniques on administrative data.

4.1 RESEARCH APPROACH

4.1.1 Epistemology and ontology

This research took a pragmatist approach, specifically informed by John Dewey. This chapter will draw on Morgan's (2007) reading of Kuhn's (1996) writing on paradigms

as “shared beliefs within a community of researchers who share a consensus about which questions were most meaningful and which methods were most appropriate for answering those questions” (Morgan 2007, p. 53). Instead of committing to just one of these paradigms or places on the continuum, pragmatism places equal weight on assertions about the nature of the world from positivist or subjectivist paradigms. It is equally valid to suggest that the world exists apart from our understanding of it and that the world is created through our conceptions of it (Morgan 2007). This means that the methodology discussion moves beyond the standard discussions of the ontological differences within paradigms which generally mean a clear rejection of certain types of knowledge, particularly at each ‘end’ of the positivist subjectivist continuum.

Much contemporary research in housing studies draws on the critical realist paradigm following the influential work of Fitzpatrick (2005b). A review of the literature on critical realism in housing studies might suggest that for some, the choice of critical realism is driven by pragmatism; that is, for much of housing studies the questions took primacy, and the choice of paradigm supported the researchers in answering their questions. The draw for most critical realist-driven studies within housing research tends to be that it allows for both a socially constructed world and an objective reality (Fitzpatrick 2005). Whilst pragmatism has been mainly used in mixed-methods research, driven in part by Teddlie and Tashakkori (2011), it remains a strong approach to single-method research projects. The attraction of pragmatism for mixed-methods scholars is clear; committing to most paradigms means a rejection of knowledge gathered using a methodology outside of the paradigm, meaning that for most combinations of methods, epistemology becomes a complex balancing act for purists, particularly strong subjectivists, or positivists. But because pragmatism is driven by the best way to gather the knowledge needed to answer the research questions this does not mean that mixed methods are always the best solution and pragmatic research should not equal mixed methods.

This transcendence of ontological paradigms is driven by Dewey’s approach to problem-solving, which is as follows (Morgan 2014):

1. Recognizing a situation as problematic;
2. Considering the difference it makes to define the problem one way rather than another;

3. Developing a possible line of action as a response to the problem;
4. Evaluating potential actions in terms of their likely consequences;
5. Taking actions that were felt to be likely to address the problematic situation.

This process of pragmatic research is not linear and includes reflections on the researcher's actions and beliefs at each step. The steps outlined do not suggest any specific research paradigm as different paradigms may provide the tools to answer different questions, or even the same questions but to provide different evidence for actions (Morgan 2014). Moreover, pragmatism makes explicit the active process of enquiry between the knower and the known. It is suggested that this paradigm fits well with the process required by analysing administrative data, as will be explored later in this chapter, when using an ethically sensitive secondary data source, the iterative and reflective process of pragmatic research ensures robust quantitative analysis. There are many unforeseen subjective decisions to be taken in analysis of administrative data and the explicit commitment to problem solving and considering the likely consequences is a vital part of the research process.

For Dewey, this concept of enquiry was to gain knowledge to generate change in some part of reality (Morgan 2014). Research inquiry should support action. Thus, pragmatism is a normative approach fitting with other normative approaches such as feminist research. From my personal standpoint, research on homelessness as an issue of injustice, and the pursuit of knowledge should be done to feed into the world outside of research. While policy-focused research can be critiqued for constraining questions and limiting the extent to which theoretical contributions can be made, there is a strong tradition of policy focused work in housing studies (Jacobs and Manzi 2000; Fopp 2008). For me, this is an important ethical consideration in the research process. Although the extent to which academic research is of actual use to people experiencing homelessness is a knotty unsolvable ethical problem (Cloke et al. 2000).

The focus on the role of research in 'changing the world' is also an important aspect of the theoretical framework used in this project, as Gowan (2010) explores how the change in definitions of homelessness, including and excluding separate groups and the stories told about the reasons for homelessness means that different solutions were used. She explores the way in which the focus of homelessness services in the US changed according to policy directions based on sick, sin, and system talk and the

so-called solutions to homelessness pursued depending on the main 'talk' at that time. Gowan (2010) also identified how the broader discussions on homelessness can change which research projects were funded and in turn the language and terminology used. Pragmatism allows for an exploration of these complex links and helps to make clear the ways that academic work has implications for the services offered to people experiencing homelessness and their day-to-day lives.

This project used the tools of post-positivism within pragmatism because they offered the best way to answer the research questions. The choices were not driven by my views on the nature of reality, but rather a choice between the language and tools of different research communities as a guide to inquiry. Therefore, as I used quantitative data, to use the tools of statistics requires an engagement with positivism due to the role of hypothesis testing, which is central to the scientific method. Post-positivism is linked to pragmatism as it arose to try to address the critiques of positivism. For the discipline of geography, Smith (1979) traces the emergence of the critique of positivism to David Harvey in 1969. Smith (1979) argues that positivism has never been highly influential within geographical research as the key tenets of positivism and the so-called 'myths' of a scientist gathering abstract data have never fitted successfully within geography. Smith (1979) disputes that there is a separate reality that can be discovered by following specific rules; specifically, quantitative methods are the only credible ways of undertaking the scientific method of hypothesis testing. Post-positivism tries to overcome the critiques of positivism, whilst it maintains the exploration of an underlying reality but allows for reflexivity in the role of the research and research methods or instruments. It therefore allows for a pragmatic engagement with the tools of the research paradigm.

4.1.2 Administrative Data and the Benefits for Research on Homelessness

The approach to data for this project was pragmatic; the literature acknowledges that collecting data on homelessness is challenging. This thesis used administrative data as very few other datasets capturing homelessness exist. Simply defined, administrative data are something that organisations collect through the course of their work (Connelly et al. 2016). Data linkage involves merging records relating to the same entity across different datasets, in this case, records about the same people across different public services (Connelly et al. 2016). First, this section discusses administrative data and its use in social science research and for research on

homelessness specifically, before discussing data linkage. The linkage and analysis of administrative data come with a unique set of epistemological and ethical considerations (Harron et al. 2017).

Administrative data offer many benefits to research but are particularly useful in addressing the weaknesses in the evidence base on homelessness in the UK. Anderson (2003) identified many of these limitations as far back as 2003, however many of these have not been able to be explored until the recent increase in availability of administrative data. Anderson (2003) identifies a lack of robust quantitative studies, a lack of longitudinal research, research unable to manage the heterogeneity of homelessness, and little comparison with those not known to homelessness services (Connelly et al. 2016; Harron et al. 2017). Culhane (2016) has also identified many of the benefits of administrative data for research on homelessness. As administrative data are a secondary source of data, this means that there is no need for participant recruitment. The recruitment of a large sample of participants for research on homelessness can be particularly challenging practically in terms of identifying participants who might have more chaotic lives or limited practical resources to engage with a research project, particularly on an extended basis for longitudinal research (DeVerteuil 2004; Phipps et al. 2021; Flaherty and Garratt 2022). All longitudinal studies suffer from attrition but longitudinal research on homelessness research can be particularly difficult for many reasons, including changes in accommodation, less access to the internet or phones, life events and the time needed to build trust with the research team (Cloke et al. 2010; Bonevski et al. 2014; Flaherty and Garratt 2022). By its nature, administrative data are longitudinal so homelessness, as a dynamic process, can be explored over time. Administrative data can also reduce the burden on participants, this is also a particularly key consideration for homelessness research where the research process may ask participants to engage with traumatic incidents or require time taken to engage in interviews or answer surveys (Phipps et al. 2021). It can also be practically challenging to identify participants who accurately reflect the heterogeneity of homelessness due to the differing locations likely to be needed and the range of practical challenges around gatekeepers, cost and time encountered (Third 2000; DeVerteuil 2004). In addition, because administrative can be linked information can be gathered from multiple sources this can facilitate a fuller exploration of the research questions than may be possible in other research designs due to

practical constraints (Culhane 2016). These factors mean that some administrative data studies can have much larger participant groups than any other research method (Thomas 2020). Administrative data research can contain more detailed data than other research designs and does not rely on self-reported data, for instance on times and dates of medical appointments or exact diagnoses that study participants may not be able to recall or feel comfortable discussing with researchers (Fitzpatrick et al. 2011; Connelly et al. 2016; Hoolachan 2016; Thomas 2020).

It is contested the extent to which administrative data research can be said to draw on full populations (Thomas 2020). The level of geography perceived as a population is a key consideration. To take the homelessness dataset in this thesis as an example, this dataset is for one local authority, meaning it could be a sample of the national population or the full population of homelessness service users from a local authority. Populations are not only defined by geography; if the population is defined as all service users who approached the statutory homelessness service in a local authority in a certain period, then this study could be drawing on a population. However, this definition excludes people experiencing homelessness who have not approached the local authority during the study period. This would exclude 'sofa-surfers', or those in informal accommodation arrangements and those who are 'homeless at home'. This might mean that women are underrepresented in the final homelessness dataset as it is known that women are more likely to make use of informal housing support and less likely to engage with services (Bretherton 2017). It may also exclude those who did not approach services because they thought they would be unlikely to receive support or had previously poor service experiences.

Administrative data are a secondary source of data, they are operational and not designed primarily for research purposes, which has key implications for their use (Harron et al. 2017). The data used in this project were taken from the databases of several different organisations. Each of these organisations had a set of practices in inputting the data that shaped the codes used and the way they were recorded. Even more so than survey data, which has a rich history of considering quality in survey design and organisation (Dale 2006), administrative data must be understood as a social artefact (Thomas and Tweed 2018).

The amount of data that can be used in administrative data studies can also lead to epistemological issues. Administrative data are a form of 'big data' which can suffer from a non-theoretically sound approach; this can occur through a data-driven process, where the researcher or machine learning algorithm explores the data without a predetermined theory or hypothesis, working purely inductively (Frické 2013). Because of the size of administrative data sets it is important to be careful in the analysis process; as Frické (2013 p.660) states: "Science needs problems, thoughts, theories, and designed experiments. If anything, science needs more theories and less data." This means this project has used the theoretical frame outlined in previous sections throughout the research process, ensuring that all analysis is theory-driven rather than exploring the data with no clear links with the known evidence.

4.1.3 Ethics

Despite the many benefits offered by using administrative data for social science research, the analysis of individual-level administrative data must also manage a unique set of legal and ethical risks. I needed to navigate these contentious considerations, balancing potentially clashing obligations from data holders, data subjects and research objectives. The key difficulty in using individual-level administrative data is that it is generally analysed without informed consent. Therefore, ethical decision-making and careful use of ethics safeguarding procedures are an even more key part of the analysis process. Although some researchers acknowledge that seeking consent, particularly when undertaking some research, such as with people experiencing homelessness or with mental health difficulties, can often be a grey area (Cloke et al. 2000; Hoolachan 2016). Undertaking research without any type of consent is not common.

This demonstrates one of the key differences with using administrative as the legal basis is 'in the public interest', unlike most academic research which relies on the basis of consent to use personal data (Sexton et al. 2018). The data subjects for most research using administrative data are not informed of the use of their data. Instead, the data is de-identified and its use is very tightly controlled to ensure the anonymity of the data subjects. Access needs to be navigated through safe havens where access is granted to named research for specific projects. Research access protocols need to be negotiated, these take months to finalise, and the agreements have significant constraints in the use of the data. Researchers are generally required to undertake

analysis within safe havens to ensure that the ethical risks of analysing linked administrative data are managed. These issues and mitigating strategies are discussed in the following section.

Prior to the commencement of the research, ethical approval was given for this project in April 2017 from the School of Geography and Planning Ethics Committee, Cardiff University.

Table 3 outlines the key risks to be managed that could affect this study when accessing and analysing administrative data. The mitigation strategies are explained in the section 4.2, including the security and processes of the secure research environment used (SAIL databank). Table 3 is adapted from Shepherd et al. (2020, p.7), so includes all the risks they identify from their review:

Risk	Mitigation
Risk one Identification of anonymised individuals: leads to data misuse, and harm (may lead to risks four and/or five). Risk increases with data volume, making data more 'disclosive'. Some research requires identification. Risk appetite varies depending on the sensitivity of the topic of the data, and the granularity of data.	Analysis was undertaken within a research safe haven, in this case, SAIL. Split file process of de-identification and anonymisation of all data analysed. Use of trusted third party. Analysis is undertaken in 'safe' setting within the SAIL gateway and uses two-factor authentication for access.
Risk two Data linkage affordances: increases other risks e.g., identification of subjects (may lead to risk one) or locations. Linkage errors, missing data, mismatches in data granularity and increased complexity may magnify risk and affect data reliability. Linked data can benefit individuals and groups, but low risk appetite may lead to opportunity risk (may lead to risk seven).	Analysis undertaken within a research safe haven, in this case SAIL. Linkage key is unique identifier allocated by MACRAL developed by administrative data experts in SAIL. Missing data reported transparently, following RECORD. Analysis is undertaken in 'safe' setting within the SAIL gateway and uses two-factor authentication for access and inspected by SAIL Data Guardian prior to release from the secure area.
Risk three Misinterpretation of data: lack of metadata, poor data documentation, linkage error, and researcher inexperience may lead to misinterpretation of data. Users misunderstand findings or misuse them for other purposes	Analysis was undertaken within a research safe haven, in this case, SAIL. I was able to draw on the expertise of experienced administrative data research experts and use code developed to aid analysis. Findings reported according to RECORD.
Risk four Malicious misuse of data: deliberate misuse leads to risk of harm (may lead to risk five).	Analysis undertaken within a research safe haven, in this case SAIL. SAFE researcher certification, IGRP application process. Data outputs inspected by SAIL Data Guardian prior to release from secure area.
Risk five Harm to individuals and groups identified in the data: results from deliberate misuse (may lead to risk four) or accidental re-identification, leads to potential psychological, physical, emotional, financial, reputational & other harm.	Analysis was undertaken within a research safe haven, in this case, SAIL. The analysis is undertaken in a 'safe' setting within the SAIL gateway and uses two-factor authentication for access and was inspected by SAIL Data Guardian prior to release from the secure area. Split file process of de-identification and anonymisation of all data analysed. Use of a trusted third party for split file process. SAFE researcher certification. IGRP approval.
Risk six Risk to commercial confidentiality: privatisation of public functions, complexities of data production and ownership lead to data breaches, commercial risks, and conflict between public policy benefit and commercial-in-confidence.	Not applicable to this project, no commercially sensitive data

Risk seven	Opportunity risk of not using data for research: risk appetite varies between data providers, individual data subjects, and researchers, resulting in no agreed risk appetite.	ADRN/ADRC-W negotiated and drafted complex legal agreements and physically and technologically facilitated the transfer of the homelessness and police data. Experience in understanding the concerns / requirements of data holders.
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Table 3 Risks in administrative data research

4.2 DATA ACCESS

Because of the sensitivities and risks (outlined in Table 3) that need to be managed when analysing individual-level administrative data, particularly when it is linked, units have been set up to facilitate analysis, security, the legal basis, and ethical data linkage. This research was supported by the Secure Anonymised Information Linkage (SAIL) Databank based in Swansea University, Wales. The SAIL Databank facilitates access to and linkage between de-identified administrative data (Ford et al. 2009). De-identified in this instance means that personal data (i.e., name, postcode etc.) have been replaced by an identifier that is unique to the person across all data sets in SAIL. Initially, as a collaboration between healthcare related services and Swansea University, the first datasets deposited in SAIL were health related. However, as interest and use of administrative data analysis and linkage have developed, SAIL have increased their 'non-health' related data resources, such as education data. Researchers can apply to use data which are currently held within the SAIL Databank by making an application to the Information Governance Review Panel (IGRP). Researchers can also bring their own data into the SAIL Databank or request new data to be brought into SAIL, as was done in this case with the homelessness and police data—the exact process is described in the section to follow, related to 'safe data'.

Because I was working with the SAIL Databank, this provided access to their secure setting and the A&E data. Access to a secure setting ('SAIL Gateway') means accessing the data stored in the SAIL Databank safe haven. "The SAIL Gateway was created on four basic principles to ensure that it met the needs of the growing data linkage community (Boyd et al. 2012) and these are to:

- a) Operate a remote access system that provides secure data access to approved users.
- b) Host an environment that provides a powerful platform for data analysis activities.
- c) Have a robust mechanism for the safe transfer of approved files in and out of the system.

- d) Ensure that the system is efficient and scalable to accommodate a growing data user base.” (Jones et al. 2014, p.198).

Through using the safe haven of the SAIL Databank many of the risks associated with administrative data research were managed; particularly risks one, two, four and five. The risks are mainly managed by the SAIL Databanks process, as a trusted research environment run according to the five safes’ concept: Safe people; Safe projects; Safe settings; Safe outputs; Safe data (Jones et al. 2014; Jones et al. 2019). The following section will provide an overview of these concepts and how my research methodology supports them, aside from ‘safe data’. This is because the data itself will be explained fully in a later section. I will also explore some of the challenges that came with adapting to this way of doing research and some reflections on the process.

‘Safe people’: is ensured by requiring training (Jones et al. 2014). This ensures that researchers who access administrative data fully understand their responsibilities, the risks of working with administrative data and how to export data that does not identify data subjects. This training helps manage risks to data subjects from harm of identification and gives data providers and data safe havens confidence in the skills and knowledge of researchers accessing the data. I attended SURE training in person in November 2016, passing the required test. I then refreshed my certification with online Safe Researcher training in November 2021. The Safe Researcher training covers the researcher’s responsibilities when analysing administrative data, data security and how to ensure that any data brought out of the safe haven is safe.

‘Safe projects’: On top of standard university ethical approval, multiple stages of project approvals were needed to gain access to the SAIL Databank (Jones et al. 2014). As indicated previously, data access was enabled by the Administrative Data Research Network (ADRN)/Administrative Data Research Centre Wales (ADRC-W). The purpose of the ADRN/ADRC-W was to facilitate access to administrative data, and to engage in the acquisition of new data sources. The ADRN/ADRC-W used the SAIL Databank as its technical infrastructure to link and analyse de-identified data, and they therefore supported researchers in the additional application to use the SAIL Databank. The project needed to first go through the ADRN project approval panel and was approved in April 2017. To pass, proof of completion of SAFE researcher training was required alongside my application. Before making an application, the

project needed to be scoped to provide enough detail for the approvals process. This involved considering the research questions, data availability, likely variables to be included, ethics safeguards, determining the appropriate statistical tests and considering likely outputs. Next, variable lists, ethical approval from the university and the IGRP form needed to be submitted. After obtaining this, my application could pass through the SAIL Information Governance Review Panel (IGRP) Application process. The IGRP process ensures that projects are for the public good and that independent experts, including government officials, scrutinise projects. Approval from the IGRP was also granted in 2017.

‘Safe setting’: The SAIL Gateway provides access to secure terminals and, later in my analysis, secure remote access to external computers. There is two-factor authentication and an encrypted connection (Jones et al. 2014). The SAIL Gateway requires multiple security measures, whilst important to ensure data security and manage disclosure risk, add significant complexity to the research process. When I initially started my PhD, I could only access my data if I booked access to the secure room in the ADNRN/ADRC-W, and you could not access the internet on these computers (Jones et al. 2014). This meant that when doing brand new analysis, as I was, you needed to write out any code needed and input it through a secure process into the room. However, this meant that if there were any complexities in the coding needed to do the analysis, outside of the code you had planned, and these issues came up during your session you could not look up the answer. This was a large barrier as generally when exploring new, complex datasets you need to regularly look up code to find out why you have had problems running your analysis or if you are trying analysis methods that are new to you. This is particularly a problem when analysing a dataset not designed for analysis or that has not been analysed before, where the structure is unknown, and the code I needed was unknown to me. The need to only access data in the secure room was initially a large barrier during the COVID-19 pandemic; however, SAIL provided remote desktop access to all researchers using the SAIL Gateway. This was a rapid improvement in the speed at which I could undertake my analysis because of my ability to troubleshoot my coding process.

‘Safe Data’: are also ensured by the de-identification process (this also manages risk one in Table 3). The SAIL Databank uses a split file de-identification method (Jones et al. 2019). The split file process is as follows. The datasets are split at the source

organisation into demographic and ‘other’ data (Lyons et al. 2009). The demographic information includes first name, surname, gender, date of birth and postcode. For this study, the ‘other’ data comprised of homelessness events, clinical data, and details about interactions with the police or homelessness service. The demographic information is also matched to a de-identified linking field (ALF) at this point (Lyons et al. 2009). The ALF is a unique number generated from a person’s National Health Service (NHS) number against the Welsh Demographic Service which is used as a proxy Welsh demographic database (Lyons et al. 2009). The ALF is further encrypted to ensure no one accessing the data can decrypt it (Lyons et al. 2009). The ALF is matched according to a matching algorithm, MACRAL, developed for the SAIL Databank (Lyons et al. 2009). the MACRAL uses probabilities to match across all five variables (Blakely and Salmond 2002; Lyons et al. 2009). These probabilities are the odds that a match is correct, and in the MACRAL this includes information such as the occurrence of common surnames in the Welsh population and that most male first names are given to people of a male gender. The matching is probabilistic, that is, the algorithm generates a range of probabilities of agreement and disagreement between the matching variables of personal information, giving greater weight to certain variables such as surname. Table 4 shows the five matching thresholds based a final cumulative probability of a match. This generates a range of acceptable matching thresholds (adapted from Lyons et al. 2009).

Table 4: MACRAL matching thresholds

Matching threshold:	
Deterministic record linkage	NHS number
Probabilistic linkage	Surname, First Name, Postcode, Date of Birth and Gender Matched
Probabilistic linkage through fuzzy match:	Surname, postcode, date of birth and gender matched to a likely first name matches on known variants. Matching probability more than 90 per cent
Probabilistic linkage through fuzzy match:	Surname, postcode, date of birth and gender matched to a likely first name matches on known variants. Matching probability more than 50 per cent
Probabilistic linkage through fuzzy match or no match	Surname, postcode, date of birth and gender matched to a likely first name matches on known variants. Matching probability less than 50 per cent

The process of assigning an ALF was different for the three datasets. The A&E data are easier to match to an ALF because of the history of the SAIL Data Bank discussed

above. As the A&E data uses an NHS number, this meant that there was greater confidence in the match as it was used to engage in deterministic matching. Deterministic matching means that agreement is only sought on the key variable/s, in this case, NHS number.

Scholars have undertaken sensitivity and specificity analysis on the matching algorithm. Sensitivity puts a numerical value on the success of correctly assigning a person to their personal details. A high number in sensitivity analysis indicates greater confidence that the matching has been done well. Specificity is the inverse; it shows how well the matching algorithm performs in avoiding incorrect matches. Lyons et al (2009) find that when undertaking sensitivity analysis, assessing the robustness of the findings and their assumptions, linking on the NHS number at the 50 per cent threshold (see Table 4) yielded specificity values > 99.8% and when using probabilistic linkage yielded sensitivity values of > 94.6%. This means that the results of the linkage are highly robust (Thabane et al. 2013). However, for the police and homelessness datasets, which did not have an NHS number, a unique identifier needed to be generated. As a comparable example, Lyons et al. (2009) linking to a social care database found that the sensitivity values were 95.2%. The sensitivity values are slightly lower for the social care data base but remain high overall, giving confidence in the matching algorithm.

‘Safe Outputs’: ensuring safe outputs has two functions in analysing administrative data: ensuring the safety of data subjects and reassuring data holders about inputting their data into the SAIL Databank. The risk avoidance of data providers can be a barrier to administrative data research, and this can be due to a combination of a lack of trust and expertise in navigating the legal frameworks that allow for sharing personal data (Moorthie et al. 2022). The support of ADRN/ADRC-W further helped me to manage this barrier (risk seven in Table 3), supporting me with expertise to manage the risk appetite of the data holders. ADRN/ADRC-W supported an application to access data directly from Swansea and South Wales police and input the data into SAIL, facilitating the lengthy and complex legal and technical process of gaining data access. It is known that many data providers have a risk-averse approach and a hesitancy in data sharing due to privacy concerns (Centre for Data Ethics and Innovation 2020; Mansfield et al. 2020). This hesitancy was a significant barrier to the completion of this project. Negotiating data access required substantial support from

the ADRN/ADRC-W in finalising the data access agreements and resulted in significant delays (multiple years for the police data) in accessing the data for analysis. This was the largest challenge faced in completing the project and reflects the difficulty in using administrative data for social science research. This project has found that the expertise, resource, and commitment from data owners required to bring datasets into a safe haven for analysis remain a key barrier to producing research outputs. This is despite the significant investment, experience and support able to be provided by data linkage experts such as the ADRN/ADRC-W and the SAIL Databank.

The other way that '*safe outputs*' are ensured is by the statistical disclosure control process. Disclosure risk is the risk that "using some statistical information, it could be possible to infer confidential information, and even identify someone, from a set of results that have been released" (Griffiths et al. 2019, p.16). The main disclosure risks that were relevant to my analysis were on 'identification' so when small numbers of observations were generated this could inadvertently reveal someone's identity. For instance, generating the range of times a person engaged with homelessness services would mean that the person with the largest number of engagements could be identified, particularly if the data on the number of homelessness applications were combined with other data like age or household type. This means that reporting data variance can be difficult, including histograms and some medians (depending on the number of observations). I also needed to manage the disclosure risk of 'attribution'. This is when putting characteristics together identifies someone. So, in my data, if there were very few homeless service users of a particular ethnicity who arrived at A&E in a police car, publishing these results could identify someone. 'Secondary disclosure' is the risk that one observation could be isolated from several outputs, so if multiple tables on police interaction are generated, with different underlying groups, it can be possible to deidentify a data subject. This was important to keep in mind during my analysis process at times, as when you are producing amounts of output with time in between releasing the results you can sometimes lose focus of the risk of secondary disclosure. This also means the risk increases the more results are taken out of the secure area, therefore only the most important results to the research questions should be requested out. The risks of identification can only be managed not completely mitigated. The final risk is from 'contextual information'. This is when those with knowledge of a specific population or other information in public can reveal

a person's identity from the data. This can be a greater risk in small geographies and within short timeframes. For instance, if a person knows someone who lives on a specific street and has been arrested for theft, releasing crime data may mean those with knowledge can identify data subjects.

The process for removing data from the SAIL Gateway is that analysis can only be exported out of the secure environment once it has been assessed by a SAIL Data Guardian, who ensures that the results in the public domain are not disclosive. This scrutiny is done by senior researchers in SAIL who ensure statistical confidentiality and the privacy of data subjects in the outputs. The threshold for releasing data from SAIL is five. This means that if a particular bit of information relates to less than five observations it cannot come out of the SAIL Gateway. At the start of my PhD, my outputs were often 'stuck' in SAIL disclosure control for several weeks as the process had not been refined, as it is time-consuming and intensive to review outputs. However, during my PhD the process has become much shorter and no longer causes such a long hold up in the analysis process. Nevertheless, despite its necessity, requiring outputs to be checked causes delays in analysis that other projects will not face as you need to wait to receive analysis results each time. This adds far more time to analysis and means quick changes cannot be made to results if decisions on the types of analysis change, as I found during my thesis.

Reporting the results of individual-level administrative data linkage do not only need to be safe for the data subjects, but they should also be transparent. Scholars have developed good practice in reporting information from observational health administrative data as additional factors need to be reported for robust analysis in administrative data that differ from other quantitative data sources. Poor reporting of results can result in risks two and three in Table 3 (Shepherd et al. 2020), relating to analysis and linkage error and communicating results. In this thesis, these risks were managed by drawing on the framework developed by Benchimol et al. (2015), called, Reporting of studies Conducted using Observational Routinely-collected health Data (RECORD). RECORD was developed to make the strengths, limitations, and basis of administrative data studies transparent. It builds on Strengthening the Reporting of Observational Studies in Epidemiology (STROBE).

4.2.1 Challenges and reflections on data access

During this doctoral research, the administrative data research landscape has changed dramatically; when the project first started to try to input the homelessness administrative data into SAIL it was the first statutory homelessness service data to be linkable. The quality of the data was therefore unknown, which limited the ability to definitively plan out the types of analysis that could be undertaken, or what results might be generated. Although the data was input into SAIL with significant support from the ADRN/ADRC-W and others, the barriers from legal and practical gatekeepers within the local authority, despite goodwill towards the project were significant and little progress has since been made in inputting any other homelessness datasets into SAIL in Wales. There were similar barriers from these types of gatekeepers in accessing the police data, which took multiple years to input for analysis. This was the first time that police data had been bought in SAIL for any project and the delay in access meant that it was unknown if I would be able to analyse it within the thesis timeline. Similarly to the homelessness data, no one had accessed the police data outside of the police in this format so there was little support to draw on to understand the practical aspects of analysing the dataset, as the format is quite different from typical quantitative research and you have the barrier of not being able to show the data to peers for advice and support due to the privacy of data subjects. This is something not faced in standard survey quantitative analysis. Earlier in this section I outlined the many benefits of using administrative data for research questions similar to mine, but it is important for others to continue to be mindful of the unique practical and ethical constraints of administrative data research as this field continues to evolve.

4.3 THE DATASETS

This section will discuss the three datasets used for analysis. Each of the three analysis chapters took a dataset as its focus. Chapter 5 explores the homelessness data in detail, Chapter 6 focuses on the A&E data and Chapter 7 the police data. In Chapter 6 and 7 the homelessness data was linked to enable an exploration of how homelessness interacts with emergency medical attendance and the police, respectively. The variables and measurements used for analysis are explored in the relevant analysis chapters.

The focus of the homelessness dataset was Swansea local authority, which then drove the geographical focus of the other datasets. The selection of Swansea was for pragmatic reasons based on the availability of the homelessness data that was acquired by the ADRN/ADRC-W. When my research commenced, local authority homelessness data had not been analysed or input into a secure environment, although several studies have been done since then. In order to do a wide a range of analysis, it was helpful to have as large a dataset as possible. Within Wales, there are only a few big urban local authorities with large numbers of homeless service users accessing support. This narrowed down the choice of local authority areas.

The next consideration that meant that Swansea was selected as the main site was because of the significant barriers to gaining access to homelessness administrative data, as detailed in previous sections. My supervisory team had good relationships with the local authority based on working together on previous studies. This meant the local authority was interested in the benefits of giving access to their data for research. Therefore, there was a basis of trust to start to navigate the lengthy and complex process of inputting their data into SAIL. This then meant that South Wales police was selected as the most appropriate partner for data input into the SAIL databank as they covered the Swansea local authority. All A&E data in Wales is in the SAIL databank so the extract for the same area was requested.

The following sections will describe the cleaning and linkage of the A&E and police datasets. The cleaning and linkage of the homelessness data is discussed separately in Chapter 5. This section will also introduce all the variables used within the analysis.

For all quantitative analysis, missing data can cause issues with the sample sizes required for certain analytical techniques and introduce bias. Types of missingness identified within the literature are missing completely at random (MCAR), missing at random (MAR) or missing not at random (MNAR). MCAR has no pattern to the missingness, MAR has a pattern to the missingness, but will not affect the results of the chosen analysis and MNAR will introduce a systematic bias to results (Bohensky 2016). To try to mitigate the risks from missingness, each data set was screened for patterns of missingness.

Each variable in each dataset that was used for analysis needed to be assessed to understand why data might be missing and the implications for later analysis. For

some variables, particularly in the homelessness dataset, the research questions meant that certain variables were intended to be used but could not be because of missingness. To assess the variables, descriptive statistics were generated. Where data was missing, a pragmatic decision was taken on deletion, and no imputation was used. The decisions taken for the health and police data set are explained in the following sections, whilst the process of cleaning the homelessness data is explored more fully in Chapter 5.

4.3.1 Local Authority statutory homelessness service data

The main dataset used for this study was collected by a statutory homelessness service in a Local Authority between January 2012 and March 2017. Throughout the thesis, it is referred to as 'homelessness data'. Since this data has been collected there have been, and continue to be, significant changes to the homelessness legislative framework in Wales. The legislation changes have implications for how data is collected and recorded, and the categories used within the dataset. Changes to guidelines and training may also change the ways in which a local authority collects statutory homelessness data. This section, therefore, describes the statutory landscape that was contemporary to the data collection. It is intended to facilitate an understanding of the data used for analysis, rather than provide an in-depth explanation of legislative entitlements and changes to homelessness law in Wales.

A small part of the data extract used in this research covers the first years of the implementation of the Housing (Wales) Act 2014. However, at the time when most of the data was collected, the homelessness system in Wales followed England. The key Act that set up the homelessness system was the Housing (Homeless Persons) Act 1977, which was then amended by the Housing Act 1996, and later by the Homeless Persons (Priority Need) (Wales) Order 2001. The key change where Wales diverged from England in the 2001 Act was the increase in the number of groups in 'priority need' and therefore additional households owed a statutory duty from their local authority for settled accommodation. Under this legislation, if a person or household were homeless or at risk of homelessness, they could approach their Local Authority and make an application for assistance. When a household approached the local authority, they should have had a formal interview to explore all their 'housing options' which might include mediation service or rent deposit schemes designed to prevent statutory homelessness. Outside of possibly providing preventative support, as this

differed considerably between local authorities, local authority staff would apply a series of tests to determine whether the household is entitled to statutory support. These were, determining if the household was entitled to public funds, whether they were homeless according to the legal definition, in priority need, if they had intentionally made themselves homeless, and if they had a local connection. Priority need categories included:

- Households with dependent children
- Pregnant woman
- 16- and 17-year-olds
- Young people under 21 who had been in care
- Households who became homeless due to an emergency (for instance a flood)
- Households where a member is vulnerable in some way, including:
 - o A mental health problem
 - o A physical or learning disability
 - o Old age
 - o Domestic violence, abuse or other violence or threat of violence
- Leaving the secure estate
- Leaving the armed forces

For statutory homelessness, people were defined as homeless if they were without accommodation that they have a legal right to occupy with their household and might reasonably be expected to live in, for instance, the quality of the accommodation must be adequate and there must be no risk of violence. A person could be found to be intentionally homeless if they had deliberately run-up arrears, committed antisocial behaviour or otherwise left accommodation they could reasonably occupy.

The data should include all households who approach the local authority and make a homelessness application, irrespective of the outcome of the various tests. The data did not include those who may be homeless but who do not apply for their local authority for assistance, for example, those who were 'sofa surfing'. The data also only records the lead applicant for the household, although where there were dependants, this is recorded if the household proceeds with a statutory homelessness application. A person or households' interaction with the 'housing options' process is referred to as a homelessness event.

Within this research, anyone who made an application for assistance under the homelessness legislation in the study period is defined as homeless. The group 'people who have experienced homelessness' (PWEH)² therefore includes anyone who made an application under the legislation. This more closely reflects the ETHOS typology definition of homelessness (Edgar and Meert 2005). The ETHOS typology provides a structured framework for understanding homelessness as a continuum, ranging from rooflessness to inadequate housing (Edgar and Meert 2005). It offers a comprehensive and internationally comparable definition that aids policy development, research, and social resource allocation (Busch-Geertsema et al. 2016). ETHOS strengthens measurement by including less considered areas of homelessness, ensuring that individuals in insecure or temporary housing are not overlooked. Additionally, it provides a stable conceptual foundation that is less susceptible to shifting governmental priorities. There is a consensus that its broad scope and adaptability make it a valuable tool in measuring homelessness effectively (Busch-Geertsema et al. 2016).

A key feature of the definition of homeless in this thesis is its dependence on the data and information available within the administrative dataset. Due to the constraints of administrative data, it was not possible to conclusively determine an individual's legal homelessness status. If only those officially recognised as homeless had been included, some individuals classified within the ETHOS typology would have been excluded. While some studies, such as Waugh et al. (2018), have successfully used data on individuals legally recognised as homeless, others have adopted alternative approaches to defining homelessness within administrative datasets. For example, Song et al. (2021) apply a similarly broad definition, incorporating sofa surfing and inadequate housing by identifying individuals flagged as homeless within health datasets. Several limitations arise from this definition of homelessness, primarily due to the inherent constraints of using administrative data, which is shaped by the information originally collected for other purposes than research. The dataset only

² This thesis uses the acronym PWEH (people/person who have/has experienced homelessness). This refers to an individual/s who was homeless at any point during the reference period (2012-2017) of the dataset. Because of quality issues with the date variables within the datasets, in most cases it was not possible to determine specific periods of homelessness, just that an individual had been homeless for a duration during the reference period of the study.

includes individuals who engaged with statutory services during the study period, excluding other household members associated with the main applicant. Moreover, a structural feature of administrative data recording means that children residing within households are not included in the dataset, despite evidence that some households have dependants. As the data pertains solely to the person submitting the application, unobserved repeat instances of homelessness may occur if household composition changes. Next, the data led definition also narrows the definition of homelessness to those in direct contact with local authority homelessness services, possibly missing those experiencing homelessness who do not seek support. However, given the multi-year scope of the study, it is likely that many individuals at risk of homelessness within the local authority have engaged with services. Finally, because of the data available is a risk that those who would be defined as homeless within ETHOS were ultimately included in the homeless cohort (Edgar and Meert 2005). Due to the inclusion of all of those recording as seeking assistance, the dataset may contain individuals experiencing housing insecurity or the threat of homelessness who did not ultimately become homeless or legally classified as homeless. Issues with coding application dates further complicate the accuracy of this definition, as it may include individuals whose cases have since been closed and who may no longer be homeless.

4.3.2 The Emergency Department Dataset

The second dataset used was the Emergency Department Dataset. This dataset was selected to investigate the health interactions of homeless individuals, following from the research objectives. Evidence shows that individuals experiencing homelessness frequently utilize emergency departments and have significantly higher rates of inpatient admissions compared to housed populations with similar characteristics (Moore et al. 2007; Ku et al. 2010; Hwang et al. 2005). People experiencing homelessness often have different reasons for using A&E compared to other groups, at times due to difficulties in registering with other forms of healthcare (Crane et al 2006). Others may seek mental health care through A&E (Canavan et al.2012), Multiple barriers hinder access to other forms of healthcare, such as negative attitudes from staff, inflexible services, and the competing priorities of subsistence, which can make attending appointments challenging (Whitley 2013; Neale 2001). While General Practice (GP) data could provide information on health interactions, access to this data was obtained for the project but ultimately not explored. The decision was influenced

by the time required to analyse the A&E, police, and homelessness datasets, as well as the greater complexity of GP data. Based on the literature, A&E data was concluded to offer the most insights into health interactions for this project.

This data is held and regularly refreshed along with other Welsh health data in the SAIL Databank³. This meant no lengthy access process was required and a request to use and link the data could be made as part of the project inception. As one of the SAIL datasets it has been used in many other research projects, this means that there is expertise to draw on in using the data and navigating the complexities of a dataset not designed for research.

The data is event level and relates to attendances at Accident and Emergency departments in Wales, with each event containing administrative and clinical information for a person. Data was requested for the Swansea local authority area for the entire population and for the unique identifiers for the homeless service users. The data extract was for 2009 to 2018 but the analysis was for a shorter period to ensure a match between each of the three datasets. In the population datafile there were 597,146 records and in the homeless service users datafile there were 51,522 records. Some people had multiple interactions during the study period.

The A&E data was supplied with a unique identifier (ALF) matched to the dataset. Table 5 shows the MACRAL match rate. As the data was supplied by SAIL the match rate was good with a majority of matches using deterministic record linkage. All of the probabilistic linkage categories are slightly higher for people known to homelessness services, however, the differences are all less than one per cent.

Matching threshold	Has experienced homelessness		Not known to homelessness services	
	Frequency	Per cent	Frequency	Per cent
Deterministic record linkage - NHS number	50,680	98.37	590,255	98.84
Probabilistic linkage - Surname, First Name, Postcode, Date of Birth and Gender Matched	380	0.74	3,931	0.66
Probabilistic linkage - Fuzzy match: Surname, postcode, date of birth and gender matched to a likely first name matches on known variants.	420	0.82	2,702	0.45

³ The full metadata for the A&E data held in the SAIL databank can be found on the website ([Health Data Research Innovation Gateway 2023](#))

Matching probability more than 90 per cent				
Probabilistic linkage - Fuzzy match: Surname, postcode, date of birth and gender matched to a likely first name matches on known variants. Matching probability more than 50 per cent	42	0.08	268	0.04
Probabilistic linkage - No match or Fuzzy match: Surname, postcode, date of birth and gender matched to a likely first name matches on known variants. Matching probability less than 50 per cent	0	0	0	0
Total events	51,522	100	597,156	100

Table 5: Match rate of MACRAL for A&E datasets

Once the match rate was inspected, the data was cleaned. The cleaning process and subsequent changes to the size of the dataset are outlined in Figure 2. The cleaning process excluded little data compared with the cleaning undertaken of the homelessness data (discussed in Chapter 5). A majority of the data excluded was from outside of the financial year period used for analysis. Visual inspection found very few differences in the cleaned and raw data, nearly all less than one per cent. However, there was a larger difference to the discharge route variable after cleaning for both the homelessness and full population data. After cleaning, the size of the ‘referred to GP’ group increased by four per cent for PWEH and five per cent for the comparator group. Conversely, the ‘no planned follow’ route decreased by five per cent for both groups.

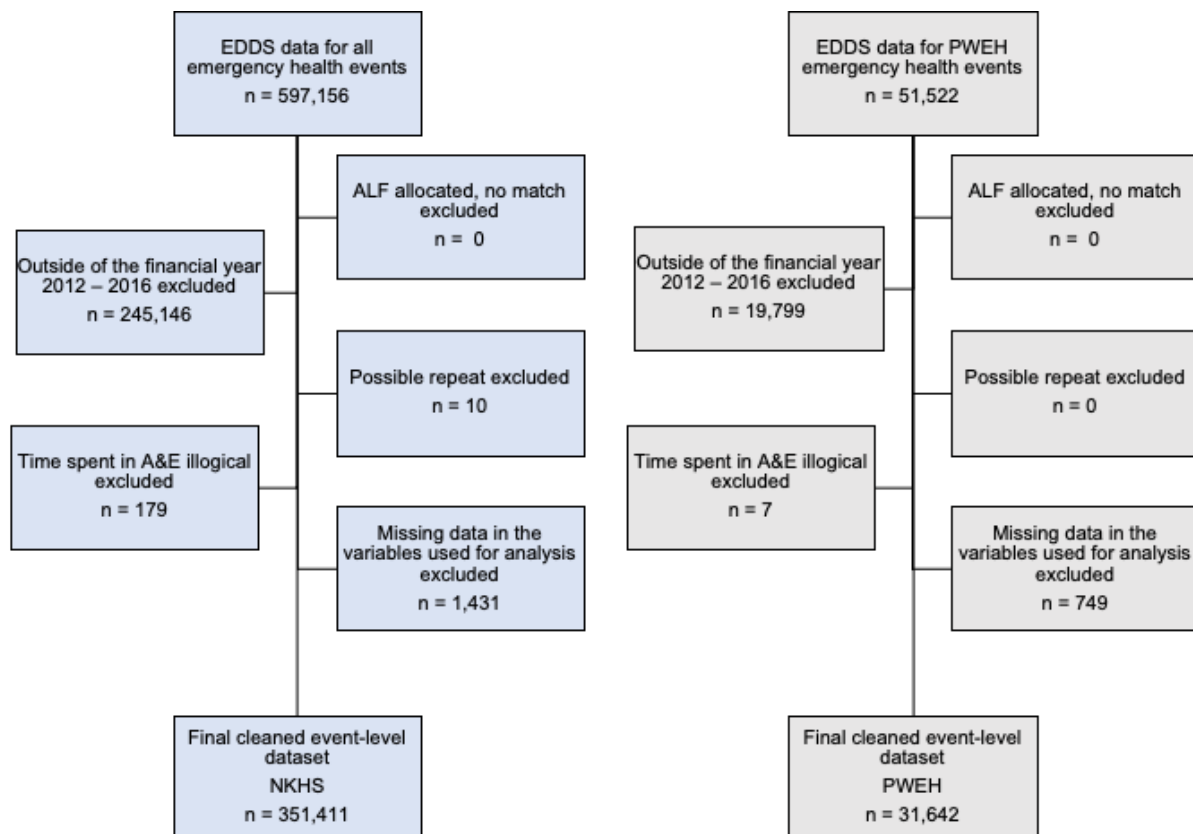


Figure 2: Data cleaning process for A&E data

The evidence suggests that people experiencing homelessness require significant intervention for a range of healthcare needs and conditions and that poorly managed health conditions lead to an increased rate of presentation to A&E (Ku et al. 2010; Chambers et al. 2013; Ng et al. 2015), there is also considerable focus on how people experiencing homelessness's healthcare is not managed correctly and their pathways through healthcare are distinct from those not known to homelessness services (Hwang et al. 2005; Dorney-Smith et al. 2016). Therefore, the analysis focused on comparing the frequency of A&E presentations of people experiencing homelessness with housed comparators. The variables explored were as follows:

Demographics [categorical]: The age and sex variables within the data were used. Age was continuous but converted into categorical to avoid exporting data with a disclosure risk by increasing group sizes. Age was approximate as it was generated from the week of birth variable supplied with the data. The week of birth variable was used to make an approximate age at the time of that specific presentation to A&E and then put into age categories. The sex category descriptions were taken from the metadata.

Category	Recoded
Male	
Female	
Indeterminate or anticipated sex change	Removed during cleaning because of small numbers
Not specified	Removed during cleaning because of small numbers

Table 6 Gender recoding in health dataset

Category	Recoded
18-25	
26-35	
36-45	
46-55	
56-65	
66-85	
Over 85	

Table 7 Age coding in health dataset

Injury type [categorical]: Evidence suggests that people experiencing homelessness are admitted to A&E for dissimilar reasons than housed comparators such as a prevalence of; unintentional injuries, falls, cold, burns, poisoning, victimization by assault and sexual assault, brain injuries, self-harm (Salit et al. 1998; Ku et al. 2010). The injury type variable was used to explore the relationship.

Category	Recoded
Fall/slip/trip	
Blunt force/blow from person/animal/machine	
Crushing injury	
Stabbing	Combined with 'cut with a sharp object' because of small numbers for some analysis
Cut with sharp object	Combined with 'stabbing' because of small numbers for some analysis
Shot	Recoded to other due to small numbers
Inhaled foreign body	Recoded to other due to small numbers
Drowning/near drowning	Recoded to other due to small numbers
Asphyxiating (external mechanical threat to breathing)	Recoded to other due to small numbers
Physical over exertion	Recoded to other due to small numbers
Poisoning/Overdose	
Burning/scalding	
Other	
Not Applicable – e.g., non-injury	
Unspecified	

Table 8 Injury recoding in health dataset

Triage code [categorical]: Literature suggests that people experiencing homelessness are likely to be in generally poorer health than those not known to homelessness services but use A&E for less serious incidents due to issues in accessing primary healthcare such as General Practitioner (GP) services (Crane and Warnes 2001). The triage category variable was used to explore the severity of people experiencing homelessness admittance to A&E.

Category	Recoded
Priority one - immediate	
Priority two – very urgent	
Priority three – urgent	
Non-urgent	
See and treat	

Table 9 Triage category coding in health dataset

Discharge route [categorical]: People experiencing homelessness have been found to have barriers in managing their healthcare, in part because of access to primary care (such as GP services)(Dorney-Smith et al. 2016; Reilly et al. 2020). The variable for discharge route was explored to see if people who had experienced homelessness were being routed through the health system via other forms of healthcare effectively

or were being ‘lost’ from the system as suggested by the evidence. In addition, ‘self-discharge’ is known to be specifically associated with those experiencing mental health difficulties and substance or alcohol misuse, it was therefore hypothesised that self-discharge might be associated with people experiencing homelessness with more complex needs and/ or multiple-exclusion homelessness (Henson and Vickery 2005; Ibrahim et al. 2007; Fitzpatrick et al. 2011; Luchenski et al. 2017).

Category	Recoded
Admitted to same Hospital within Local Health Board	
Admitted to other Hospital within Local Health Board	
Transferred to different Local Health Board	
Referred to Outpatient Department	
Referred to GP	
Referred to Other Healthcare Professional	
No Planned Follow-up	
Planned Follow-up at Accident and Emergency Department	
Patient Self Discharged without Clinical Consent	
Died in Department	Recoded to ‘Died’
Patient Dead on Arrival	Recoded to ‘Died’

Table 10 Discharge route recoding in health dataset

Arrival route [categorical]: The arrival route of a person into A&E is not regularly explored in the literature on the healthcare interactions of people experiencing homelessness. However, it was selected for analysis because of the category for ‘arrival in police car’. Often in the literature on reasons for attendance at A&E for people experiencing homelessness, it is suggested to be caused by anti-social behaviour and/or alcohol or substance misuse (Kerker et al. 2011). For example, in research on a cohort identified through homelessness recorded in UK health administrative data, the three most common long-term health conditions identified were: alcohol dependency, depression and drug dependency (Song et al. 2021). It was therefore hypothesised that ‘arrival by police car’ could suggest more complex needs or MEH homelessness and was explored to see if there was an association (Fitzpatrick et al. 2011).

Category	Recoded
Ambulance	
Helicopter / Air Ambulance	Recoded to other due to small numbers in PWEH data and when comparing
Private Motorised Vehicles (Car/ Lorry/ Van/ Motorbike/ Scooter/ Moped etc.)	
Private Non-Motorised Vehicles (Bicycle)	Recoded to other due to small numbers
Public Transport (Bus/ Coach/ Train/ Taxi)	
Walked	
Police Car	
Other	
Not Applicable (Planned Follow-up)	

Table 11 Arrival mode recoding in health dataset

There were few limitations in the A&E health data itself, however, to fully explore the health interactions of homeless service users it would have been beneficial to draw in further health datasets to explore primary care use and whether homeless service users were engaging with any specific substance, alcohol, or mental health healthcare. This would have enabled a fuller exploration of some of the relationships that tend to be associated with people experiencing homelessness, particularly multiple exclusion homelessness or who are sleeping rough (Bowpitt et al. 2011; Fitzpatrick et al. 2011; Fitzpatrick et al. 2012). For example, drug or alcohol misuse or mental health difficulties. These datasets are available within the SAIL databank and were not included because of the time needed to analyse them in this thesis. As the homelessness data was complex and the delays in accessing the data, I decided to not add further complexity to the study by adding additional datasets. Since this thesis commenced the health interactions of people experiencing homelessness and the linkage of other administrative datasets have begun to be explored in other research projects (Song et al. 2021; Thomas and Mackie 2021).

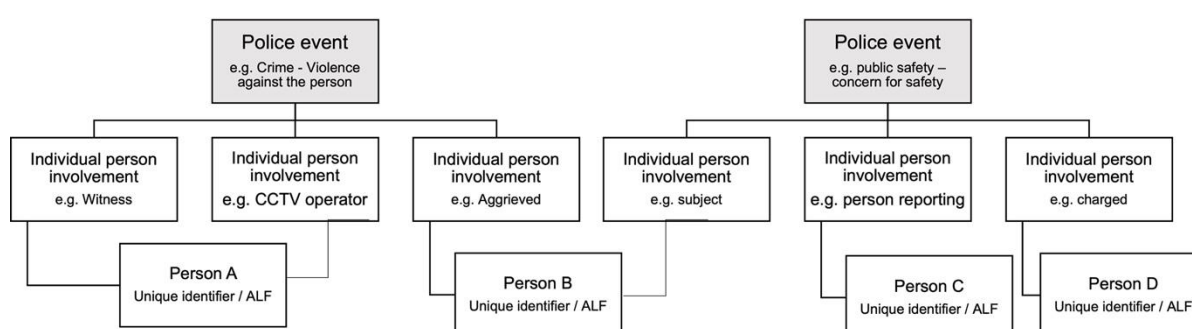
4.3.3 Crime and Policing Dataset

. The data for this study is from South Wales Police, which is the largest police force in Wales. There are four police forces in Wales: Dyfed Powys, Gwent, North Wales, and South Wales. Each force collects its own data. The geographical area covered by South Wales Police is 812 square miles and includes the two largest cities in Wales; Cardiff and Swansea (South Wales Police 2023). The police data extract was organised by police event. The dataset has a larger geography than either of the other

datasets which only have data for Swansea local authority. This is a limitation of the analysis and further analysis could focus on the geography of the interactions.

The dataset contained all interactions with the police sorted into separate interactions. Each police event could have multiple individuals associated with it by their 'involvement' and a person could also be associated with the same event in multiple ways (see Figure 17). The mean number of times someone was associated with the same 'occurrence' was 1.37. Therefore, depending on level of analysis undertaken, person level, interaction or event, the total number of observations will change. There were 9,198,196 records in the data file. The data extract was from January 2010 to December 2019.

Figure 3: Diagram of the structure of the police data



The police data was linked with an ALF or unique identifier as the data. Table 12 shows the MACRAL match rate for the data. Nine per cent of the data could not be matched with an ALF and was therefore excluded. 64 per cent of all records in the police dataset matched across all the linkage variables, 23 per cent matched with a probability rate of over 90 per cent and three per cent matched with a probability rate of over 50 per cent. All records with a matching probability of greater than 50 per cent were included in the further cleaning process. Due to the size of the dataset, despite the lower match rate compared with the A&E dataset, there was still a large dataset for analysis.

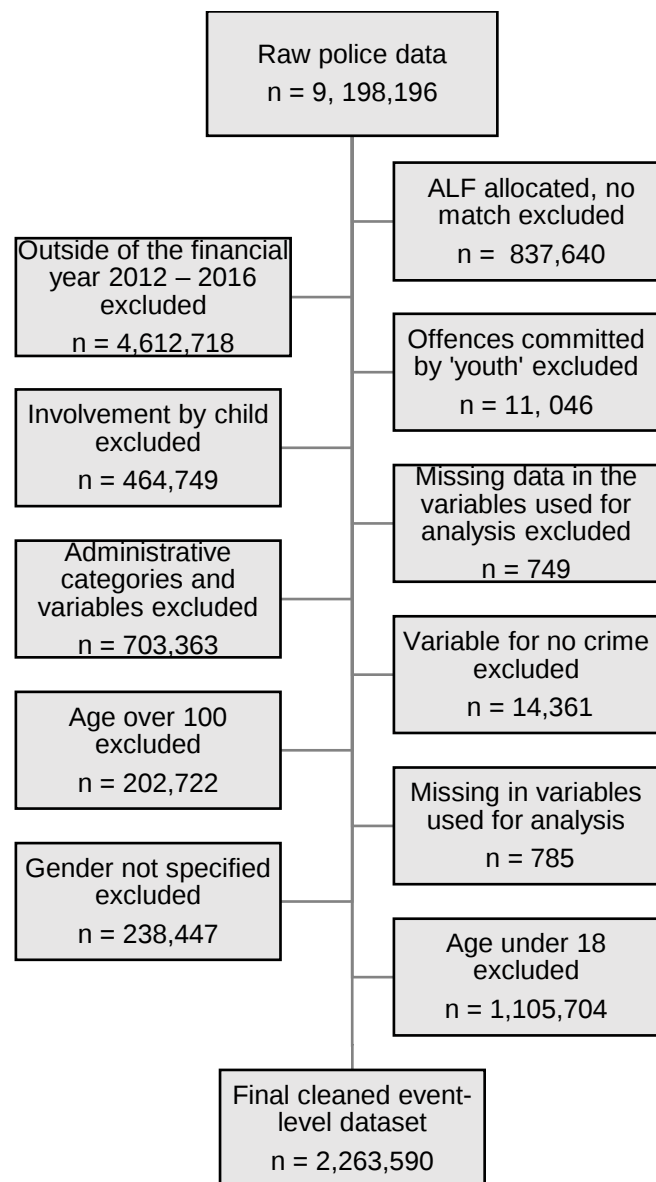
Table 12: Matching quality to unique identifier for police dataset

Matching threshold	Frequency	Percentage
Deterministic record linkage - NHS number		0
Probabilistic linkage - Surname, First Name, Postcode, Date of Birth and Gender Matched	5,907,686	64.23%
Probabilistic linkage - Fuzzy match: Surname, postcode, date of birth and gender matched to a likely first name matches on known variants. Matching probability more than 90 per cent	2,142,363	23.29%
Probabilistic linkage - Fuzzy match: Surname, postcode, date of birth and gender matched to a likely first name matches on known variants. Matching probability more than 50 per cent	310,600	3.34%
Probabilistic linkage - No match or Fuzzy match: Surname, postcode, date of birth and gender matched to a likely first name matches on known variants. Matching probability less than 50 per cent	837,278	9.10%
Total police events	9,197,927	

Figure 4 maps the process of cleaning the police dataset. This includes detailing the exclusion criteria that were applied to the data. Most of the data excluded was because it was outside of the reference period: financial years 2012 to 2016. Some administrative categories within variables were excluded as their purpose did not relate to the analysis. Within the 'No crime' variable the following categories were excluded as they did not contribute to the analysis: 'duplicate, crime already recorded' and 'incident duplicate of another'. As well as cleaning the data based on age, similarly to the other datasets, the police data were cleaned to remove those coded as 'child' or 'youth', as well as offences that were categories coded as youth related. This was to ensure comparability with the homelessness data which does not include homeless service users under 18.

The demographic variables of age and gender were compared for the raw and cleaned dataset, see Table 61 and Table 62 in the Annex. For gender there were no differences. For age, the differences between the datasets were small, these are attributed to the cleaning based on the young person related variables. Once the data had been cleaned then linked with the unique identifiers for homeless service users. Of the 7,816 individuals in the homelessness dataset 6,103 were linked with records in the police dataset.

Figure 4: Cleaning process for police dataset



There is evidence for increased risks of criminal victimisation and that PWEH can be more likely to commit some crimes (Newburn and Rock 2006). Homelessness is also associated with incarceration (Dyb 2009). Therefore, the variables selected focussed on the type of interaction with the police, to explore this identified relationship. The following variables were selected from the police dataset to use in the analysis:

Demographics, age category, sex, and household type [categorical]: causes of homelessness have been found to be linked to certain household types. For instance, homelessness is linked to domestic violence for women and some single-person

households have been found to be likely to experience mental health, substance or alcohol misuse issues which result in contact with the police (Johnson 2006; Baillargeon et al. 2010; Bretherton 2017; Gonzalez et al. 2017). Household type at the time of the first homelessness interaction was linked with the police data to use for analysis.

Age category and sex were coded as above in the A&E data.

Category	Recoded
Couple with dependent child(ren)	Household with dependant/s
Single parent with dependent child(ren) male applicant	Household with dependant/s
Single parent with dependent child(ren) female applicant	Household with dependant/s
Single person male applicant	Household without dependants
Single person female applicant	Household without dependants
Other house group	Removed

Table 13 Household type recoding in homelessness dataset

Grade of response [categorical]: some literature suggests that people experiencing homelessness are likely to interact with the police in public spaces by being accused of anti-social behaviour rather than for serious or violent crimes (Chen et al. 2007; Millie 2008; Bramley et al. 2015; Roberts and Archer 2022).. Whilst others suggests that street homeless people are victims of violent crime (Lee and Schreck 2005; Huey and Berndt 2008; Larney et al. 2009; Nilsson et al. 2020). The response category was explored to determine the severity of the interactions. It was hypothesised that if people experiencing homelessness were primarily interacting with the police because of their street-based lifestyle that there would be more routine interactions recorded.

Category	Recoded
Emergency	
Priority	
Routine	
Scheduled	
Telephone Resolution	
Null	

Table 14 Grade of response coding in police dataset

Type of interaction, grouped [categorical]: the interaction type variable was explored to find out the reasons why people experiencing homelessness had interacted with the police at the highest level, comparing crime interactions with public safety interactions.

Category	Recoded
Administration	Removed during cleaning
Antisocial behaviour	
Crime	
Non-NICL code	Removed during cleaning
Public safety	
Transport	

Table 15 Grouped interaction type recoding in police dataset

Type of Interaction [categorical]: Interaction type detailed the reason the police interacted with a data subject in a particular event. Literature suggests that PWEH interactions with the police are due to domestic violence, when they are rough sleeping due to ‘quality of life’ policing or due to higher levels of criminality or drug or alcohol misuse (Lee and Schreck 2005; Newburn and Rock 2006; Policy et al. 2008; Cheng et al. 2013; Bretherton 2017; Gonzalez et al. 2017). This variable was key to starting to unpack some of the relationships between police and PWEH commonly described in the literature.

This variable was coded according to the National Standard of Incident Reporting (NSIR) (2011). In the raw data, this variable had a high number of categories (118 in the raw data). Table 38 in the Annex describes the full list of possible categories and how they were recoded or cleaned. Table 36 in the Chapter 7 details the 30 categories that remained after cleaning, as well as the frequencies of each type of interaction.

Due to the amount of detail contained in this variable, the four most frequent interaction types are the focus of analysis. These were selected pragmatically after considering the frequencies of all interaction types. The definitions of the types of interaction taken from the NSIR (2011) or the Crown Prosecution Service definition (2023) are in Table 16.

Table 16: Definition for four most frequent interaction types

Category	National Standard of Incident Reporting or Crown Prosecution Service definition
Concern for safety	“A report received where there is a genuine and justifiable concern for a person’s welfare or well-being and the report does not outline any information which may dictate that the person is missing...this includes fears for personal safety as well as reports that a person has been found either collapsed or appears to be suffering from any illness or injury (including mental illness) ... or those who appear to be drunk and incapable but not disorderly.”
Domestic incident	“A report of a domestic incident, which occurs in either a public or private place. This category is designed to capture those incidents where the circumstances do not amount to a notifiable crime.”
Theft and handling (or just ‘theft’)	
Violence against the person	Violence against the person can refer to a wide variety of circumstances within the police offence classification index, including murder, harassment, and stalking.

Involvement [categorical]: The police dataset also had a variable which captured how a particular person was involved in an interaction, as explained in Figure 3: Diagram of the structure of the police data. This variable was used for analysis, as it enabled an exploration of the role of a person. There were 102 categories of involvement in the raw data. See Table 39: Involvement categories from raw police data in the Annex for how these were recoded to avoid reporting on small numbers. Due to the number of possible involvement types, the five most common involvement categories (Table 17) are the focus of the analysis in Chapter 7. The five most frequent involvements, besides being a pragmatic choice to enable a range of analysis techniques to be used, also reduced disclosure risks by avoiding small numbers of observations. The five most common involvement categories used for the analysis were also chosen because they aligned with much of the literature, which tends to focus on PWEH as either engaged in criminality or as the victim of crime (Newburn and Rock 2006; Dyb 2009). The involvement types selected enabled a focus on these relationships.

Category	
Subject	
Person reporting	
Witness	
Aggrieved	
Charged	
Other	Includes all other involvement types

Table 17: involvement categories chosen for analysis

4.4 ANALYSIS APPROACHES AND CONSIDERATIONS

A range of analytical techniques were used in each of the empirical chapters (5, 6, 7), including descriptive and inferential approaches. Analysis was undertaken in STATA 14. This section will give an overview of analytical methods used in this thesis and greater detail is given in the empirical chapters themselves.

In Chapter 5, descriptive cross tabulations were used to explore patterns in the data. Standardised differences were used to determine the effect size of the differences generated through the cleaning and linkage of the homelessness data, and Pearson chi-square test of independence were used to inspect the differences between group sizes.

In Chapter 6, cross tabulations and Pearson chi-square test of independence were used to explore patterns within the data before the development of a measure of frequent attendance and regression analysis was undertaken. Matching homeless service users with those not known to homelessness services was also undertaken. As the data extracts for those NKHS and PWEH interaction with A&E were supplied separately they were matched as separate datasets. First, both datasets were reduced to person level with the unique identifier still attached. All other interaction data was removed. The two datasets were then forced to make an exact match 1:1 with each other. They were matched on both age and sex to enable comparison without the confounding influences of these factors. There were 2661 individuals in each group following the matching. A dataset of 5,322 matched pairs was generated. Where more than one match was found a pair was selected at random. The random pair was selected using code for random selection in STATA. Once the matching had been

done the resulting dataset was relinked with each person's A&E interactions to create a new dataset.

Poisson regression was used on the A&E attendance count data to explore the relationship between homelessness and frequent attendance at A&E further. Poisson regression was selected because the data consists of event counts, which often have a right-skewed distribution. Poisson regression is the most suitable approach for this type of data. Incident rate ratios will be reported, as they demonstrate the effect of the explanatory variables included in the model on the dependent variable. Stata calculates the incidence rate ratio by dividing the incidence rate of the outcome (in this case, attendance at A&E) in the "exposed group" (the variable of interest in the model, such as homelessness) by the incidence rate in the "reference group" (for example, those not known to homelessness services) (STATA, 2025).

Lastly, in Chapter 7 descriptive methods were used to explore patterns in the data before event windows analysis of the frequency of interactions was undertaken.

This thesis used some forms of inferential statistics: chi-square tests and regression analysis. The use of inferential statistics for administrative data can be contested for several reasons (Thomas 2020). This section explores some of these complexities before justifying the approach taken for this research. First, inferential statistics can be impacted by a large dataset or N . Thomas (2020) outlines how the volume of data within administrative data research can lead to issues with use of probability (p values) to state if findings were 'significant'. A large N can mean that a majority of findings are significant simply due to the amount of data. Thomas (2020) suggests that to overcome this issue researchers can avoid relying solely on p values and instead consider the practical significance of the results or effect size.

The second consideration when using inferential statistics is that they have been designed to be used for random samples rather than full populations. However, the meaning of population for a research study is not clear. Even if the data for this research is defined as a sample rather than a population, it is not a random sample. This further impacts the use of inferential statistics. For this research, it could be argued that the data represents either a population or a sample, depending on how both are defined. If the full population is taken to be all people experiencing homelessness within a designated geographical area, then this research does not fulfil

the conditions as the dataset only includes those who have sought advice and assistance from the local authority during a specific time period. It also only included those for whom a unique identifier could be allocated and passed data cleaning requirements. The geography at which a sample becomes a population can also be contested. Whether or not this study draws on a population or sample is a matter of semantics, not all people experiencing homelessness within the local authority were included in the data for the reasons outlined in this chapter. It is suggested that the data for this study can be seen as both a population, all of those who approach statutory homelessness services and a sample, as it does not include all people experiencing homelessness in the local authority, nor all of the people experiencing homelessness in Wales or even the UK.

To navigate these issues, the complexities of population definition in statistical terms, and the impacts of a large N, this thesis followed Thomas (2020) and reported p values for all the inferential statistics but considers significance alongside effect size to draw conclusions rather than simply following the p value.

In Chapter 6 a control group is used for comparison. A control group is a group of individuals who are as similar as possible to the group of interest but who did not have the intervention or experience with the topic of interest, in this case attending homelessness services. The analysis then compares the two groups to see what difference the experience had; this can help to isolate the difference from other factors. The Chapter itself explains the process of creating the control group further. There were some limitations in the method for creating the control group used. It could have been more robust if propensity score matching had been used or if other variables beyond age and sex, such as household income or another socioeconomic measure, were available. However, these were not within the dataset used so could not be part of the analysis.

In Chapter 7 comparisons are made between those known to homelessness services and everyone else within the police dataset. This 'everyone else' group is referred to throughout as: 'not known to homelessness services'(NKHS).⁴ The NKHS group were

⁴ Although it should be acknowledged that this group could have sought assistance outside of the study period where data on homelessness service use is available. This could not be identified from the data available for this study.

not a control group, as it was not known how similar or different they were to the 'known to homelessness services group'. Instead, the comparison allows some consideration of how homeless service users' police interactions differ from typical police interactions. Nonetheless, typical police interaction in administrative data is not something that is clearly defined, as typical A&E use is. This is because the analysis of administrative police data is rarely done outside of the data given out by the police themselves. This is a developing area of research. These limitations must be taken into consideration when discussing the findings. Due to the complexity of the police dataset and delays in the delivery of the data, it was decided that analysis of a matched control group within police dataset was not within the scope of this thesis.

4.5 CHAPTER CONCLUSION

This chapter has discussed the research approach selected to guide this project, pragmatism, exploring how pragmatism, based on Dewey can be used to guide a quantitative research project. It was argued that pragmatism was particularly well suited to a research project using administrative data and focusing on homelessness. This is because of the need for transparency and the subjective, iterative nature of administrative data analysis as a secondary data source, data that is not designed for use in research. It was suggested that Dewey's identification of the normative nature of research in pragmatism and the links with action on injustice are well suited to homelessness research, particularly if the focus is on practice and policy as well as making theoretical or methodological contributions. This fits with my personal standpoint and part of my reasoning for focusing on quantitative methodologies, as often these can be seen to be more influential in policy making (Oliver et al. 2014). This is something particularly important in homelessness research in the UK where there are gaps in some of the quantitative evidence (O'Sullivan et al. 2020).

Next, the conceptual considerations in using administrative data were explored, particularly the specific benefits of using administrative data to research homelessness as well as identifying the unique epistemological and ethical considerations in this data source. The specific legal and ethical risks of using administrative data, of not having informed consent from data subjects were explored. I explained how this project was done through the SAIL Gateway and SAIL Databank, with the support of the ADRN/ADRC-W. The key concepts to ensure ethical analysis of individual-level

administrative data outlined were: safe people, safe projects, safe settings, safe data, safe outputs. Safe people referred to the knowledge of the researcher and making sure they have the skills to navigate the complexity of analysis of individual-level administrative data. Safe projects referred to the application process in place to ensure well-scoped projects, independently assessed to be in the public good. Safe setting referred to the security process in place in the SAIL Gateway where data is analysed. Safe data was the de-identification process which removed personal identifiers from the datasets. Safe outputs referred to the processes put in place to ensure that the de-identified data remains so, and the anonymity of data subjects is protected. I also discussed the ways in which these processes impacted the practicalities of doing research as well as the barriers to using administrative data for research in terms of access. As this was the first project in Wales to input homelessness data into SAIL and when it commenced was the first to link homelessness and health data in the UK as well as the first project to input policy data into a secure setting for academic research, there were a variety of practical and analytical challenges that had to be contended with. The largest of which were, the time taken to input the data itself into the secure area and then the time needed to become familiar with the large complex datasets and ensure that the outputs from them were both robust and reflected theory and evidence.

The following section then explained the three datasets used in the research process:

- Local Authority statutory homelessness service dataset (referred to as the 'homelessness data') explored in Chapter 5
- The Emergency Department Dataset (referred to as the 'A&E data') explored in Chapter 6
- Crime and Policing Dataset (referred to as the 'police data') explored in Chapter 7

It also explained the variables used in the A&E and police data as well as the process of cleaning and allocating an ALF or unique identifier. It also discussed if this process biased the dataset, outlining how the cleaning process for both datasets was straightforward with little missingness. There was some complexity in the cleaning of the police data because of the structure of the data. The chapter concluded by discussing some of the analytical issues that quantitative analysis of administrative

data needs to contend with due to the large sample sizes and the contested definition of a population for most statistical tests.

Despite the challenges, this approach to using linked administrative data to analyse homelessness was unique in Wales and part of a new approach to studying homelessness afforded by the increasing availability of administrative data.

5 Who is homeless through the lens of administrative data

5.1 INTRODUCTION

There is broad consensus that homelessness is more than shelterlessness, as typified by the ETHOS typology (Edgar 2009), which conceptualises homelessness as a continuum – from rough sleeping to living in insecure accommodation. Nevertheless, understandings of homelessness based around a relatively small group of homeless individuals, generally those who sleep rough, persist. This chapter will focus on the first objective of the thesis, to determine the feasibility of undertaking the linkage and analysis of administrative homelessness data in Wales. The use of linked administrative data is at the forefront of research into homelessness as it has the potential to provide a largescale, longitudinal population-based dataset (Culhane 2016). This chapter will show the potential of administrative data linkage for research into homelessness as well as exploring some of the challenges.

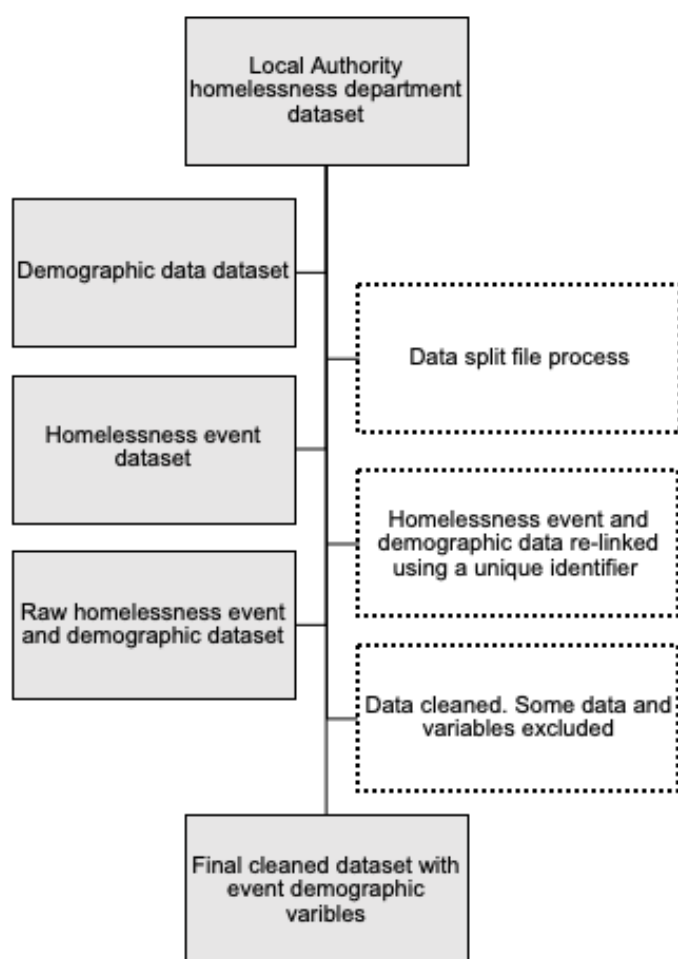
Although this chapter addresses the first objective it also presents key contextual findings for the analysis in Chapter 6 and Chapter 7. This chapter will detail the process of creating an individual-level dataset that can be used to explore the relationship between homelessness, emergency healthcare and the police. The analysis in this chapter explored who was homeless according to a local authority's statutory homelessness service. This chapter will discuss the process undertaken to create a cohort of PWEH to link with further datasets to start to explore research questions on health and police interaction. Whilst it was initially intended that this project could explore substantive research questions relating to the homelessness assessment, the data quality, coding, and complexity resulting from the many changes to the homelessness system reflected in the data have meant that these questions could not be explored. Instead, this chapter has focused on the process undertaken to create a cohort for further analysis.

After outlining the process of creating a linkage cohort and exploring if this introduced any bias into the data, this chapter uses descriptive statistics to summarise the demographics of the resulting final dataset. This provides a detailed account of those approaching a local authority homelessness service from April 6th 2012 to April 6th 2016. Finally, it will reflect on the suitability and experience of using administrative data to research homelessness.

5.2 ANALYSIS

Figure 5 shows the process used to create the study cohort that will be described in this chapter. This section will discuss patterns within the data received from the statutory homelessness service. My thesis draws on the broadest conceptualisation of homelessness throughout. This section discusses the original data coding and re-coding decisions taken. The following sections will focus on the data itself and the decisions taken through the cleaning process to arrive at the final dataset. It will finally assess the feasibility of using the data for further analysis.

Figure 5: Process of the final homelessness dataset creation



5.2.1 Identifying and defining a homelessness event in messy administrative data

The dataset can be described as follows, the raw homelessness dataset contained homelessness events from 6th of April 2012 to the 6th of April 2017, which includes applications from two legislative homelessness systems in Wales. The Housing Act (Wales) 2014 (the Act) came into force towards the end of this window. The data was stored in an Access database maintained by the local authority and was used for statutory reporting to Welsh Government. The local authority data were standardised for reporting, rather than a database purely for case management. The Welsh Government reports on aggregated homelessness returns. This provides greater confidence in the accuracy as compared with data solely for operational uses. Although it is likely that the local authority processed the data using their knowledge of their recording systems prior to using it in their reporting to Welsh Government. It is

important to be mindful that the data is a secondary source; it was not designed for use in research and data quality issues are relating to its use as secondary data.

The findings in this chapter need to be contextualised by the policy changes which may have influenced the dataset. It can be hypothesised that changes to reporting requirements driven by Welsh Government did not fit in the existing codes or database used. Before the Act, the recording and reporting of statutory decisions and outcomes, particularly concerning homelessness prevention, was inconsistent across local authorities. This is at least in part because homelessness prevention actions fell largely outside of any statutory duty. Albeit prevention was still part of performance indicators set by the Welsh Government. Services were also likely to have been making preparatory changes before the Act came into force. The legislative review that informed the Act found considerable disparities in the recording of prevention across local authorities and queried the validity and reliability of it (Mackie et al 2012). They found radically different approaches to recording prevention assistance (Mackie et al. 2012). This complexity and ‘messiness’ are reflected in the coding of the local authority data.

Due to this complexity, a decision was taken to include all applications for homelessness assistance, irrespective of the statutory decision or outcome recorded against the application. All households were judged to be either homeless or in housing need and therefore homelessness according to ETHOS. This broad definition of a homeless event aligns this analysis with the ETHOS typology of homelessness (Edgar 2009), where homelessness includes houselessness, insecurity and inappropriate housing. All interactions with the local authority were considered a homelessness event.

5.2.2 Assessing the feasibility of using the variables in the raw dataset

Within the dataset received from the local authority, there were 16,971 homeless events or rows in the dataset before allocating the homelessness events to a unique person identifier. The dataset received was from April 6th 2012 to April 6th 2017. The lead applicant could have several events within the dataset. Each event had three dates: application date, duty date and solution date. ‘Duty date’ had 1631 missing values but ‘application date’ and ‘solution date’ had no missing values. The missing values for ‘duty date’ were likely to relate to the legal position or whether an applicant

was found to be in priority need⁵. This will have changed over the course of years within the dataset and the multiple changes to the legislative system and guidance in categorising homelessness applications. Although 'solution date' had no missing values, analysis of the time period between 'application date' and 'solution date' suggested a large amount of error. This was because many applications had either negative time periods associated, suggesting that a person or household had been in the system for a negative amount of time or extremely long periods which looked as though they might be errors but could not be validated. Therefore, this analysis excluded the date variables aside from the 'application date', to determine the date when an applicant approaches the local authority for a homelessness event. This was the date that was used in further linkage once it had been cleaned, as detailed later in this chapter.

Within the data from the local authority, the demographic variables had the least missing data and the clearest metadata of all the information received. The metadata impacted the utility of the data, so where the metadata was clearer, it improved how easy it was to use for analysis. Table 18 shows the range of household types within the data; just under a third of households had dependent children and two-thirds were lone-person households.

The original ethnicity codes contained granular ethnicity codes. This was recoded to combine the categories to mirror the high-level ethnic groups used by the Office for National Statistics (ONS 2022)—see Table 40 in the Annexe. The ethnicity categories were combined to allow for further analysis without creating very small groups, thereby avoiding disclosure risk and issues with small groups for analysis techniques.

Within the raw dataset, the variable for age reflected the different solutions and entitlements for younger and older people meaning that the variable did not contain much information. The date of birth for applicants could only be added after the demographic data was relinked using the unique personal identifier. Moreover, it was unclear how pension age was defined within the metadata. Table 20 shows that the majority (76 per cent) of homelessness events were coded to those aged between 25

⁵ See Section 4.3.1 fuller discussion of the outcomes under the legislation.

and pensionable age. There were far more younger applicants than those at 'pensionable age'.

Table 18 : Household type frequency in raw data

Meta-data - Household type	Frequency	Per cent
Couple with Dependent Child(ren)	1,107	6.52
Single Parent with Dependent Child(ren) Male Applicant	194	1.14
Single Parent with Dependent Child(ren) Female Applicant	3,515	20.71
Single Person Male Applicant	7,490	44.13
Single Person Female Applicant	3,340	19.68
Other House Group	1,325	7.81
Missing	0	0
Total	16,971	100

Table 19: Ethnicity frequency in raw data

Recoded - Ethnicity Category	Frequency	Per cent
White	15,167	89.37
Other Mixed/ Multiple Ethnic groups	108	0.63
Asian, Asian British or Asian Welsh	680	4.01
Black, Black British, Black Welsh, Caribbean or African	649	3.82
Other Ethnic Group	340	2.00
Ethnic Origin Not Known	27	0.16
Missing	0	0
Total	16,971	100

Table 20: Age category in raw data

Meta data – Age Category	Frequency	Per cent
16 - 17 Years Old	11	0
18 - 21 Years Old	1,332	7.85
22 - 24 Years Old	2,245	13.23
25 and over	12,819	75.53
Pensionable Age	564	3.32
Missing	0	0
Total	16,971	100

The other data fields supplied by the local authority related to the person's homelessness application and had complex metadata which included references to multiple homelessness systems. The clearest variable with the least missing data or inconsistent coding categories was for the cause of homelessness', although 26 per

cent of the events were missing for this variable. Some recoding of the cause of homelessness' needed to be undertaken due to small category sizes to ensure there was no disclosure risk; see Table 41 (in the Annex) for how the categories were recoded. The most common reason recorded for the cause of homelessness for a homelessness event was 'breakdown of relationship' and the second was 'termination or loss of tenancy'. A majority of the 'causes' were used infrequently, possibly related to changes to the statutory system which gives certain groups statutory entitlements. This may mean that individuals were more likely to make an application if they knew they were entitled to support and may also be reflective of the 'causes' a frontline worker might choose to record. Due to the amount of missing data, this variable was excluded from further analysis.

Table 21: Homelessness cause frequency in raw data

Recorded homelessness cause category	Frequency	Per cent
Breakdown of relationship	2,997	17.66
Termination or loss of tenancy	2,141	12.62
Institution or care	1,553	9.15
Parents no longer accommodate	1,526	8.99
Friends/relatives no longer accommodate	1,372	8.08
Rent arrears	594	3.05
Mortgage arrears	424	2.05
Prison leaver	454	2.68
Current property unaffordable	461	2.72
Violence or harassment	271	1.60
Returned from abroad	258	1.52
Hostel/rough sleeper	235	1.38
Current property unsuitable	158	0.93
Fire/flood - emergencies	29	0.00
Anti- social behavior	39	0.00
Missing	4,459	26.27
Total	16,971	100

5.2.3 Data cleaning and creation of a dataset for further linkage

In order to arrive at a final dataset, the raw data needed to be joined with a unique identifier which would facilitate linkage with other dataset held within the SAIL Databank. The following section will outline the results of the pseudonymisation and probabilistic matching to the most likely unique identifier. To be confident in any

analysis undertaken on the dataset, it needed to be free from errors and missingness, which meant that the data needed to be cleaned. This results in the inclusion and exclusion of data and variables, with subjective decisions needing to be taken. This section will discuss the decisions taken on inclusion and exclusion to create a final dataset. It will then explore whether matching to a unique identifier and cleaning the data introduced any bias. The final homelessness dataset was compared with the raw data supplied by the local authority to explore if any of the decisions taken, and the pseudonymisation, introduced bias.

As the data received from the local authority had been split to ensure the privacy of the applicants, the event variables were joined with the demographic variables that had been pseudonymised; see Figure 5 for the full process or Section 4.2 in The Methodology for a discussion. Joining the event data with the demographic data allowed an assessment to be made of the proportion of the data that could be matched according to the MACRAL and therefore would be usable for further linkage with the A&E and police dataset. The inclusion criteria for probabilistic matching were a threshold of over 50 per cent accuracy. Although using a threshold of over 50% accuracy may increase the possibility of using false positive matches, it was concluded that this risk was acceptable for this study due to the overall poor match rate for the data. It was therefore pragmatic to ensure that the largest dataset possible could be used to generate matches with the other datasets.

Table 22 shows that there were no deterministic matches with an NHS number, as this dataset comes from outside the health service, so an NHS number is not routinely recorded by homelessness services. For probabilistic matching, over half of the data had a cumulative probability of over 90 per cent or was matched across all five variables. 25 per cent of the data were either not matched or fuzzy matched with a probability of less than 50 per cent. These events were excluded from later analysis as they were not allocated a unique identifier.

Table 22 Matching threshold to unique identifier according to MACRAL

Matching threshold	Frequency	Percentage
Deterministic record linkage - NHS number	0	0
Probabilistic linkage - Surname, First Name, Postcode, Date of Birth and Gender Matched	2,247	13.24
Probabilistic linkage - Fuzzy match: Surname, postcode, date of birth and gender matched to a likely first name matches on known variants. Matching probability more than 90 per cent	9,377	55.25
Probabilistic linkage - Fuzzy match: Surname, postcode, date of birth and gender matched to a likely first name matches on known variants. Matching probability more than 50 per cent	1,164	6.86
Probabilistic linkage - No match or Fuzzy match: Surname, postcode, date of birth and gender matched to a likely first name matches on known variants. Matching probability less than 50 per cent	4,183	24.65
Total homelessness events (n)	16,971	

Once the split files had been rejoined (see Figure 5) I needed to clean the data to ensure it was suitable for further analysis. See Methodology Section 4.1.2 for a full discussion of why the data cleaning process is particularly important when using administrative data for research. This section will discuss cleaning the homelessness data and the decisions taken. This was the first time this data had been used for research, so the cleaning was an iterative process. The implications of excluding data and variables needed to be carefully considered to determine how the process would change the make-up of the dataset and shape the analysis. Whilst there are principles for cleaning administrative data (Thomas 2020), my choices in the cleaning process were all new.

The first exclusion criteria were to exclude exact data pairs to remove possible duplicates. The next set of data to be excluded were homelessness events outside the financial year 2012 and 2016. This was to ensure that the time periods across each dataset (the police and A&E data) remained the same. Each of the raw datasets was supplied with different timeframes. After this, several checks were made to exclude clearly illogical data, specifically where an applicant had more than one homelessness event, their ethnicity and gender were checked to see if they aligned. Whilst this risked excluding trans people, known to have a high risk of homelessness, the small numbers

mean that exploration of trans homelessness would likely be a disclosure risk regardless, so these events could not be flagged for additional analysis (Matthews et al. 2019). Also, non-matching gender variables risked inconsistencies when the data was linked with the other datasets for the rest of the analysis. Next, homelessness events where a person's recorded age was under 18 and over 100 were excluded. Under eighteen-year-olds were excluded as young people's data should not have been included in this dataset and those over 100 were presumed to be errors. Events with negative timeframes, where the event's end date was before the start date, were also excluded.

Ethnicity, household type and age category coded according to the metadata supplied by the local authority were compared at the homelessness event level (long format) to assess the implications of removing data through cleaning and probabilistic matching. Because a comparison needed to be made with the raw data supplied by the local authority, age could only be compared using the more limited variable without the detail from using age according to date of birth. The variable was more limited as it had less information than could be obtained from using a person's week of birth. See Figure 6 for the categories. Comparing the cleaned and raw datasets did not suggest that linkage and cleaning introduced bias into the final dataset. Figure 6 and Figure 7 show a comparison between the household types and age categories in the two datasets, demonstrating that they were very similar. All differences were less than 1 per cent; see **Error! Reference source not found.**, **Error! Reference source not found.** and **Error! Reference source not found.** for the frequencies and percentages.

In order to provide more confidence in the cleaning and linkage of the homelessness data standardised differences of the age category and gender supplied in the dataset were generated, see Table 23: Difference between raw and cleaned data – ethnic group

Category - Ethnicity	Raw data	Per cent	Cleaned data	Per cent
White	15,167	89	9047	90.30
Other Mixed/ Multiple Ethnic groups	108	1	39	0.40
Asian, Asian British or Asian Welsh	680	4	361	3.6
Black, Black British, Black Welsh, Caribbean or African	649	4	390	3.90
Other Ethnic Group	340	2	177	1.80
Ethnic Origin Not Known	27	0	6	0.10
Missing	0	0	0	0.00
Total	16,971	100	10020	100.00

Table 24: Difference between raw and cleaned data – household type

Category - household types	Raw data	Per cent	Cleaned data	Per cent
Couple with Dependent Child(ren)	1,107	7	635	6.30
Single Parent with Dependent Child(ren) Male Applicant	194	1	125	1.30
Single Parent with Dependent Child(ren) Female Applicant	3,515	21	2,158	21.50
Single Person Male Applicant	7,490	44	4,431	44.20
Single Person Female Applicant	3,340	20	1,918	19.10
Other House Group	1,325	8	753	7.50
Missing	0	0	0	0.00
Total	16,971	100	10,020	100

Table 25: Difference between raw and cleaned data – Age group. Event level

Age group	Raw data	Per cent	Cleaned data	Per cent
16 - 17 Years Old	11	0	0	0
18 - 21 Years Old	1,332	8t	801	8
22 - 24 Years Old	2,245	13	1,355	14
25 and over	12,819	76	7,584	76
Pensionable Age	564	3	280	3
Total	16,971	100	10,020	100

Table 26. The standardised difference for gender was 0.02124, this represents a small difference. This means that the variable for gender is not a source of error and consequentially bias (Harron et al. 2020). The standardised difference for age was 0.09108. This is considered to be a large effect size, however as the variable for age was cleaned to remove some ages, such as below 18 that could not be used for further analysis this difference was concluded to be manageable.

Figure 6: Comparison between raw and cleaned datasets for household type (cleaned data n = 10020, raw data n = 16971)

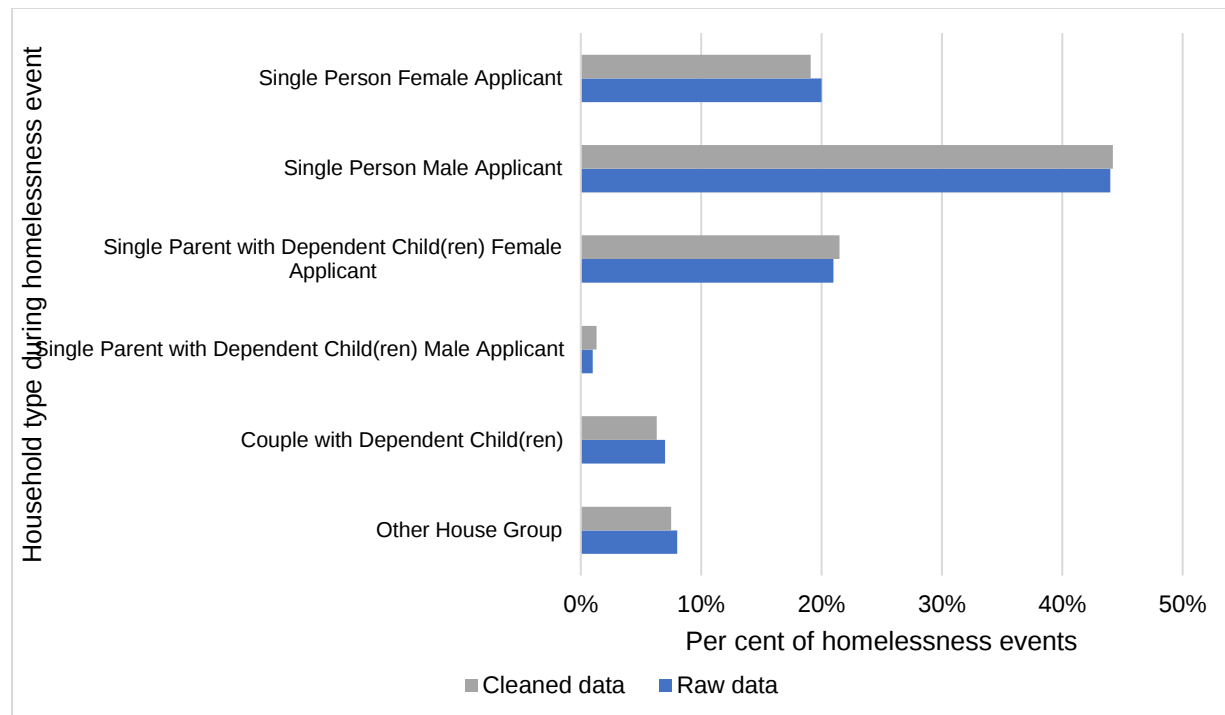


Figure 7: Comparison between raw and cleaned datasets for age category (cleaned data n = 10020, raw data n = 16971)

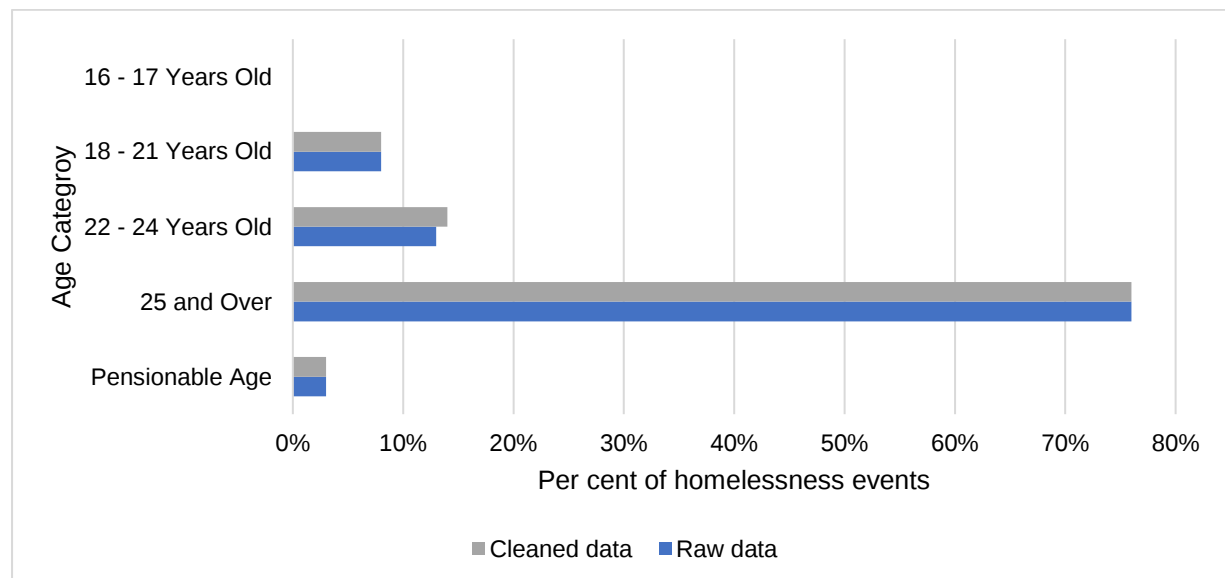


Table 23: Difference between raw and cleaned data – ethnic group

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Other Mixed/ Multiple Ethnic groups	108	1	39	0.40
Asian, Asian British or Asian Welsh	680	4	361	3.6
Black, Black British, Black Welsh, Caribbean or African	649	4	390	3.90
Other Ethnic Group	340	2	177	1.80
Ethnic Origin Not Known	27	0	6	0.10
Missing	0	0	0	0.00
Total	16,971	100	10020	100.00

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22 - 24 Years Old	2,245	13	1,355	14
25 and over	12,819	76	7,584	76
Pensionable Age	564	3	280	3
Total	16,971	100	10,020	100

Table 26: standard differences for gender between cleaned data and data flagged for exclusion

Variable	Cleaned	Per cent	Flagged for exclusion	Per cent
Gender - Male	5116	51.1	3623	52.1
Gender - Female	4904	48.9	3328	47.9
Age – 16-17 years old	0	0	11	0.2
Age – 18-21 years old	795	7.9	537	7.7
Age – 22-24 years old	1357	13.5	888	12.8
Age – 25 and over	7586	75.7	5233	75.3
Pensionable age	282	2.8	282	4.1
Total observations	10,020		6,951	

5.2.4 Demographics of final homelessness dataset

The following section will discuss the demographics of the final dataset that will be used for further linkage with the police and A&E datasets. It was intended that the data could be used to understand repeat homelessness and moves through the homelessness system. The data was received in a long format, with multiple rows for each unique person or household. Each row appeared initially to be a single homelessness event, these were coded differently and it was analytically challenging

to make a robust conclusion on whether multiple homelessness events related to the same personal identifier, if they were multiple distinct homelessness events, or a single continuous homelessness event but recorded in separate rows to reflect different stages of the legislative homelessness system. Also, the dataset only recorded the personal details of the main applicant for assistance, without recording the information for other household members. This means that it was possible that some PWEH may have unobserved repeat homelessness if they were the main applicant in one homelessness event but not in another. The data in Table 27 was therefore not a measure of repeat homelessness. Because of this complexity, only the first homelessness event in this data was used to link the other data sets further. The dataset, therefore, became a person-level dataset, rather than event level.

Table 27: Frequency of homelessness events

Number of homelessness events	Frequency	Per cent
1	7,816	78.00
2	1,578	15.75
3	392	3.91
4	142	1.42
5	58	0.25
6	25	0.25
7 or 8 ⁶	9	0.09
Total	10,020	100

To summarize the main demographic characteristics in the final person-level dataset, overall, most of the PWEH were under 45 and the majority of PWEH were between 26 and 35 (35 per cent), with the second largest category being under 25 (see Figure 8). As shown in Figure 9, the largest household type was ‘single male applicants’ (43 per cent), with ‘single parent with dependant child(ren) female applicant’ as the second largest (22 per cent). There were still a considerable number of homelessness events for, ‘single female applicants’, who made up just under 20 per cent. However, there were few events for ‘couple with dependent children’ and ‘single male parent with dependant child(ren)’. A majority of the PWEH in the final dataset were ‘White’ (89 per cent), with similar numbers of PWEH who were “Asian, Asian British or Asian Welsh”

⁶ Seven and eight homelessness events categories were combined to avoid disclosure risk.

(four per cent) and “Black, Black British, Black Welsh, Caribbean or African” (four per cent), see Figure 10.

Figure 8: Age of PWEH at the time of first homelessness event in the cleaned dataset (n=7816)

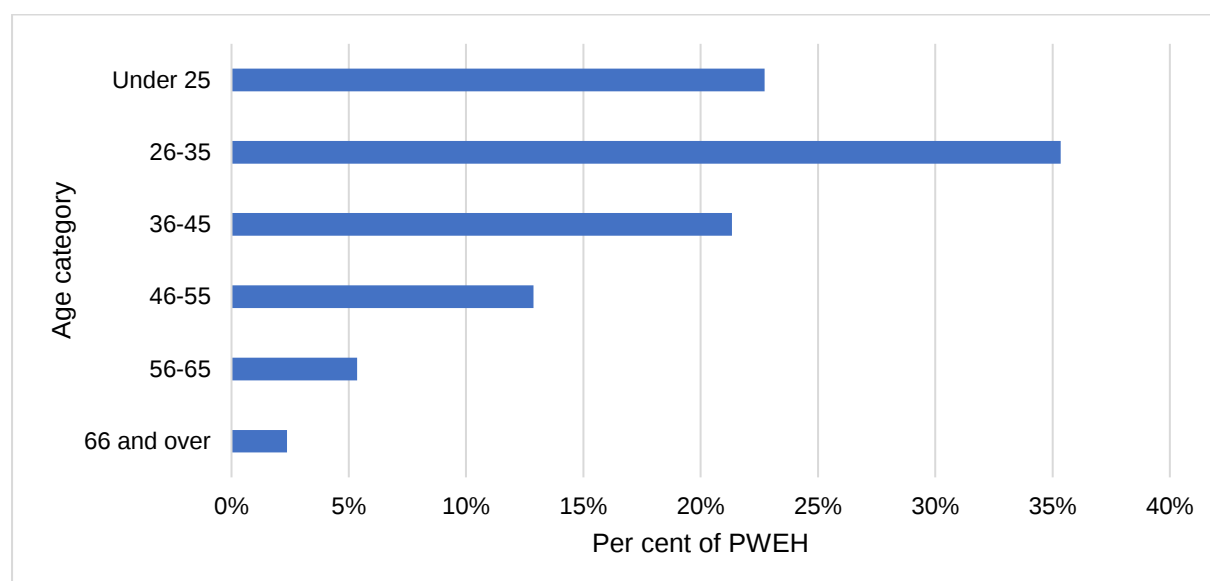


Figure 9: Household type for lead applicant at the time of first homelessness event in the cleaned dataset (n=7816)

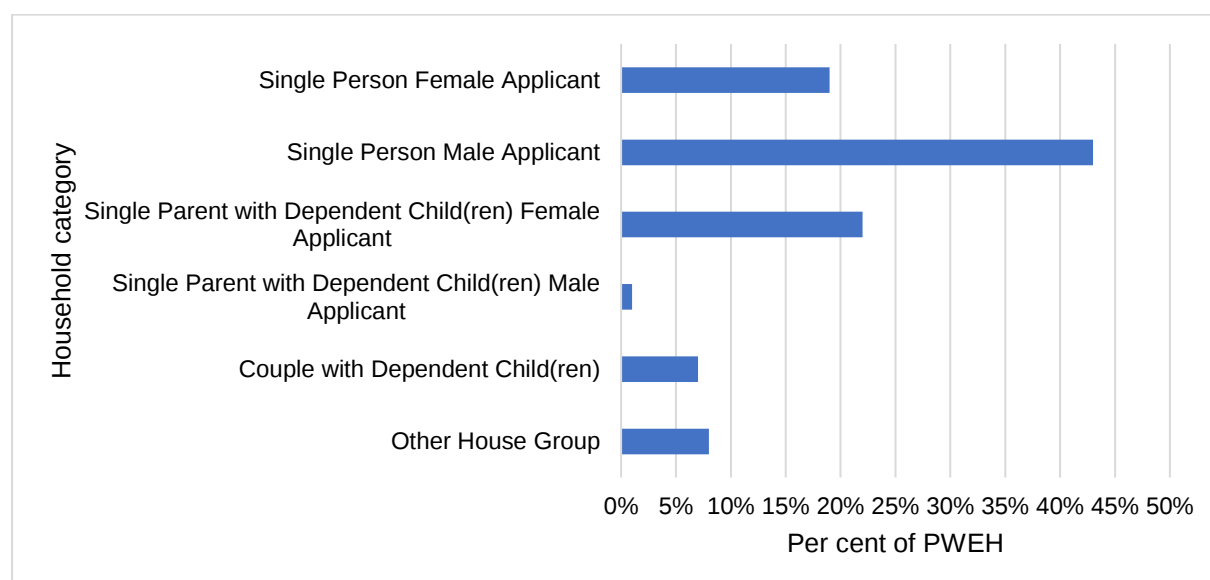
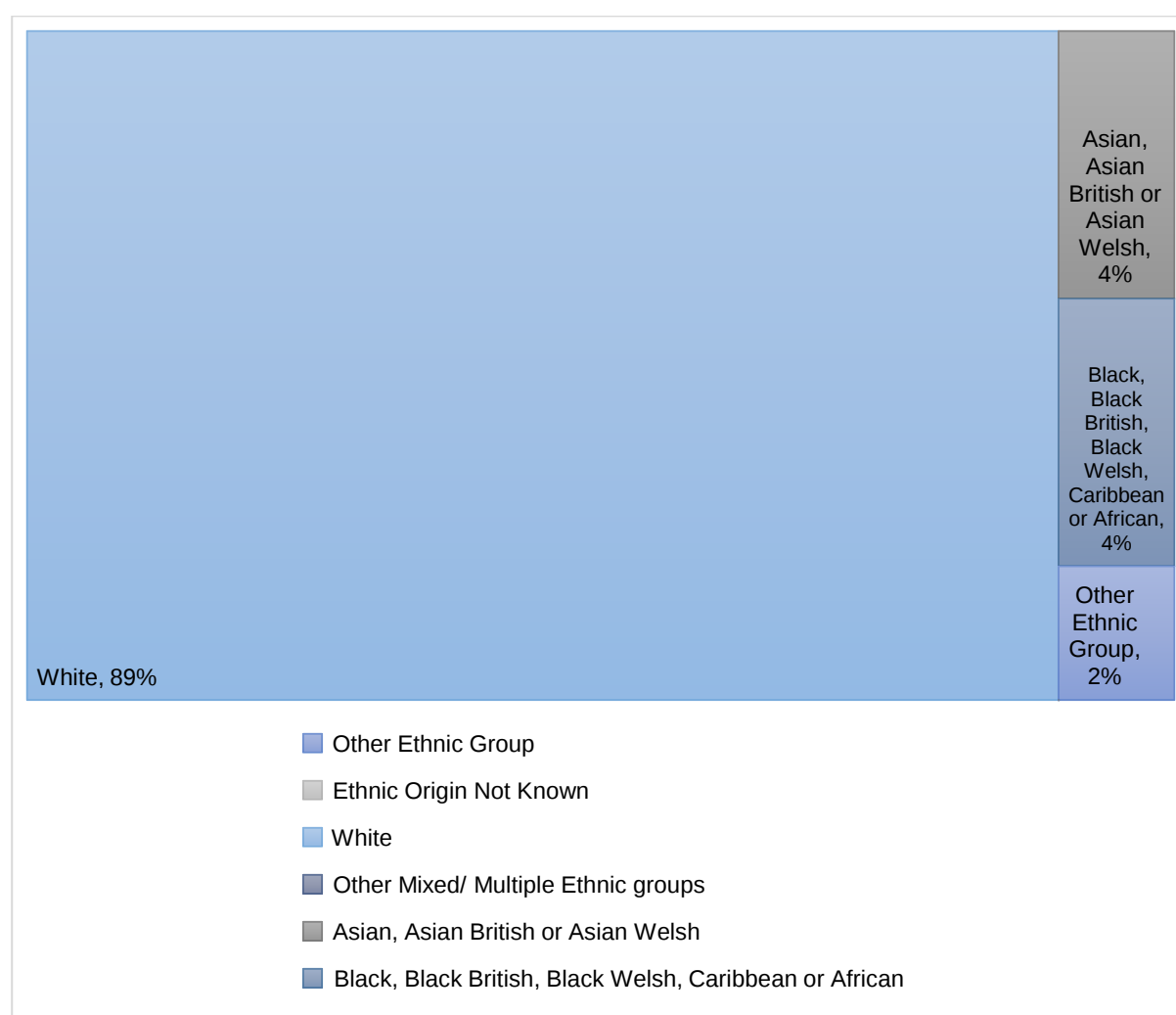


Figure 10: Treemap of ethnicity for PWEH in the cleaned dataset (n=7816)



5.3 DISCUSSION

The analysis presented in this chapter has shown the process of assessing the feasibility of using homelessness administrative data. The discussion will now consider the potential of this data and suggest some of the ways that this data could be used in further research. It is proposed that administrative data could address many of the ways that homelessness can be misrepresented. The discussion will first discuss how the exploration of administrative data could enable analysis of the homelessness service interactions of women and ethnic minority service users, focusing on key evidence gaps. It then considers the practical implications of the results of this analysis, discussing some of the challenges to be faced in the analysis of administrative data.

5.3.1 Making heterogeneous forms of homelessness visible

Administrative data can facilitate exploration of statutory homelessness, allowing analysis of the experiencing and needs of a more heterogeneous range of homelessness. Despite statutory returns providing aggregate data on this type of homeless, far less is known about these group's experiences in the homelessness system nor their experiences more broadly, for example their health needs. This chapter finds that administrative data can be used to build this evidence base.

Many of those who experience episodic homelessness (Benjaminsen and Andrade 2015), which is homelessness that lasts for a short period of time and does not reoccur, are women and/or households with dependants, particularly in the UK, where many of those who pass through statutory homelessness services are female-headed households with dependent children. Women are more likely to care for dependent children for various reasons linked to social norms and the structures of social care provision, which often reflect existing beliefs about femininity and caring (Baptista et al. 2017; Reppond and Bullock 2020). The locations for recruiting and conducting large-scale studies on homelessness are not generally designed for those with dependents, particularly in the UK context where households with children are granted extra rights in the statutory homelessness system and should be provided with permanent accommodation (Mayock et al. 2015; Bassuk et al. 2017). As a result of this so-called 'invisibility', comparatively little is known about women and families experiences and their healthcare use or statutory homelessness services (Whitzman 2006; Teruya et al. 2010). This, therefore, demonstrates one of the large benefits of using statutory homelessness data as it means that research questions relating to women's and households with dependent children's homelessness can be explored using robust quantitative methods, addressing a substantial gap within the literature. The summary of this data set shows that 19 per cent of the PWEH are 'single person female applicants' and 22 per cent are 'single female parent with dependant child(ren)', making up just over a third of the dataset.

However, despite the prevalence of women's homelessness in the UK, and the findings in this thesis, the wider literature often draws attention to the 'invisibility' of women (Barrow and Laborde 2008; Baptista 2010; Mayock et al. 2015; Bassuk et al. 2017). There are several explanations given for this 'invisibility'. Bretherton (2017b) and Casey et al. (2008) reveals how gender plays a part in how people may experience

rooflessness, stating that women will often avoid services utilising informal support networks and when sleeping rough will favour hidden public spaces leading to a lack of visibility. It is suggested that this is in part due to the strategies deployed by women to 'hide' their homelessness, given the greater social and physical harm which may result from prolonged homelessness (Mayock et al. 2015; Reeve 2018). Women are also more likely to be experiencing 'hidden homelessness' due to being 'homeless at home'. This is due to their home being unfit due to risks of violence and abuse or the low standard of the dwelling (Netto 2006; Murray 2011; Reeve 2018). The findings in this suggest the idea of women's homelessness as being 'invisible' needs greater nuance as when considering the statutory system in the UK, and the findings in this thesis women's homelessness is far from invisible.

A similar 'invisibility' is faced by PWEH from 'Black, Black British, Black Welsh, Caribbean or African', 'Asian, Asian British or Asian Welsh' or other ethnic minority groups. Whilst there is some recognition of research from the USA on the intersection of ethnicity and homelessness, there is comparatively little work on the topic from the UK (Bramley et al. 2022). This is despite a recognition of the ways in which racism has in the past and continues to intersect with housing systems resulting in significant disadvantage for some groups. Netto (2006) suggests that those in ethnic minority groups are less likely to present to homeless services and argues that official statistics may be underrepresenting the true extent of housing insecurity of ethnic minority people, she also draws attention to the diverging housing pathways of different ethnic minority group. Bramley and Fitzpatrick (2018) found that some participants in the 'mixed' ethnic groups category had very high risks of homelessness. Administrative data linkage can further explore this complex picture as 'Black, Black British, Black Welsh, Caribbean or African' and 'Asian, Asian British or Asian Welsh' PWEH make up eight per cent of the PWEH cohort. This means that despite this possible underrepresentation the overall larger sample sizes in administrative data, and the numbers of applicants compared with population averages in the census, means that research can focus on the experiences of Black and Asian people facing homelessness in ways that have not been possible previously.

This study has found that 'Black, Black British, Black Welsh, Caribbean or African' PWEH may be overrepresented compared with the general population. Most homelessness events in Table 19 were for White main applicants. However, when

comparing the number of events for 'Asian, Asian British or Asian Welsh' (4 per cent) and 'Black, Black British, Black Welsh, Caribbean or African' (4 per cent) categories, there was a higher proportion of events than the population of Swansea might suggest. In 2011 3.3 per cent of the population of Swansea identified their ethnic group within the 'Asian, Asian British or Asian Welsh' category, and 0.8 per cent identified their ethnic group within the 'Black, Black British, Black Welsh, Caribbean or African' category. In 2021, 4.4 per cent of Swansea residents identified their ethnic group within the "Asian, Asian British or Asian Welsh" category, and 1.2 per cent identified their ethnic group within the "Black, Black British, Black Welsh, Caribbean or African" category. The dataset offers the opportunity to explore these service users' homelessness further. The large sample sizes in administrative data mean that this relationship could be explored further, as often in survey research, ethnic minority categories are combined because of small group sizes. The experience of those with different ethnic backgrounds must not be conflated. This contributes to the evidence gaps and future research could utilise this data to focus on the gaps in knowledge about the experiences of 'Black, Black British, Black Welsh, Caribbean or African' and 'Asian, Asian British, Asian Welsh' PWEH.

5.3.2 Using administrative data to address the distortion of homelessness

If homelessness research predominantly focuses on chronically homeless people, then this influences public, political and policy thinking. This study draws on Gowan's (2010) conceptualisation of homelessness around sick talk, sin talk and system talk. These were developed to show how research evidence and policymakers can work hand in hand to reinforce or challenge the narratives of homelessness as sickness, sin or due to the system. Each talk represents a structure of meaning, intention and logic that imbues homelessness with particular characteristics. Who is seen to be homeless matters because this shapes the strategies for homelessness alleviation and prevention deployed, and Gowan (2010) shows how research is not undertaken in a vacuum outside of policy or political opinion. Research on homelessness plays a key role here. This chapter has demonstrated how the decisions taken through the research process and the sampling location can radically change the type of homelessness presented in a research project. The homelessness discussed in the findings in this chapter differs from much of the literature, which is focused on episodic or chronic homelessness. This does not consider the temporality intrinsic to

homelessness. Researchers using a diverse range of methods have identified this temporality, exploring homelessness pathways (Anderson and Christian 2003; Clapham 2003; Mayock et al. 2011) or testing a typology of homelessness duration (Kuhn and Culhane 1998; Kim et al. 2006; Aubry et al. 2013). Both the pathways approach and the quantitative data-driven approach to homelessness duration have in common that they show that for most people, homelessness is a temporary period.

The prominence of the issues known to be linked with chronic homelessness in the literature is then compounded by the sampling location used for many research studies. Most studies, including most of the robust largescale studies regularly referred to, such as Kuhn and Culhane (1998), Benjaminsen and Andrade (2015), and Aubry (2013) use temporary accommodations, shelters or hostels, as their study site. Within ETHOS, hostels and shelters are only one way of defining homelessness (Edgar and Meert 2005). Legislation in Wales and across the UK defines homelessness much more broadly. Shelters and hostels generally are part of a broader homelessness archipelago serving single-person households. This means that research with people experiencing homelessness in shelters or hostels is unlikely to include or be relevant to the experiences of many people experiencing homelessness in the UK. This discussion is not to say that research with people in entrenched homelessness is not worthwhile or valuable, but that homelessness, particularly in the UK, is far more heterogenous than many literature reviews would reveal. The results discussed in this chapter show the range of households approaching statutory homelessness services.

There are gaps in the evidence base, as few quantitative studies on homelessness in the UK exist. So, for robust quantitative analysis of homelessness, international studies are often drawn on. Whilst comparative international analysis can be helpful in building evidence, it is important to be mindful of the impact of geography on the findings. It is known that national welfare regimes have implications for homelessness in multiple ways. This is partly due to the intersections between the housing market and the social welfare safety net. For instance, whilst the Danish homelessness count takes an expansive view of homelessness in national statistics, drawing on counts from multiple agencies and including those in temporary housing arrangements (Benjaminsen et al. 2020), influenced by the social democratic welfare system (Esping-Andersen 1993). There are further critical differences beyond welfare regimes between nation-states and these may include other aspects of political culture not

captured in the welfare regime typology (Fitzpatrick and Stephens 2014). For example, Collins (2010) finds key differences in the policy responses and empirical numbers of homelessness across Canada and New Zealand.

Conversely, much of the quantitative research on homelessness in Denmark draws on data linkage from the shelter service administrative data resource. It, therefore, draws on a much narrower definition of homelessness than the national count. As these commonly referenced studies have the largest sample sizes and most robust methodologies, they are typically drawn upon to build our understanding of homelessness. However, more precision is required in understanding the meaning of homelessness within these studies and the significant consequences of how homelessness is understood, particularly the methods of management chosen, for instance if the focus is on those in low threshold services or Housing First. Within this study, and generally in Wales under the legislation, homelessness is broadly defined according to the ETHOS typology. It includes those who are in inappropriate housing or threatened with homelessness as well as those who are shelterless. The analysis in this chapter has demonstrated that homelessness in the UK has a distinct character, and care must be taken in international comparisons.

5.3.3 The complexities of administrative data analysis

Whilst this chapter has shown what is possible with administrative data analysis in exploring the heterogeneity of homelessness, it does not include all person experiencing homelessness, and there were many data quality issues. A quarter of the homelessness events could not be linked to a person across the matching fields with high enough confidence (above 50 per cent). This is similar to Richter et al. (2021) who used eviction data in their data linkage project and had a similar match rate due to data quality. However, outside of homelessness research, other studies pseudonymised using the same process through SAIL had a better match rate, either because they could be deterministically matched through an NHS number or had much higher accuracy when probability matched. For example, health data held by the SAIL Databank typically has an accuracy of 99.85 per cent (Lyons et al. 2009). The data that could not be matched was because of issues with either first and last name, date of birth or postcode, and it can be hypothesised that the matching problems are at least partly due to data entry issues. However, the comparison between the raw and final datasets does not indicate that pseudonymisation introduced bias, meaning

there was no clear pattern to the data that was not matched. It could be hypothesised that data was poorer, and therefore not matched, for applications which frontline staff anticipated would not progress to a full application under priority need. This could be due to the extensive resource pressure frontline homelessness service staff face (Cowan et al. 2006; Alden 2015).

There was also a lot of missingness in the data, which impacted the utility of many variables. One of the most extensive limitations was that the coding of outcomes and entitlements were inconsistent and appeared to change frequently as a result of legislative and practice amendments. This meant data interpretation was extremely challenging. Many of the reported categories were not collected in the same way for all the homelessness events; this meant that analysis of most of the variables that contained substantive information about homelessness would likely be biased due to the inconsistent coding. These challenges in how the data is collected echo those found by Thomas (2020) in his review of homelessness data collections in Wales.

5.4 CHAPTER CONCLUSION

This chapter set out to explore the process of creating a research-ready dataset to explore the heterogeneity of homelessness. This chapter is both methodological and empirical to focus on the first research objective on the feasibility of using homelessness administrative data. The content of this chapter also reflects some of the complexity in using administrative data for research; the messy, subjective nature of secondary data analysis necessitates reflections on the research journey, which do not neatly fit into methodology and results. The chapter has focused on the process of creating a homelessness dataset so that PWEH can be identified through data linkage with the A&E and police data. This chapter has outlined the issues with data quality which impacted the results. The descriptive results discussed have shown the value that locally bounded administrative data analysis can bring to the evidence base on homelessness. This data source provides information on a much broader spectrum of homelessness, including households with dependants, women and PWEH from ethnic minority backgrounds. The analysis in this chapter demonstrates how research can start to move beyond the challenges O'Sullivan et al. (2020) raised on the distorting tendencies of some cross-sectional studies and the inadvertent lack of focus on transitional homelessness and those most likely to experience it. The findings in this

chapter provide proof of concept for how to use a data source, administrative data, that can be used to robustly and quantitatively explore the experiences of some of the under-researched aspects of homelessness. It has shown that statutory homelessness data can be matched for future linkage to allow the exploration of more substantive questions in the following chapters. This evidence will build on key administrative data studies done by Kuhn and Culhane (1998), Benjaminsen and Andrade (2015), and early data linkage work in the UK by Waugh et al. (2018).

6 Assumptions of sickness: the ordinariness of homeless people's emergency healthcare use

6.1 INTRODUCTION

Sick talk is frequently used to characterise people experiencing homelessness, and the links between poor health, increased demand on hospital emergency departments (A&E) and homelessness are well established in the literature. Sick talk is the attribution of homelessness to personal pathology and, for Gowan (2010), calls for a therapeutic ‘remaking of the self’ to solve whatever pathology triggered homelessness. However, homelessness is also known to be complex, encompassing a range of living situations and associated with diverse groups. Despite a handful of recent UK-specific studies focusing on the A&E use of a person experiencing homelessness (Waugh et al., 2018; Song et al. 2021), few have been able to analyse the health needs and A&E use of PWEH in the UK context. These evidence gaps have significant implications for our understanding of the healthcare use of homeless service users. This Chapter will explore the complex relationship between health and homelessness by using Emergency Department data for an entire local authority linked to local authority housing services data. It will explore the prevalence of particular conditions and interactions with services, comparing them to the general population, which this thesis defines as: ‘not known to homelessness services’ or NKHS. The Chapter first describes the process of creating the two cohorts, PWEH and NKHS. It then compares the interactions using bivariate analysis. Next, the interactions of matched pairs of NKHS and PWEH are analysed.

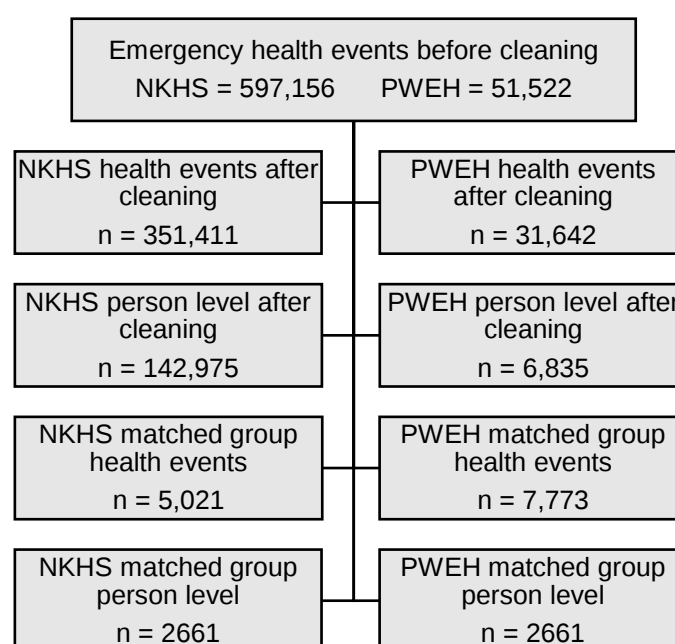
The final analysis theme is frequent attendance, which the literature identifies as one of the primary ways people experiencing homelessness interact differently with A&E

(Moore et al., 2007; Ku et al., 2010; Hwang et al., 2005). It is hypothesized that homelessness may be a predictor of frequent attendance therefore the multivariate relationship was analysed using Poisson regression. Since attendance frequency is a count variable with a skewed distribution, Poisson regression was chosen as the most appropriate statistical method. The model evaluates the influence of several explanatory variables available within the A&E dataset, including age, sex, arrival mode, triage urgency, and self-discharge status. As this thesis relies on administrative data, the analysis is limited to variables already present in the dataset unless linkage is undertaken. Consequently, not all variables known to influence the relationship can be explored. Homelessness status is the key variable of interest and is used as an independent variable in both Poisson regression models, with PWEH and NKHS included in the analysis. The broad, theory and data-driven definition of homelessness must be carefully considered, as individuals not classified as homeless under the evolving legislative landscape at the time of data collection may still be coded as homeless within the sample. The regression model utilizes a matched control group of those not known to homelessness services to further reduce the impact of confounders, such as age and gender, that could influence the results. The Poisson regression model uses each individual's total number of attendances as the dependent variable, controlling for independent variables such as self-discharge without consent or triage code contribute to higher attendance rates, as indicated by the literature review. Finally, the chapter revisits the evidence and analytical framework, drawing out the significance of the empirical findings.

6.2 ANALYSIS

Each section will draw on different numbers of observations depending on the aims of the analysis undertaken. Figure 11 provides an overview of how the data is discussed. Where PWEH and NKHS groups are compared, they were compared using Chi Square Goodness of Fit Tests to assess whether the proportions were equal between the groups. However, as discussed in the Methodology, the sample sizes mean that significance testing should be considered as only part of whether results are important or meaningful. Effect size is reported to give an indication of the size of the effect.

Figure 11: Overview of data set-up for analysis



6.2.1 Exploring the health interactions for all people who have experienced homelessness

This section outlines the A&E interactions of the full cleaned populations of both PWEH and NKHS. Overall, both groups attended A&E most often for non-urgent reasons. The "see and treat" category is a system designed to efficiently manage lower-priority patients, reducing the long waits typically experienced by those with less serious illnesses or injuries under a strict triage system (Rogers et al., 2004). Patients in the "see and treat" category can be attended to by either a nurse or a doctor. However, "see and treat" is not always implemented. When it is absent, the standard triage priority system is used instead. In a traditional triage setup, lower-priority patients must wait until all higher-priority cases have been seen. As the system is not always implemented, these interactions are grouped with non-urgent cases if recoding is necessary due to small group. PWEH who had experienced homelessness were slightly more likely to attend A&E in all other more urgent triage code categories ($X^2(5, N=383,053) = 3800, p = <.001$). This shows an overall small effect size ($V = 0.1$) as it is above the convention for a small effect. Table 28 shows that the proportion of attendance for PWEH was 5 per cent lower in the 'see and treat' category.

Both groups had similar proportions across the arrival modes, ($X^2(6, N=383,053) = 8500, p = <.001$) with an overall small effect size ($V = 0.15$). Figure 12 shows that the most common arrival mode was in a private motorised vehicle and the second most common was an ambulance. However, PWEH more frequently arrived in a police car (3.5 per cent vs 0.3 per cent) and an ambulance (33.9 per cent vs 21.3 per cent) and less frequently in a private motorised vehicle (52.8 per cent vs 63.4 per cent).

The frequency across the recorded injury types were similar for both groups ($X^2(9, N=383,053) = 1900, p = <.001$). The effect size for the association between homelessness status and injury type was below the Cramér (1946) convention for a small effect ($V = 0.1$), at $V = 0.07$. Table 29 shows that there are very small differences between the frequency of attendances for falls, trips, and slips, as NKHS have a higher frequency of these attendances (4.3 per cent vs 7.7 per cent). There are also very small differences in the frequency with which PWEH attend for blunt force injuries (3.38 per cent vs 1.26 per cent).

Again, there were similar proportions across the discharge routes for both groups, with the effect size ($V = 0.12$) exceeding the Cramér (1946) convention for a small effect. Figure 13 shows that the most frequent discharge route was 'referral to the GP', and the second and third most frequent were 'no planned follow up' and 'admitted to the same health board but a different hospital' ($X^2(9, N=383,053) = 5300, p = <.001$). While 'self-discharge without consent' was not one of the most frequent discharge routes, it emerged from the literature review as a potential way of identifying those with more chaotic lifestyles and unmanaged healthcare. People who had experienced homelessness were more likely to 'self-discharge without consent' (13.2 per cent vs 4.5 per cent).

Table 28: PWEH and NKHS, full clean groups, triage category

Category	NKHS (per cent)	PWEH (per cent)
Priority one – Immediate	0.02	0.08
Priority two – Very urgent	0.26	1.13
Priority three – Urgent	0.71	3.62
Priority four - Standard	1.23	2.33
Priority five - Non-urgent	0.02	0.15

See and treat	97.75	92.69
Total (attendances)	351,411	31,642

Figure 12 PWEH and NKHW, full cleaned groups, arrival mode (n=383,053)

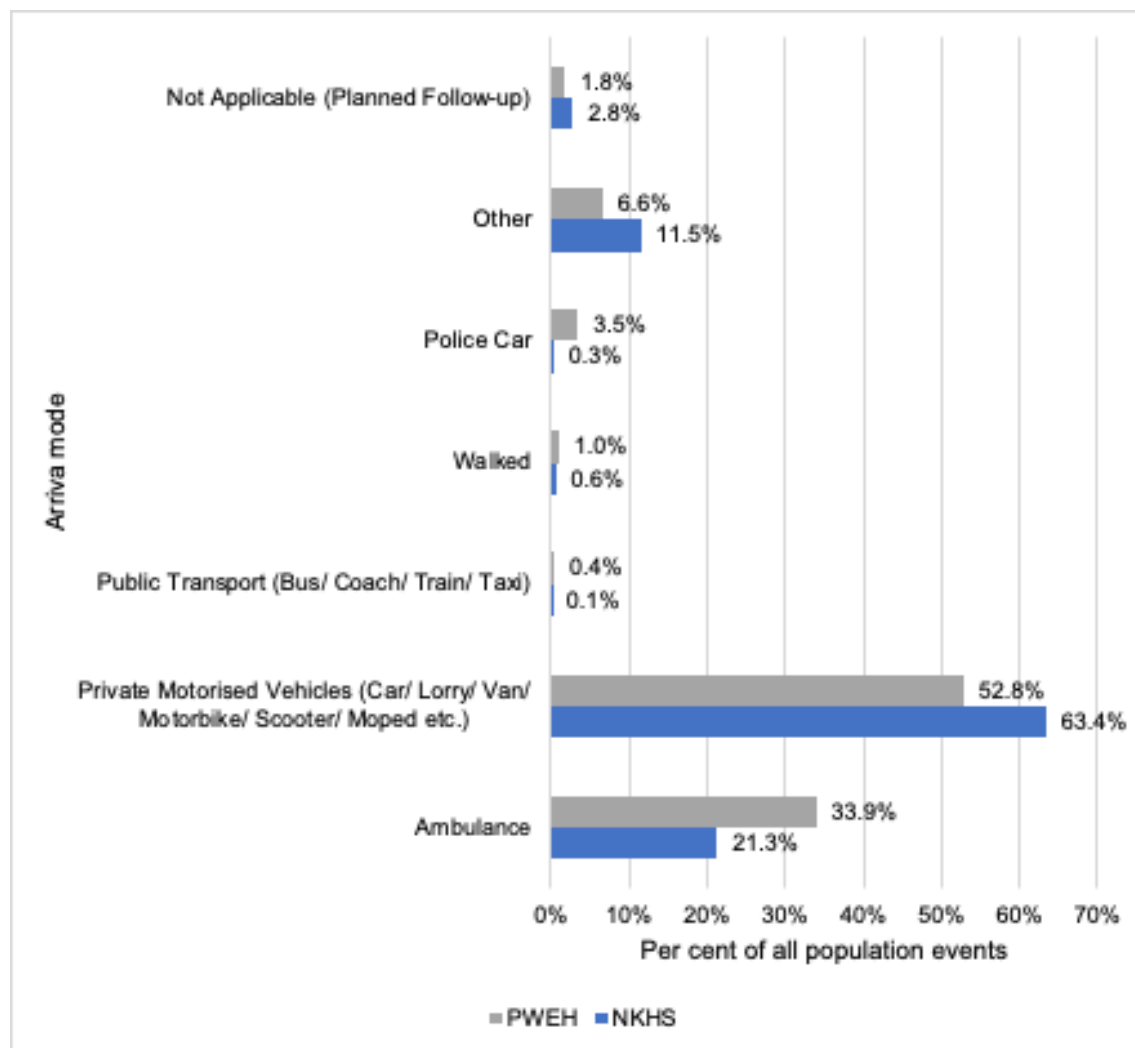
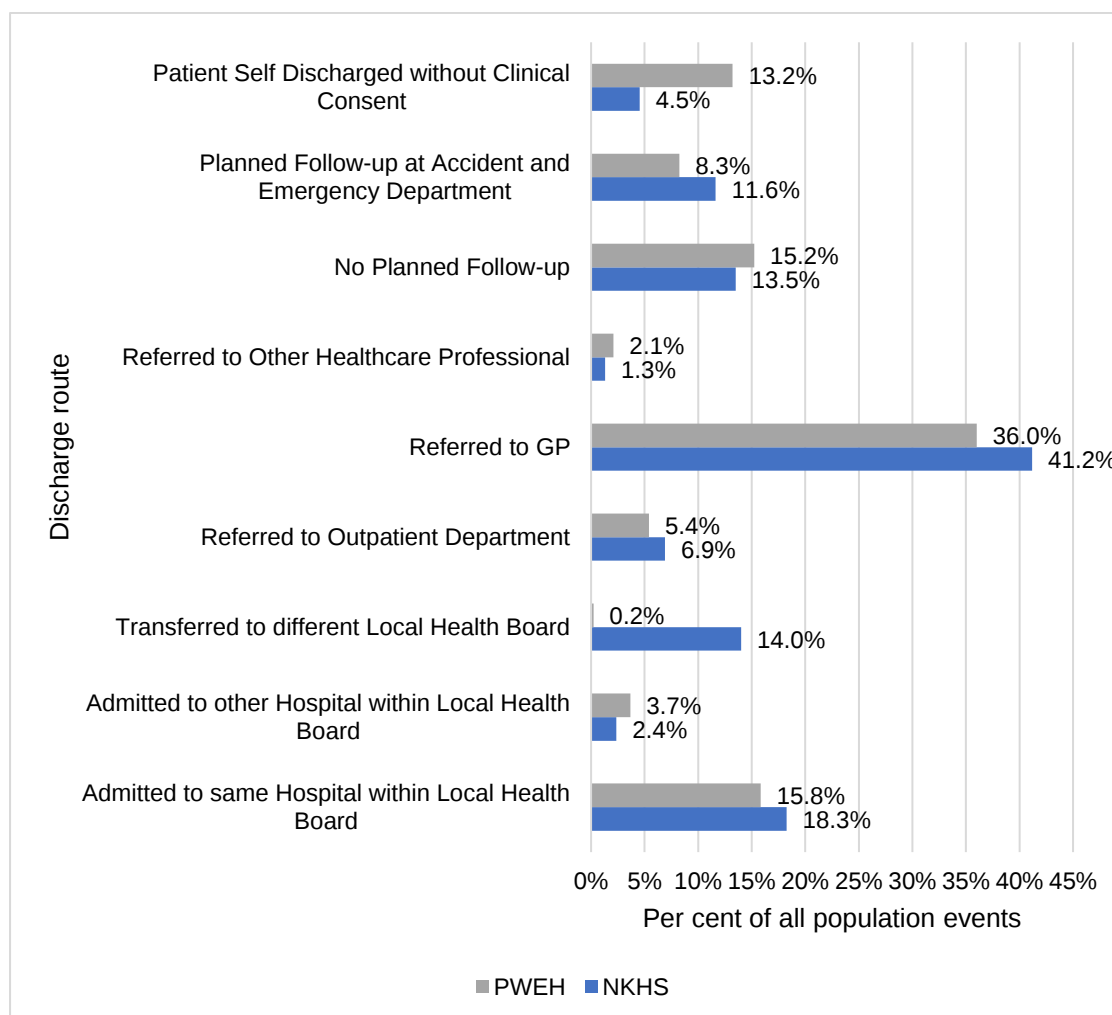


Table 29 PWEH and NKHW, full cleaned groups, injury type

Category	PWEH (per cent)	NKHS (per cent)
Fall/slip/trip	4.34	7.7
Blunt force/blow from person/animal/machine	3.38	1.26
Crushing injury	0.12	0.19
Stabbing	0.08	0.01
Cut with sharp object	0.34	0.2
Poisoning/Overdose	2.54	1.16
Burning/scalding	0.56	0.77

Other	57.52	57.67
Not Applicable – e.g., non-injury	13.98	14.42
Not Specified	17.14	16.63
Total (attendances)	31642	351411

Figure 13 PWEH and NKHW, full cleaned groups, discharge route. This chart is excluding 'died' because of small numbers skewing chart (less than 1%) ($n=383,053$)



6.2.2 Emergency healthcare use of a cohort of homeless service users and a matched control group

Next, the results from the matched pairs of PWEH and NKTH will be discussed. This section will first discuss the bivariate analysis of differences between the two groups, drawing comparisons of the attendance types at A&E. The analysis will be used to inform a Poisson regression model exploring repeat attendance at A&E.

When looking at the number of attendances for each group, the PWEH group had 7,773 attendances at A&E and the NKTH control group had 5,021. The homeless

group had a median number of attendances of 4 over the study period, from the start of the financial year in 2012 to the end of the financial year in 2016. While the non-homeless cohort had a median number of attendances of two.

Similarly, to the pattern established in the full population analysis, PWEH attended A&E for more serious medical events, although, a majority of attendances for both the control and homeless group were for non-serious reasons ($\chi^2(5, N=12,794) = 97.9805, p = <.001$). However, the effect size for the association between homelessness status and triage category was below the convention for a small effect ($V=0.1$) at 0.09 (Cramér 1946). Due to disclosure risk in reporting for triage code for the matched groups, some categories were combined: immediate was combined with very urgent and non-urgent combined with see and treat. Four per cent of the attendances for PWEH are categorised as immediate, very urgent, and urgent. In contrast, just over 1 per cent of the attendances for the control group were for the most urgent triage categories. Moreover, the control group had slightly more attendances categorised as non-urgent or see and treat, see Table 30.

When analysing arrival mode ($\chi^2(6, N=12,794) = 542.0770, p = <.001$) and discharge from A&E ($\chi^2(9, N=12,794) = 143.3199, p = <.001$), both had significant differences. Analysis on the association between homelessness status and arrival mode ($V=0.21$) and homelessness status and discharge ($V=0.11$) from A&E exceeded the Cramér (1946) convention for a small effect size ($V=0.1$). A small effect size in this context suggests that while homelessness status does influence arrival mode and discharge from A&E, other factors may play a more significant role. Figure 14 shows that the PWEH cohort was more likely to arrive by ambulance (28 per cent vs 14 per cent) or police car (three per cent vs 0.4 per cent). Both PWEH and NKTH arrived by personal vehicle most often, however the control group 10 per cent more frequently arrived by car than PWEH (57 per cent vs 68 per cent). Figure 15 shows that both groups were also most frequently discharged from A&E to their GP. However, proportionally fewer PWEH were discharged to their GP (39.26 per cent vs 42.26 per cent). The PWEH group were also more likely to discharge without consent (10.8 per cent vs 6.01 per cent).

Table 30 PWEH and matched control, triage category

Category	Homelessness service user (per cent)	Control group (per cent)	Total (per cent)
Priority one - immediate and Priority two – very urgent	0.95	0.32	0.7
Priority three – urgent	3.22	0.88	2.3
Standard	2.1	1.75	1.96
See and treat and non-urgent	93.73	97.05	94.94
Total (attendances)	7,765	5,017	100

Figure 14: PWEH and matched control, arrival mode (control group n= 5020, homelessness service user group n = 7773)

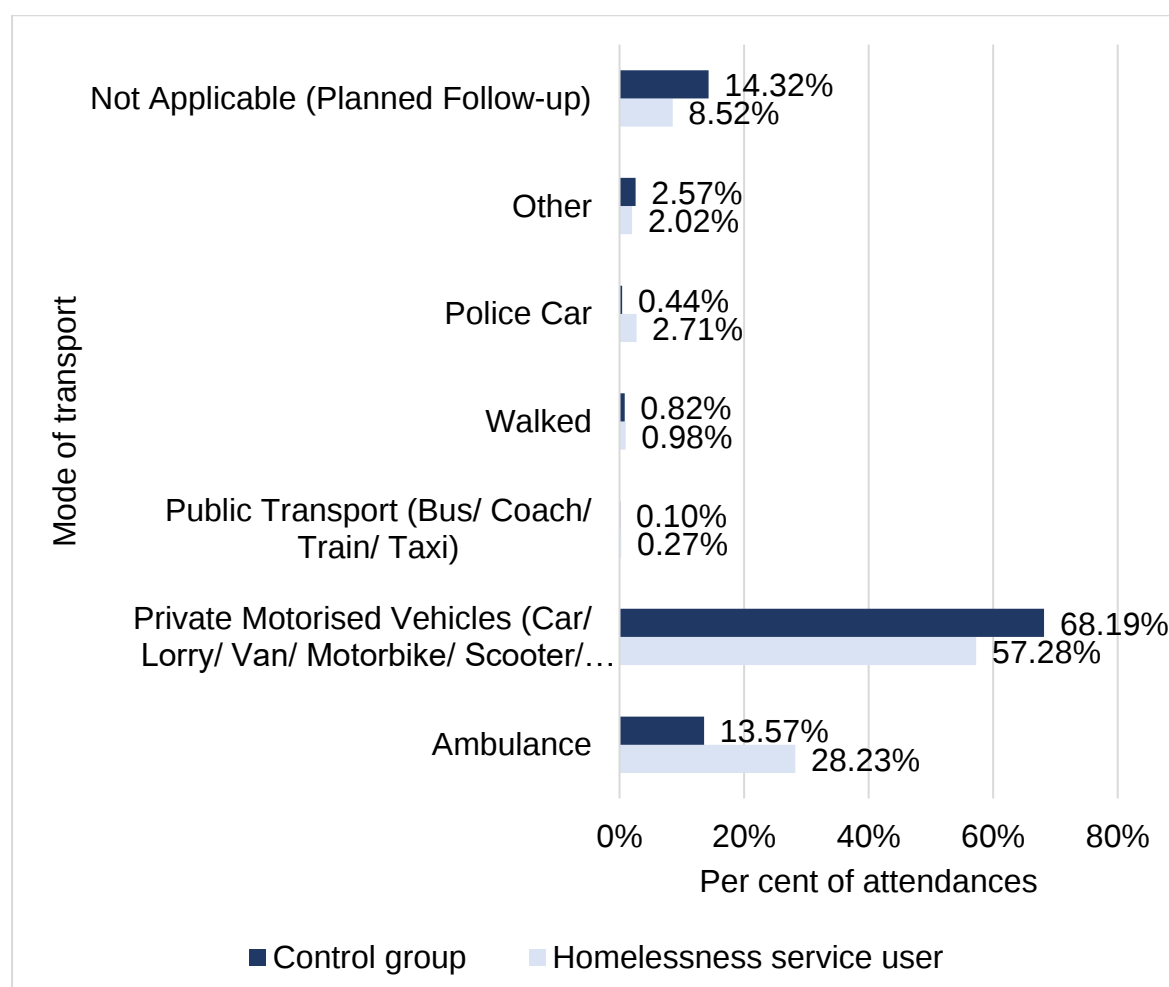
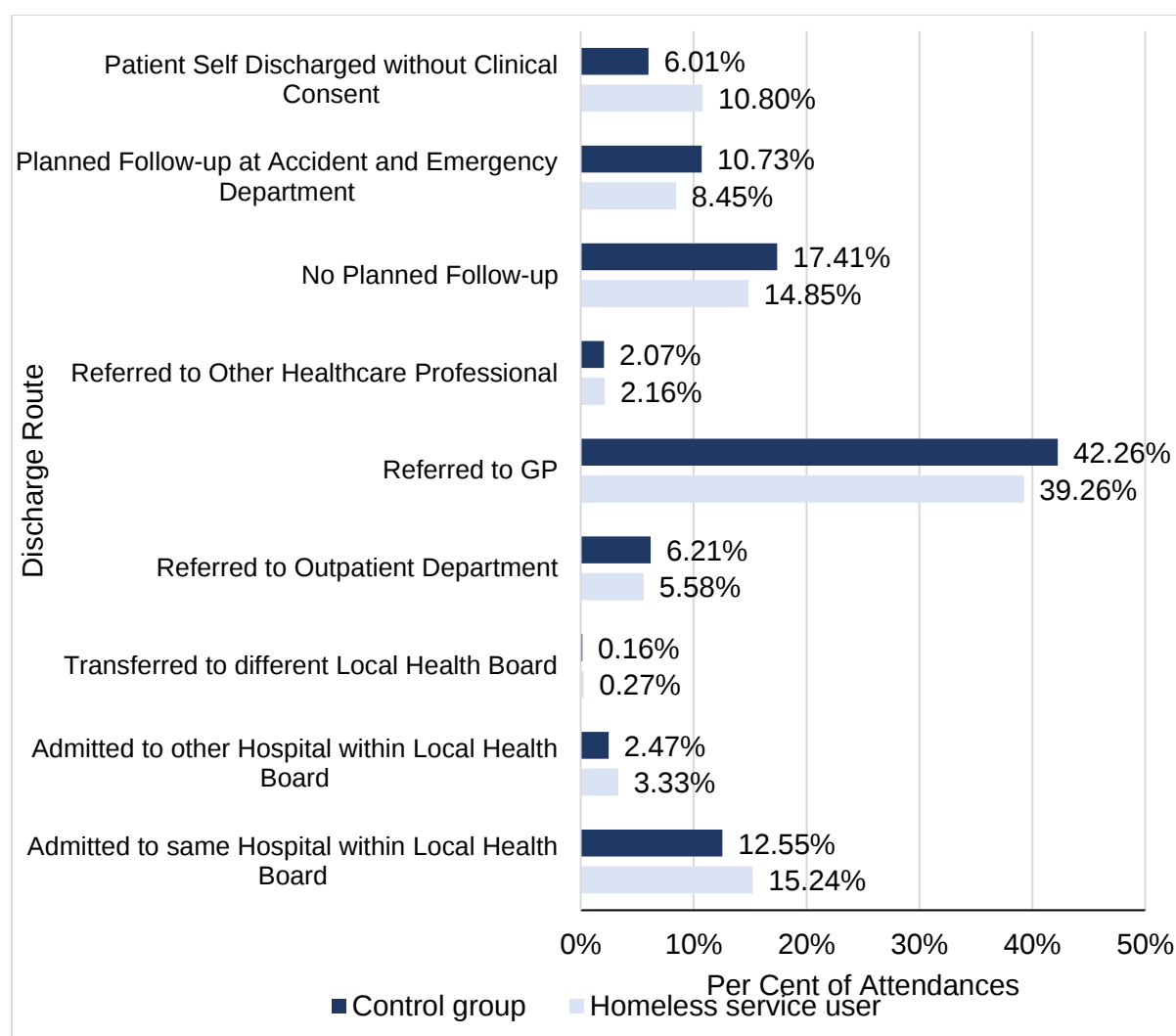


Figure 15: PWEH and matched control, discharge route. This chart is excluding 'died' because of small numbers skewing chart (less than 1%) (control group n= 5020, homelessness service user group n = 7773)



There are no clear differences between the types of injuries the two groups present to A&E with ($\chi^2(8, N=12,794) = 66.6590, p = <.001$), and the effect size is below the Cramér (1946) convention set for a small effect size ($V=0.1$) at $V=0.07$. Table 31 shows that the PWEH group is slightly more likely to present for an injury rather than a non-injury (18 per cent vs 16 per cent) and slightly more likely to present with OD/poisoning (two per cent vs one per cent) or blunt force injuries (three per cent vs two per cent). In comparison, the non-homeless group are slightly more likely to attend for falls, trips or slips. However, these differences are very small compared with the differences in other categories of interest that emerged through the literature review as indicative of unmet health needs. It was hypothesised that it would still be important to control for older age within the regression model.

Table 31 Type of injury by homelessness and control groups – per cent. Person level

Category	PWEH	Control	Total
Ambulance	28.23	13.57	22.47
Private Motorised Vehicles (Car/ Lorry/ Van/ Motorbike/ Scooter/ Moped etc.)	57.28	68.19	61.56
Public Transport (Bus/ Coach/ Train/ Taxi)	0.27	0.1	0.2
Walked	0.98	0.82	0.91
Police Car	2.71	0.44	1.82
Other	2.02	2.57	2.24
Not Applicable (Planned Follow-up)	8.52	14.32	10.79
Total (n)	7,773	5,020	100

A Poisson regression model was used to better understand the relationship between homeless service use and event counts of visits to A&E the counts are a person's total number of attendances over the study period, financial year 2012 and 2016. This model tested the hypothesis that being in the PWEH group increased attendance at A&E, whilst controlling for other factors. The variables entered into the model were homelessness service involvement, age, sex, triage category, alcohol involvement, arrival mode (ambulance, police car, or personal vehicle), and whether the patient was discharged without consent. Including these variables addressed potential confounding factors to isolate the unique association between homelessness service interaction and A&E attendance. The following sections discuss the reasons for including variables in the model.

Person Known to Homelessness Services: Homelessness is central to the research question, as the model aims to explore its association with frequent A&E attendance. A range of evidence suggests that interaction with homelessness services is associated with more frequent visits to A&E (Moore et al. 2007; Ku et al. 2010; Hwang et al. 2005; Chamber et al. 2013; Fazel et al. 2015).

Age: Age can determine frequency of attendance to A&E (Boh et al. 2015). Including age ensures these patterns are accounted for, preventing confounding effects. Age may also interact with homelessness status, as older individuals who have experienced street homelessness tend to have significantly greater health needs due to associated risks (Ku et al. 2010; Chamber et al. 2013).

Sex: Sex-based differences in healthcare-seeking behaviour can be observed in the general population and for homeless service users (Chamber et al. 2013).

Arrival Mode: Bivariate analysis established that those known to homeless services and the control group exhibited differences in how they arrived at A&E. The mode of arrival (ambulance, personal vehicle, or police car) may indicate the urgency or severity of the patient's condition. Ambulance services are triaged based on call handlers understanding of the urgency. Ambulance arrivals may therefore signal acute health problems that may independently drive frequent attendance (Anselmi et al. 2017). Arrival by police car is associated with homeless and more comorbidity (Wardrop et al. 2022).

Triage Code: Triage categorization reflects the urgency of a patient's condition, and bivariate analysis demonstrated differences in attendance frequencies between the two groups. Immediate and urgent triage codes are used where patients either require lifesaving intervention or are seriously ill, and as such may imply more severe health events. This may be associated with repeated visits due to underlying health issues—a known confounder in frequent attendance for PWEH (Fazel et al 2015). Including triage code helps adjust for the relationship between severity and A&E utilization.

Self-Discharge Without Consent: Bivariate analysis revealed differences in this variable. In other populations, self-discharge without consent is linked to more frequent A&E attendance, as patients who leave without completing treatment often have unresolved health needs, leading to repeat visits (Henson and Vickery 2005; Ibrahim et al. 2007; Yogendran and Kraut 2013). Among individuals known to homelessness services, it was hypothesized that self-discharge might be related to unmanaged health conditions, which the literature identifies as a risk factor for frequent emergency healthcare use among homeless populations (Fazel et al., 2015).

Alcohol Involvement: In the general population, alcohol misuse can be associated with A&E attendance (Charalambous 2002). Including this variable helps account for the contribution of alcohol-related cases to overall attendance patterns. Additionally, alcohol misuse is associated with greater health needs among people who have experienced homelessness, either due to injuries sustained while intoxicated or illnesses related to long-term alcohol misuse (Johnson et al. 1997; Shinn et al., 1998; Allgood and Warren, 2003; Early, 2005; Johnson and Chamberlain, 2008).

For non-demographic variables that could vary with each A&E visit, a flag was created if the individual had ever experienced that condition. For example, if they had ever been discharged without consent at any of their A&E visits.

The incident rate ratio can be interpreted to show the rate at which the dependant variables influenced A&E attendance. An IRR of over one shows that the event is higher in 'exposed group' than the 'reference group', whilst a IRR of below one shows the converse. An IRR of one shows no difference between the groups, meaning the dependent variable does not influence the rate of A&E attendance.

When looking at the results of the Poisson model, holding all other explanatory variables constant, homeless service users have double the rate of attendance at A&E (IRR 2.06, 95% CI [1.99,2.13],). The association between homeless service use and number of A&E visits was significant ($p < 0.001$).

Those who have had at least one attendance triaged as standard and/or immediate, urgent, or very urgent have higher rates of attendance, and these effects are statistically significant. The more serious triage codes have a bigger impact on attendance. Individuals triaged as standard have an IRR = 1.27 (95% CI [1.08, 1.50], $p = 0.005$), while individuals triaged as immediate, urgent, or very urgent have an even greater rate of attendance (IRR = 1.91, 95% CI [1.69, 2.15], $p < 0.001$).

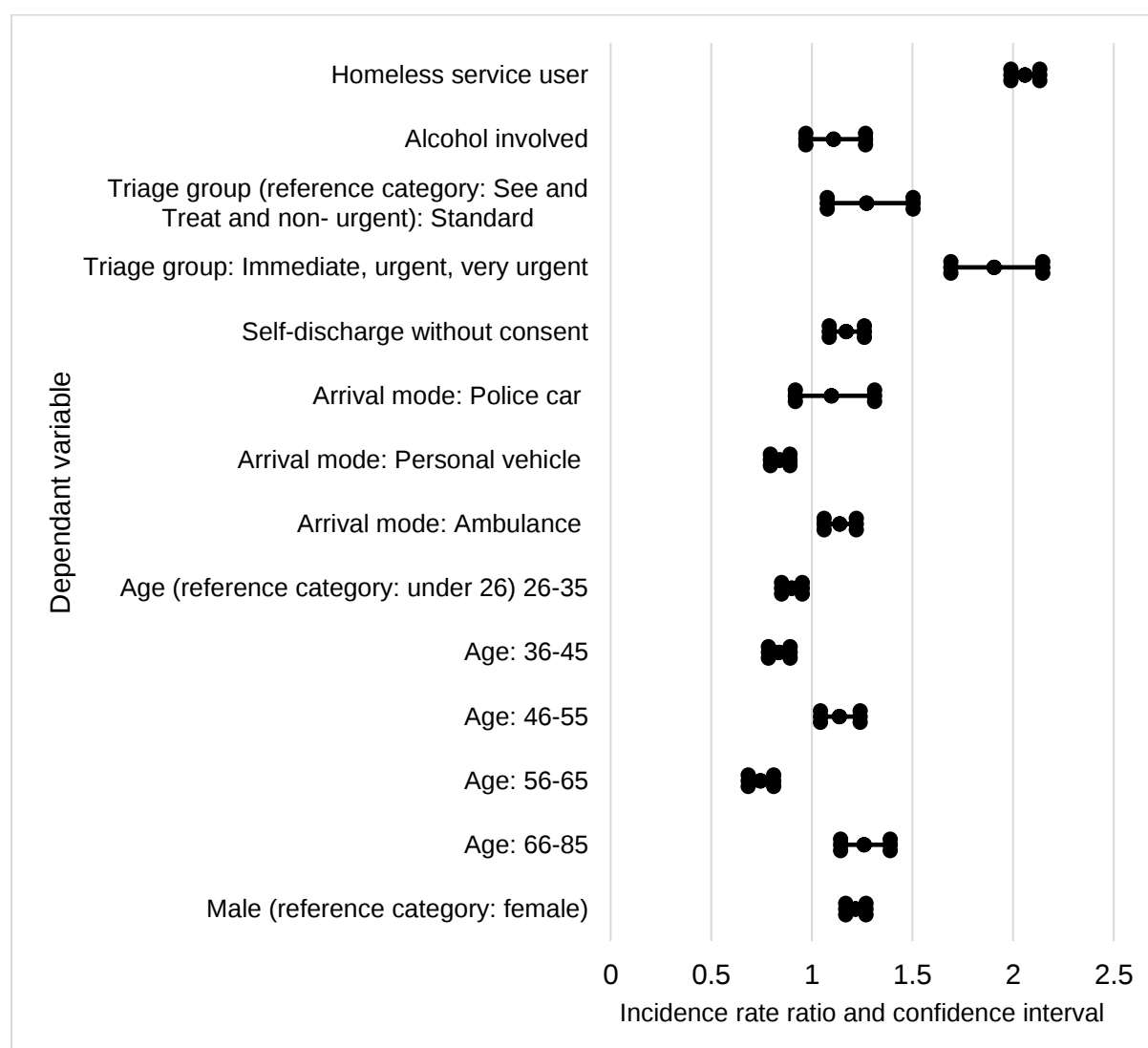
Possibly also reflecting the impact of more serious health needs, individuals who attended in an ambulance had a significantly higher rate of attendance compared to the reference category (IRR = 1.14, 95% CI [1.06, 1.22], $p < 0.001$). Other factors associated with greater underlying health needs also increased rates of attendance. Individuals who self-discharge without consent have an IRR = 1.17 (95% CI [1.09, 1.26], $p < 0.001$).

Finally considering the demographic variables available, male patients had a significantly higher rate of A&E attendance compared to females (IRR = 1.22, 95% CI [1.17, 1.27], $p < 0.001$). Compared to individuals under 26, those aged 26–35 had a lower rate of attendance (IRR = 0.90, 95% CI [0.85, 0.95], $p < 0.001$), as did those aged 36–45 (IRR = 0.84, 95% CI [0.78, 0.89], $p < 0.001$) and 56–65 (IRR = 0.74, 95% CI [0.68, 0.81], $p < 0.001$). In contrast, individuals aged 46–55 (IRR = 1.14, 95% CI

[1.04, 1.24], $p = 0.004$) and 66–85 (IRR = 1.26, 95% CI [1.14, 1.39], $p < 0.001$) had higher rates of attendance.

However, attendance for other factors associated with multiple exclusion homelessness (Fitzpatrick et al. 2011) such as injuries related to drugs or alcohol or attendance by police car were not significant predictors of increased A&E attendance when holding the other explanatory variables constant. Nonetheless, they were retained in the model to control for the relationships established by literature.

Figure 16 Poisson regression to analyse whether being in the PWEH group increased number of attendances at A&E when controlling for other variables known to increase attendance



6.3 DISCUSSION

This chapter has examined the relationship between homelessness and emergency healthcare use, primarily drawing on the lens of Gowan's (2010) sick talk. This study has explored attendance at A&E using several methodologies. The first empirical section compared the demographics and clinical reasons for admission, discharge, and arrival routes for the full population, comparing PWEH with NKHS. Next, to control for the confounding effects of age and gender, two matched control groups were created from the PWEH and NKHS full population data sets. Descriptive statistics were then used to explore relationships in the matched control groups. Finally, inferential methods were used to explore frequent attendance at A&E as one (of the many possible) key issues that emerged through the exploratory descriptive analysis.

There is substantial literature dedicated to analysing the health, particularly emergency healthcare use, of homeless service users and of all three 'talks' Gowan (2010) draws on, sick talk is the primary narrative applied to the management of homelessness in robust quantitative research, often drawing on administrative data, on the health of people who have experienced homelessness. For Gowan (2010), the prevalence of sick talk is not because of greater levels of 'sickness' for those who have experienced homelessness. She identifies how the growth of the homelessness archipelago accompanies a proliferation of studies influenced by the medicalised notion of homelessness and draws a link between how researchers and policymakers define homelessness via 'talks' and how these talks then influence all aspects of the homelessness archipelago, from services to research studies to legislation.

The main body of empirical literature that aligns with the concept of 'sick talk' is as follows: The reviewed evidence found that individuals with experience of homelessness (PWEH) required support to address a range of healthcare needs and conditions (Salit et al. 1998; Ku et al. 2010; Chambers et al. 2013). Furthermore, their poorly supported health often led to frequent presentations at A&E (Moore et al. 2007; Ku et al. 2010; Hwang et al. 2005). Literature often focused on the 'dual diagnoses' of mental ill health and substance or alcohol misuse (Padgett et al. 2011). There is a particular focus on the use of emergency medical services by PWEH and evidence points to PWEH using A&E rather than primary care due to a range of barriers including chaotic lifestyles, competing priorities and practical issues and attitudinal

barriers from front-line services (Crane and Warnes 2001; Neale 2001; Neale 2008; Canavan et al. 2012; Whitley 2013). The literature review also found that there was a strong association between poor health and emergency service use (Chambers et al. 2013) and the PWEH who used emergency services more often were more likely to have worse physical health generally, as defined by having a higher burden of serious and complex health conditions (Fazel et al. 2015). Within North American-centric literature the conditions reported were; unintentional injuries, falls, cold, burns, poisoning, victimisation by assault and sexual assault, brain injuries, and self-harm (Salit et al. 1998; Ku et al. 2010). In the UK, in evidence from a cohort identified by homelessness recorded in health administrative data, the three most common long-term health conditions identified were: alcohol dependency, depression and drug dependency (Song et al. 2021).

When examining the bivariate findings regarding the reasons for presentation at A&E, the results of this study differ from the evidence presented in large-scale North American quantitative studies. Nevertheless, these findings must be contextualized by the definition of homelessness used, which was data-led and broad. This definition has some limitations, as the legal status of homelessness was difficult to determine from the available data. Instead, all individuals approaching services, including those seeking advice and support, were included. It remains unknown whether some households that ultimately did not experience homelessness were included in the final cohort used in this research. The specific types of injuries (such as poisoning and from assault) the prevalence of injuries as a reason for attendance were among the most reported themes in the literature review on A&E interactions for homeless service users. This research suggests that the injuries reported by the homeless and non-homeless groups have a similar incidence with very small differences and effect sizes below the limit set for a small effect. This was found in both matched group comparisons and population-level comparisons. Although injury type was not reported for all presentations, following the matching PWEH were slightly more likely to present for an injury rather than a non-injury. The largest difference in the population level analysis is for falls, trips, and slips, as PWEH are less likely to report these injuries. This is likely due to the demographic differences between the groups as this difference decreases in the matched analysis. Homeless people are slightly more likely to report an overdose or poisoning than the housed comparison group in both the population

level and matched groups. Moreover, although the numbers reporting blunt force injuries are a minority, homeless service users are slightly more likely to present at A&E for these (3% vs 2%). Some very small differences aside, this analysis has not found that most of those with lived experience of homelessness attend A&E for the reasons suggested in the literature that make a distinction from those NKHS. This evidence aligns with the findings on A&E usage in Waugh (2018), which utilizes a similarly broad definition of homelessness within a UK context. It suggests that, in the UK, A&E attendance patterns show many similarities between individuals experiencing homelessness and those who are not. Unlike other A&E-focused studies, such as Fazel et al. (2015), there was no notable prevalence of traumatic injuries, drug- or alcohol-related issues, or severe and complex health needs. However, Waugh (2018) also found evidence for greater health challenges for people who had experienced homelessness when exploring other health administrative data, something this study was not able to do. The implications of this will be explored in later

This chapter has closely examined A&E exits to analyse pathways for PWEH through emergency healthcare. The literature highlights the importance of seeing a local and trusted healthcare professional for overall health (Chambers et al. 2013). However, homeless individuals are less likely to use GP services than those in the NKHS group due to multiple barriers, including restricted access, attitudinal challenges, and practical issues, such as the inability to register without a fixed address (Gunner et al., 2019). Another barrier to good healthcare for PWEH, as identified in the literature, is the lack of follow-up treatment after discharge from A&E (Watson, 2014). Primary care service utilization is often used as an indicator of whether PWEH are managing their health in a similar way to the housed population. In this study, over a third (39.26%) of all PWEH attendances resulted in discharge to a GP, slightly less than the 42.26% observed in the NKHS group. Within the matched analysis, a small effect size was noted. The most common discharge route for both NKHS and PWEH was to the GP. Although the difference in GP referral rates between the two groups is small, this thesis suggests that PWEH may face different healthcare outcomes compared to NKHS, even if the disparity is less pronounced than some prior research has indicated. Compared with being referred to the GP and leaving emergency medical settings in a planned way, self-discharge from A&E is associated with more complex health needs. Research from North America found that self-discharge increased risks of re-

admission to hospital and more seriously, increased risk of mortality (Yogendran and Kraut 2013). Factors commonly associated with increased risks of self-discharge are alcohol or substance misuse and poor mental health (Doupe et al. 2017; Vallersnes et al. 2019). The rate of self-discharge varies between studies; a large-scale study in the US found self-discharge rates of 1.5 per cent over the course of one year. However, other studies report up to 3 per cent (Ibrahim et al. 2007). Ibrahim et al. (2007) found that older age, being female, higher level of income, and non–African American ethnicity categories were associated with a lower risk of self-discharge. There are few studies that focus on self-discharge in the UK; focuses on self-discharge after a self-harm diagnosis (Bennewith et al. 2005) and one uses data from a single hospital A&E, with a small sample size (Henson and Vickery 2005). Henson and Vickery (2005) found a rate of 0.5% self-discharge. Both studies find that taking illegal drugs and/or alcohol increases self-discharge risk. Bennewith et al. (2005) also found that among those who were admitted for self-harm, males were also at an increased risk of self-discharge.

In this thesis, self-discharge rates for both PWEH and NKHS are high compared to those reported in the literature. The analysis also revealed a small effect size. The highest rate of self-discharge in the literature was 3 per cent, whereas in this study the NKHS group had a self-discharge rate of 6.01 per cent and PWEH had a self-discharge rate of 10.8 per cent. The high rate for PWEH indicates a gap in the research evidence on self-discharge and homelessness. There is a lack of research on self-discharge from hospitals and where studies exist, they focus on specific groups such as those who have self-harmed or overdosed, none of the research reviewed as part of this analysis focused on the links between homelessness and self-discharge from A&E despite the common factors appearing to be associated with it. These findings further suggest that there may be evidence that a minority of PWEH face issues with access to appropriate healthcare, increasing risks of negative outcomes.

Before examining the implications of the findings on frequent attendance (FA), it is important to consider the underlying narratives present in large-scale quantitative epidemiological literature, which serves as the primary comparator for this thesis's research on emergency healthcare use among homeless service users. Despite an inconclusive evidence base, there is a re-occurring linkage between so called

'inappropriate' A&E attendance and homelessness (Han and Wells 2003). 'Inappropriate' use of emergency medical facilities is an ongoing concern within the medical literature (Ismail et al. 2013). The general arguments centre around misuse of time and resources in emergency medical settings that should be used on those with serious and urgent medical conditions, further pressure on an already overstretched workforce and a lack of appropriate follow up for the patients receiving primary care type support in an emergency medical setting (Sempere-Selva et al. 2001). This narrative can also be observed through the three talks of Gowan (2010), as one of the key ways the talks function are to make claims of deservingness. Gowan (2010) shows how on the surface, sick talk avoids the main assertions of deservingness as it avoids the concepts of morality intrinsic within sin talk, yet she argues that there is a magnetic binary when it comes to homelessness and sick talk can easily slip into considerations of morality or entitlements. This can be seen within the literature itself, where some epidemiological analysis on FA slips into this 'magnetic' trap when looking at data on who should be using the scarce resources in A&E.

This contrasts with evidence focusing on the structural barriers faced by people experiencing homelessness; evidence identifies that many reasons why a person experiencing homelessness might frequently attend A&E are related to societal or structural pressures meaning that health services are overstretched and unable to provide the support they wish too (Watson, 2014; Gunner et al. 2019). Specifically, these pressures are faced by mainstream health services but particularly felt by more specialist services designed to support homeless people with more complex needs (Jackson et al 2024). Moreover, evidence recognises that housing is key to good health and that structural pressures on the housing market and on this aspect of social welfare policy in the UK mean that poor quality housing can exacerbate health issues and make it harder for people to recover from them (Jackson et al. 2024).

As such, homelessness and frequent attendance at A&E have been explored frequently (Dorney-Smith et al. 2016; Cheallaigh et al. 2017; Waugh et al. 2018; Reilly et al. 2020). An Irish study found that people experiencing homeless attended A&E 20 times more than the housed group. In a study utilising administrative data in Scotland, the number of A&E attendances from homeless people were twice as high as the most deprived cohort control (Waugh et al. 2018). This study similarly found that people

known to homelessness services attended A&E far more frequently, with those known to homelessness services attending A&E at twice the rate of the non-homeless cohort (IRR 2.06, 95% CI [1.99,2.13], $p < 0.001$). The model controlled for age, sex, triage category, some arrival modes, drugs, alcohol and self-discharge without consent. Further research would be needed to explore this relationship in greater detail, as other epidemiological studies have identified specific injuries related to street homelessness that were not evident in this analysis. Overall, the relationship appears to be complex and multifaceted. It is not clear in the evidence base if the relationship identified between FA and homelessness is due to worse health, unmet health needs, barriers to effective healthcare or a combination of all of these factors (Crane and Warnes 2001; Neale et al. 2008; Canavan et al. 2012; Whitley 2013). As discussed previously, within the literature the individuals who used emergency services more often were more likely to have worse physical health generally, as defined by having a higher burden of serious and complex health conditions (Fazel et al. 2015). Many population-based studies indicate a strong association between poor health and emergency service use (Chambers et al. 2013). A challenge to the narrative of 'sick talk' requires sensitivity to the heterogeneity of experiences, as this research has suggested that there may be a small minority of those who interact with homelessness services, police services and the health services who have support needs that are not being met. It is proposed that this is group with higher support needs but that does not fit in the definition of multiple exclusion homelessness. Research is moving towards consensus on a definition of multiple exclusion homelessness, with recent quantitative research triangulating findings (England et al. 2022). The Poisson regression analysis tested available categories that are known to be part of MEH, within the three common threads: health issues and substance misuse; traumatic life events; and institutional interactions. This study could not include early life trauma or other trauma in PWEH lifetimes but could include any trauma for which medical attention was sought if it was in the study period. It also could not include experiences of care or imprisonment, although interactions with the police will go on to be discussed in the following chapter where many of these themes are further explored. Most commonly included in the definition of MEH are the dual diagnoses referred to throughout this chapter, substance misuse and mental ill-health. Poisson regression analysis found that being male and arriving by ambulance for health events in a more serious triage code category significantly predict FA. These factors are to some extent like those

associated MEH however other factors which would align more closely with the grouping including those 'complex high needs' areas of drug or alcohol attendance or arrival by police were not predictive of frequent attendance.

Why then, has this study found a more complex picture of attendance at A&E than commonly suggested in the literature in relation to the use of A&E services by people experiencing homelessness? One of the key reasons is the definition of homelessness deployed in much of the literature which focuses on shelterless or rough sleeping homelessness. This is also used in many of the quantitative analyses on health and homelessness as they use administrative data linkage capabilities from shelter registers. This may contribute to an overt focus in the evidence on the nature of homelessness and is further compounded by the challenge, identified by O'Sullivan et al. (2020), that much of the evidence on homelessness, nationally and internationally, is cross-sectional. Cross-sectional research is unable to account for the dynamic nature of homelessness. This means that by using cross-section methods only those who are experiencing the crisis period of homelessness will be identified. This misrepresentation of the static nature of homelessness means that the likelihood of research studies identifying those with short transitions through homelessness is much lower, simply due to the practical concern that research will be more likely to engage with the much smaller proportion of entrenched homelessness, as they are generally more visible, spend longer in, and have greater contact with services. Entrenched or chronic homelessness is characterised by worse mental and physical health and substance misuse issues and episodic homelessness by episodes within the secure estate and substance misuse treatment centres (Aubry et al. 2013). This is compared with the transitional person experiencing homelessness who have good mental and physical health, no contact with the secure estate and no substance misuse issues. The results in this chapter, while highlighting some similarities between NKHS and PWEH, also reveal significant health challenges in the levels of frequent attendance, and a complex picture overall. These findings demonstrate the impact that a broader definition has on the evidence surrounding A&E interactions.

Gowan (2010) does not make a normative judgement on whether sick talk has correctly been deployed based on some objective truth, it is merely observed as a narrative to explain the causes and management of homelessness. It is possible to recognise that there are some people experiencing homelessness and different forms

of A&E use, without subscribing to sick talk. To state that there are some homeless people with poorer health or challenges in accessing appropriate healthcare is different to arguing that people are homeless because of a health-related challenge or pathology. The findings in this Chapter provides evidence for the need for system talk. Gowan (2010) suggests that system talk leads to consideration of the structural violence of health inequalities and the wider politics that interrogate the economic, social, and political structures that create health and housing inequalities. Some literature on the health of people experiencing homelessness in the UK draws on system talk, demonstrating a critique of the systemic issues which may lead to poorer health for some homeless people (Jackson et al. 2024).

6.4 CHAPTER CONCLUSION

This chapter has focused on exploring the interactions between PWEH and A&E, drawing out differences with the experiences of those NKHS. It contributes to the understanding of the healthcare use of PWEH and evidence on the heterogeneity of health needs for homeless service users. Overall, in the bivariate analysis of matched pairs, the A&E interactions of people who had experienced homelessness were similar to the comparator group. This was the case for arrival mode, discharge route, injury type and triage code. This shows that the definition of homelessness used in studies on the health service interactions of person experiencing homelessness matters. The analysis in this chapter responds to the challenge from O'Sullivan et al. (2020) on the distortion of the evidence and over-representation of those with complex health needs or chronically homeless which leads to the significant and extensive health issues resulting in regular A&E presentations from a small group of entrenched homeless service users and the assumption that all homeless service users suffer from the same issues. This finding is key because less than expected evidence in this study focusing on A&E use, has been found for the types of injuries and health problems most commonly associated with homelessness in the largescale, robust quantitative literature. However, this is contrasted with the evidence from the Poisson regression analysis which found much more frequent attendance from people who had experienced homelessness. Homelessness was significantly associated with frequent attendance even when controlling for other key factors.

Given the finding that the definition of homelessness is key, the limitations of the data-led definition used in this study must be considered. This definition includes all individuals who had contact with Housing Options during the study period, not just those formally assessed as homeless under the legislation at the time. Additionally, the analysis does not solely examine A&E interactions following a homelessness event but considers all interactions within the study period, including those that may have occurred before the homelessness event. As a result, this study's sample differs from many others that narrowly define objective homelessness, often focusing on individuals passing through shelter systems or experiencing street homelessness. Instead, this study adopts a broader definition of homelessness, encompassing those at risk of homelessness as well as individuals living in insecure or inadequate housing.

Gowan (2010) suggests that sick talk is the most frequently deployed across the homelessness archipelago, including in homelessness services, police service and others. That people experiencing homelessness are sicker or gripped by pathology, is often central in reasoning to adopt social control. This reasoning is explored throughout Gowan's (2010) analysis, policy and services all refer to the need to change people experiencing homelessness, therapeutically, to address their homelessness. This claim is also central in the exploration of social control by Jonhsen et al (2018) and most importantly, in analysis of the ethics of applying this social control to people experiencing homelessness (Watts et al 2018). Therefore, the finding that PWEH, in some cases, have similar interactions with A&E to a NKHS control group suggests caution in assuming the same levels and types of 'sickness' for all of people experiencing homelessness. Instead, this thesis suggests that in the UK there is heterogeneity in the health of homeless service users. This chapter has also found evidence for some PWEH who may have unmet health needs. This group may not currently be identified in the evidence base. This chapter has explored frequent attendance in detail, using Poisson regression. PWEH attend A&E more frequently, even when controlling for other factors. The findings highlight the complexity of homelessness and healthcare use, underscoring the need for further research to capture specific health risks and disparities. However, this relationship differed from evidence on MEH as the other of the variables identified by England et al. (2022); it is hypothesised that this might be evidence of unmet healthcare needs or gaps in service provision for a minority of PWEH that has yet to be defined. This was also expressed

in the differences in numbers being discharged to the GP and in self-discharge rates. This chapter has therefore found that when considering health and homelessness, more care needs to be taken in specifying the type of homelessness explored. So, whilst the analysis in the chapter challenges the deployment of sick talk to explain the health needs of all homelessness, there is still evidence for health inequalities for people who have experienced homelessness, possibly indicating issues with access to healthcare.

7 Beyond criminalisation: interactions between the police and homelessness service users

7.1 INTRODUCTION

This chapter focuses on the interactions between people experiencing homelessness and the police, drawing out patterns of interaction by gender and household type. This addresses Research Objective Two and Three. Whilst there is evidence on the relationship between criminality and homelessness, particularly the ‘revolving door’ between homelessness and the secure estate (Kushel et al. 2005; Dyb 2009; Gonzalez et al. 2017), the evidence base is underdeveloped, which leads to several fundamental limitations. The evidence in the UK is focused on several areas, two of which overlap somewhat: on transitions in and out of prison and on the experiences of those in the MEH group (Fitzpatrick et al. 2011; England et al. 2022). MEH can be associated with offending and low-level crime (Bretherton 2017). There other existing area of evidence is around domestic violence, women, and family homelessness. This narrow evidence could also contribute to sin talk, where the focus of the evidence is on criminality indicating the immorality of people experiencing homelessness.

This chapter will explore previously underexplored role of the police through sin talk, sick talk, system talk and the idea of social control. Homeless is often defined through sin talk, with homelessness being attributed to personal moral failing and a resultant call for control and punishment (Gowan 2010). The police are the main providers of force in the typology of social control and their role in the archipelago is underexplored, apart from their role in the lives of rough sleepers (Watts et al. 2017; Watts et al. 2018).

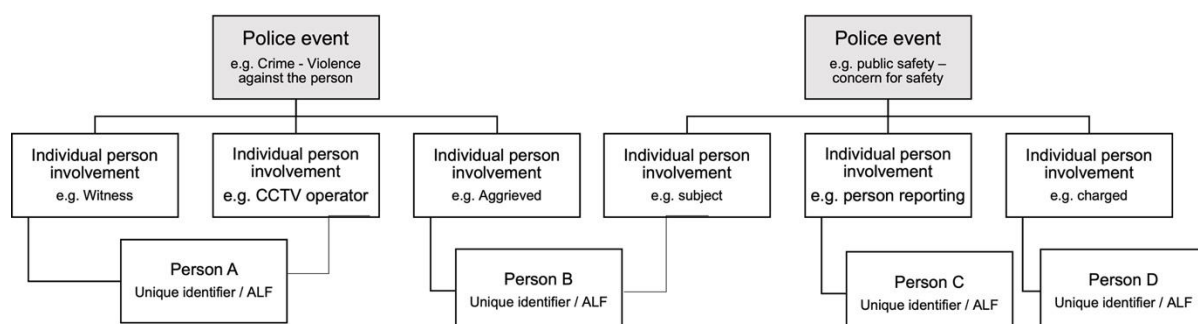
The chapter will compare the interaction of PWEH and NKHS throughout. Firstly, focusing on frequency of interaction. This was analysed as there has been no

quantitative assessment in the UK of the extent to which statutory homelessness service users engage with police; the evidence is either anecdotal or qualitative if there is a relationship between frequent interaction between PWEH and the police, outside of MEH. Next, the types of interactions PWEH were having with the police were explored. This was analysed as the evidence is currently limited to criminality, incarceration, and some very limited evidence on criminal victimisation (Metraux and Culhane 2006; Newburn and Rock 2006; Larney et al. 2009). However, police statistics and evidence from frontline workers suggest that much of the engagement between the police and the public is not reflected in criminal justice measures or incarceration (Lane 2019; Cummins 2023). This relationship has yet to be explored before this analysis. Lastly, it will explore the temporality of patterns of engagement with the police around a person's homelessness event. This will start to build the evidence base on the role of the police within a person's pathway through homelessness and may provide evidence on areas for the prevention of homelessness.

7.2 ANALYSIS

Several levels of measurement are used in this chapter when looking at the relationship between PWEH and the police. This is because of the way the police dataset was structured. Figure 17 shows the way that people were associated with each police event. In this chapter, I refer to people who may have several interactions, even with the same larger police event and 'interactions', when a specific person is involved in a particular police event. I will also refer to 'involvement', a variable from the police data specifically referring to how a person was involved in the police event e.g., charged. See Methodology section 4.3.3 for a fuller discussion of the structure of the police dataset. Across the whole cleaned dataset, the mean number of people associated with each police event was 4.

Figure 17: Diagram of the structure of the police data



7.2.1 The intersection between institutions: homelessness services and police services

Of the 7,816 individuals in the homelessness dataset 6,103 were linked with records in the police dataset. This means that 78 per cent of the people who had approached the local authority statutory homelessness services had also interacted with the police one or more times in the same four-year window. However, as this analysis takes a snapshot of interactions in a particular period, further interactions could have occurred before or after the data used in this study.

The first part of the findings focuses on the number of interactions those who have interacted with homelessness services in the study period (PWEH) have with the police, comparing these with people not known to homelessness services (NKHS) and then focusing on those with high interaction frequencies. It will first discuss some descriptive statistics for the number of interactions an individual might have in each group, before considering what a measure of frequent attendance might look like.

For analysis on frequent attendance, within event duplicates were excluded. This was necessary as a person could be linked to a police event multiple times, see Figure 17. For example, a person could be correctly associated with a ‘theft’ interaction as the ‘person reporting’ and the ‘aggrieved’ so including the within event (e.g. theft) duplicates would have skewed the analysis. This gave a more accurate count for the number of times a person interacted.

The number of times each person interacted with the police service over the study period was also analysed. The analysis compares the number of interactions for those NKHS and PWEH. The average number of interactions and percentiles for individuals were generated. Table 32 provides the mean and median for the 95th percentile of interactions with the police service by NKHS and PWEH over the whole study period financial April 6th 2012 to April 6th 2016. The mean is higher than the median for both NKHS and PWEH, indicating that the mean is skewed by some individuals with extremely high numbers of interactions. For PWEH the mean is more than double the median, indicating that some PWEH had very high levels of interaction with the police. The 95th percentile of interactions for PWEH is far higher than those for NKHS.

Table 32: Comparison of mean, median and 95th percentile of number of interactions for NKHS and PWEH

	NKHS	PWEH
Mean	13.39	28.54
Median	5	16
95th percentile	52	97
Total	572,211	6,103

To explore levels of frequent interactions with the police service, further percentiles were generated for the police dataset population for each year of the study period. The median and 95th percentile remained stable over each year of the study. The median was zero, and the 95th percentile was five. Compared with the analysis of frequent attendance at A&E (see 6.2.2) the 95th percentile is slightly higher for interactions with the police; for each year of the study, the median of A&E visits was zero, and the 95th percentile was three.

The 95th percentile was used to make a flag for frequent attendance, based on the percentile. The 95th percentile was 5 interactions per year for each. Therefore, frequent attendance is defined as interacting with the police more than five times in one or more years of the study. Table 33 shows that PWEH are far more likely to interact frequently with the police than NKHS. 34 per cent of PWEH interacted with the police more than five times in one or more years, compared with only seven per cent of people NKHS.

Table 33 Comparison of frequent interaction for PWEH and NKHS

Frequent interactions	NKHS (per cent)	PWEH (per cent)
No	93.44	65.97
Yes	6.56	34.03

Total (individuals)	572,211	6,103
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7.2.2 Moving beyond the binary: neither a criminal nor a victim

Studies of interactions between the police and people with experience of homelessness often three key areas; incarceration, MEH, and revanchism. Evidence on incarcerations shows that homelessness is both a cause and consequence of incarceration (Kushel et al. 2005; Dyb 2009). The resultant narrative is clear; people experiencing homelessness commit crimes. The narrative of a nexus between homelessness and crime is further developed in studies of MEH, where crime plays a pivotal role in pathways into deep social exclusion (Fitzpatrick et al. 2011; England et al. 2022). This sin talk narrative also pervades urban revanchism literature, where the street based activities and lives of people experiencing homelessness are criminalised and efforts focus on their removal from public space (Robinson 2019) Across all three literatures, the focus is again centred on the lives and experiences of mostly single people, typically with multiple support needs, and often roofless. There is also evidence on the domestic violence faced by homeless women and families as well as some evidence of the greater risks of criminal victimisation of rough sleepers (Lee and Schreck 2005; Bretherton 2017). This section explores interactions with the police amongst a much wider population of people experiencing homelessness. This chapter will particularly focus on the experiences of women and households with dependants, as these service user groups tend to have a less developed evidence base. Although domestic violence is a recognised as a cause of women and family homelessness there is a lack of robust quantitative research.

This section compares the types of involvement and the different ‘reasons’ a person can be involved; the ‘reasons’ will be called ‘interaction types’. The measurement level is at the interaction level, meaning each person may have more than one interaction, and the table and figures compare NKHS with PWEH throughout.

In the dataset, police events were graded by their severity. Table 34 shows that PWEH have more emergency police events (40 per cent vs 31 per cent) and less scheduled and routine attendance events (25 per cent vs 34 per cent). Police events are categorised according to their interaction type. Table 35 shows that PWEH had more interactions for Public Safety interactions (48 per cent vs 39 per cent) and less for

Transport related interactions (four per cent vs ten per cent) than people NKHS ($X^2(5, N=2,263,590) = 4300, p = <.001$). However, the effect size is below the Cramér (1946) convention set for a small effect size ($V=0.1$) at $V=0.044$. It could be hypothesised that the difference in transport-related interactions simply reflects lower levels of vehicle usage by PWEH, therefore reducing the likelihood of an event. There was little difference in the proportion of PWEH interacting with the police for crime (39 per cent vs 40 per cent) or anti-social behaviour (nine per cent vs ten per cent) when compared with NKHS ($X^2(3, N=2,263,590) = 4900, p = <.001$). Again, the effect size was below the Cramér (1946) convention set for a small effect, indicating a weak association ($V=0.46$).

Table 34: Grade of police response for PWEH and NKHS. Within event person duplicates excluded

Grade of response	NKHS (per cent)	PWEH (per cent)
Emergency	31.21	40.04
Priority	35.56	35.39
Routine	28.79	21.13
Scheduled	5.2	3.24
Telephone Resolution	0.13	0.09
Null	0.12	0.11
Total (interactions)	2,179,993	83,597

Table 35: Type of interaction, grouped for PWEH and NKHS. Within event person duplicates excluded

Interaction group	NKHS (per cent)	PWEH (per cent)
Antisocial behaviour	10.43	8.76
Crime	40.30	39.05
Public safety	39.47	48.43
Transport	9.80	3.77
Total (interactions)	2,179,993	83,597

To further explore police service interaction, aggregate counts for interactions and involvements were compared for PWEH and NKHS.

Involvement: relates to a person's role, e.g., Subject or Witness. See Methodology Section 4.3.3 for a fuller discussion. The five most common types of involvement were focused on. These were: Charged, Aggrieved, Witness, Person Reporting and Subject. Often literature will suggest people are the 'victim' of crime but in the police data this is coded as 'aggrieved' so for consistency with data, 'aggrieved' was used. All other types of involvement were grouped under 'other' for analysis purposes.

Interaction: this describes the recorded interaction in the dataset e.g., Concern for Safety. The four most common interaction types will be focused on: Concern for Safety, Domestic Incident, Violence Against the Person and Theft. Table 50 contains all interaction types and a comparison between PWEH and NKHS.

By including multiple interaction types here this mean that an interaction is counted no matter if a person is 'charged', 'aggrieved', 'witness', 'person reporting', 'subject' or 'other'. This therefore includes where a person is a victim or perpetrator or involved in another way in the non-crime related interactions which do not report on those aggrieved or perpetrators.

For this analysis within event duplicates were included, see Figure 17. This has some limitations as it means that for some interactions there may be some double counting of a single person. For example, if they were recorded as both the Subject and Person Reporting. As this analysis aimed to see overall the patterns in involvement excluding some of the involvements would have meant a subject decision without first exploring the data. Due to a lack of literature, this could not be guided by existing evidence. Future analysis that aims to focus more closely on some of the specific areas indicated by the findings in this thesis could exclude the within event repeats and be guided by the patterns established in this Chapter.

Table 36 Frequency for all interaction categories for PWEH (n=111,483) and NKHS (n=3,137,404) in cleaned data

Interaction type	Person not known to homelessness services	Person who has experience homelessness
PS10 Concern for Safety	17.87	23.71
CR37 Violence Against the Person	14.94	16.24
CR41 Theft & Handling	10.48	8.41
PS11 Domestic Incident	8.04	12.59
PS35 Suspicious Circumstances	5.83	4.35
AN18 ASB - Nuisance	5.29	5.26
CR43 Damage	4.71	3.58
AN19 ASB - Personal	4.68	3.32
TR6 Road related	3.67	2.17
CR45 Crime Related incident	3.56	4
CR40 Burglary	3.4	3.18
TR4 RTC-Damage Only	2.58	0.68
PS34 Missing Person	2.1	1.67
TR5 Highway Disruption	1.89	0.36
TR9 Road Traffic Collision - Death/Injury	1.63	0.55
PS8 Civil Dispute	1.48	1.41
CR31 Drugs	1.34	2.14
CR38 Sexual Offences	1.32	1.01
PS30 Absconder/AWO	1.09	2.49
PS25 Sudden Death	1.06	0.31
PS32 Animals/Wildlife	0.62	0.25
PS1 Abandoned Call	0.48	0.67
AN17 Anti-Social Behaviour - Environment	0.45	0.17
CR42 Fraud & Forgery	0.36	0.22
CR39 Robbery	0.25	0.35
PS33 Hoax Calls	0.25	0.51
PS31 Alarm	0.18	0.21
PS12 Firearms	0.16	0.06
PS27 Suspicious package	0.11	0.08
Other	0.09	0.02
PS13 Immigration	0.08	0.03
Total	100 per cent	100 per cent

Refer to Table 36 for all of the interaction types for both PWEH and NKHS. The most common reason for interaction with the police for both NKHS and PWEH was Concern for Safety. 18 per cent of NKHS and 24 per cent of PWEH total interactions were for Concern for Safety. Figure 18 shows that PWEH were more frequently the Subject of Concern for Safety interactions (46 per cent vs 32 per cent), whereas NKHS more frequently report a Concern for Safety to the police (21 per cent vs 34 per cent). This type of interaction has the largest difference between PWEH and NKHS across the involvements. In addition, men are more frequently recorded in Concern for Safety interactions when comparing PWEH with NKHS (52 per cent compared with 47 per cent).

Figure 18 also shows that the second most common interaction for both PWEH and NKHS was for Violence Against the Person (16 per cent and 15 per cent respectively, see Table 36). Violence Against the Person can refer to various circumstances within the police offence classification index, including murder, harassment, and stalking (Crown Prosecution Service 2023). The differences in involvement for Violence Against the Person interactions were small. PWEH are more frequently Charged with Violence Against the Person than NKHS (12 percent vs seven per cent), but these involvements make up a small proportion of the ways in which people tend to be involved. Both PWEH and NKHS were most frequently Aggrieved (23 per cent and 21 per cent) or Witness Violence Against the Person (24 per cent vs 30 per cent).

As demonstrated in Figure 18, the third most common interaction for PWEH was a Domestic Incident, with 13 per cent of total interactions. However, Domestic Incidents were the fourth most common interaction type for NKHS, at 8 per cent (refer to Table 36 in the Annex). When looking at the ways in which both groups are involved in the interaction there were only slight differences. Both groups most frequently were the Subject (41 per cent vs 38 per cent) and second most frequently the Person Reporting (26 per cent and 29 per cent respectively).

PWEH (9 per cent) were slightly less likely to have interacted with the police for Theft than NKHS (10 per cent), see Table 36. Theft was the third largest interaction types for NKHS and the fourth largest for PWEH. NKHS were most frequently involved in a Theft interaction as the Person Reporting (17 per cent vs 33 per cent) or as a Witness (14 per cent vs 27 per cent), whereas PWEH were most frequently Charged (25 per

cent vs 5 per cent). There are also differences in gender for Theft interactions between PWEH and NKHS, men who are known to homelessness services are more frequently interacting for Theft, 67 per cent compared with 61 per cent.

Figure 18 Interaction with police by involvement for PWEH and NKHS. Refer to Table 63 and Table 64 in the Annex for the full data (NKHS n=2,179,993, PWEH n= 83,597)

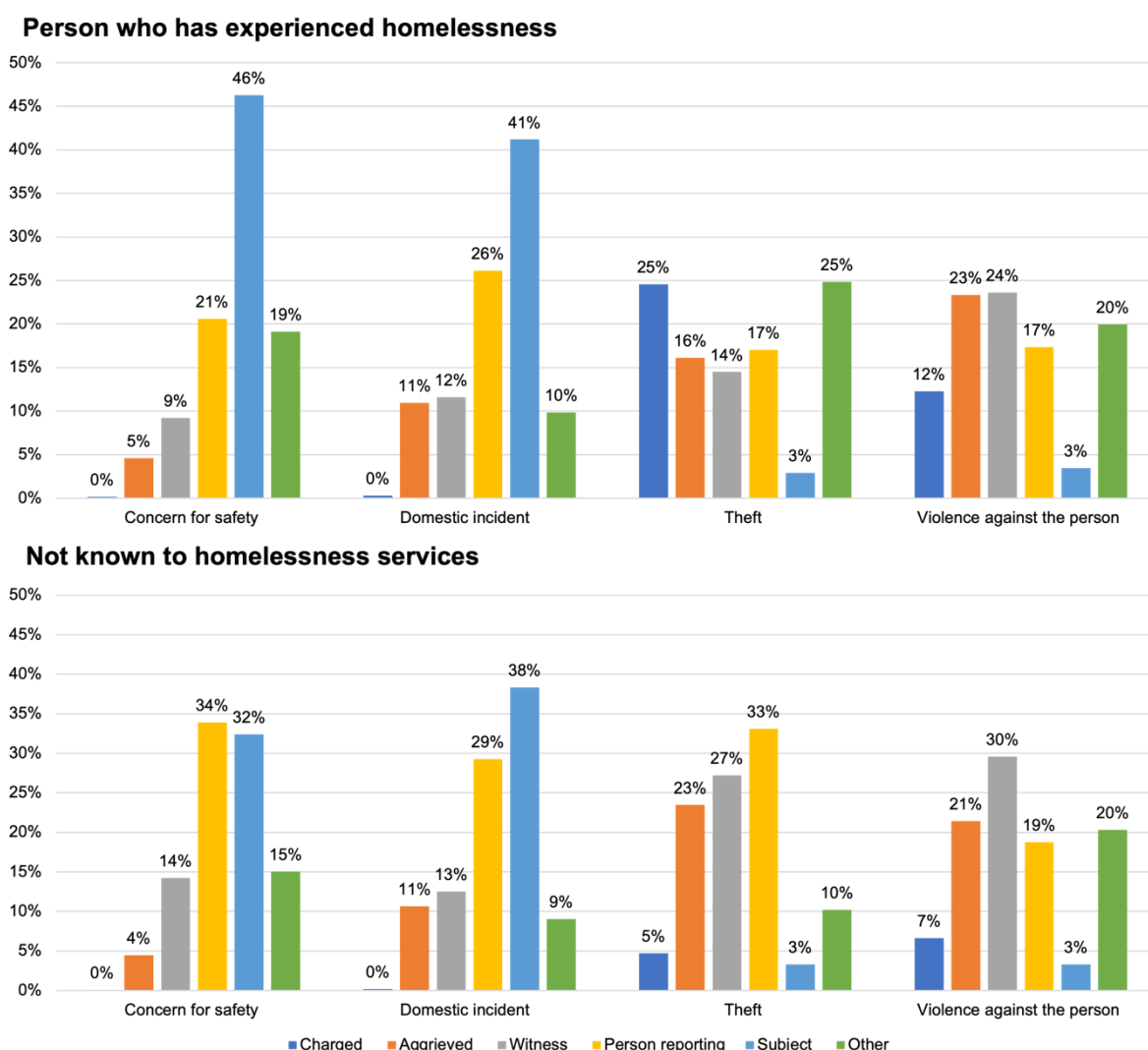
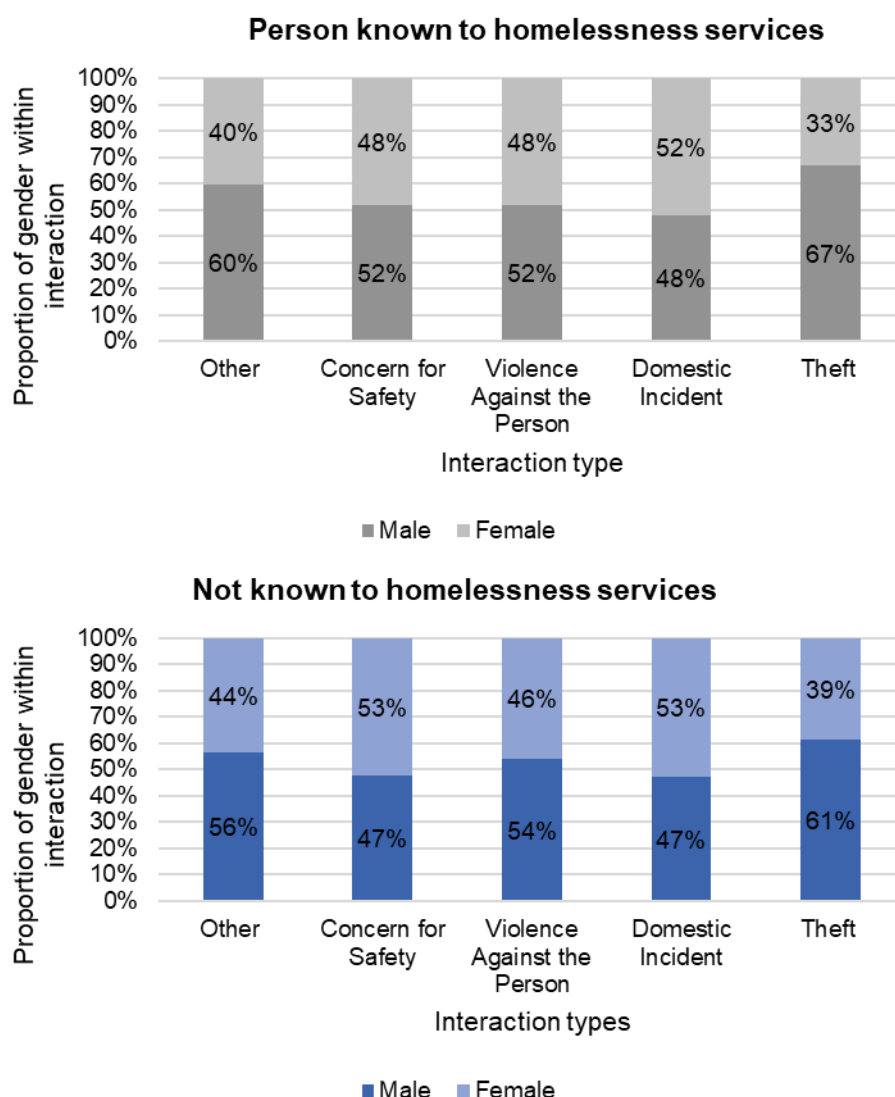


Figure 19 compares the gender of the person interacting with the police across each of the four main interaction types considered: Concern for Safety, Violence Against the Person and Domestic Incident. For PWEH the majority of incident types involve men, except for Domestic Incident, which more frequently involves women (52 per cent women and 48 per cent men). For NKHS the patterns are similar, except for Concern for Safety which more frequently involves women (53 per cent for NKHS, compared to 48 per cent for PWEH).

Figure 19 Comparison of gender for each of the main interaction types (NKHS n = 2,179,993 n = PWEH 83,597)



The most frequent interaction types identified in these findings are different from the interactions with the police discussed in much of the literature. Within the literature, PWEH tend to be associated with criminality due to substance misuse and anti-social behaviour, linked to mental health difficulties and 'quality of life policing' (Robinson 2019). The analysis described in Table 37 explores the types of interactions commonly described in the literature. These were: nuisance anti-social behaviour, personal anti-social behaviour, criminal damage, and drug offences. Anti-social behaviour (ASB) nuisance was defined as having: 'an act, condition, thing or person causes trouble, annoyance, inconvenience, offence or suffering to the local community in general ... where behaviour goes beyond the conventional bounds of acceptability and interferes

with public interests including health, safety and quality of life'⁷ (National Standard of Incident Recording 2011). Whilst ASB personal, was defined as: 'an impact on an individual or group rather than the community at large. It includes incidents that cause concern, stress, disquiet and/or irritation through to incidents which have a serious adverse impact on people's quality of life' (National Standard of Incident Recording 2011). Criminal damage was defined as 'destroys or damages any property belonging to another, intending to destroy or damage any such property, or being reckless as to whether any such property would be destroyed or damaged' (CPS 2022).

Table 37 shows that for each of these four interactions, they are of much lower frequency than the interactions discussed previously in this section. It also shows very small differences between NKHS and PWEH across each of the types of interaction. The most common type of interaction for both cohorts was ASB nuisance (five per cent). Drugs were the most infrequent category for both NKHS (one per cent) and PWEH (two per cent), with a very small different between the cohorts.

Table 37: frequency for ASB, drugs and criminal damage (NKHS n = 2,179,993 PWEH n = 83,597)

Selected interaction types	NKHS (per cent)	PWEH (per cent)
ASB - Nuisance	5.29	5.26
ASB - Personal	4.69	3.32
Drugs	1.34	2.14
Criminal Damage	4.71	3.57

7.2.3 Longitudinal relationship between homelessness events and police service interactions

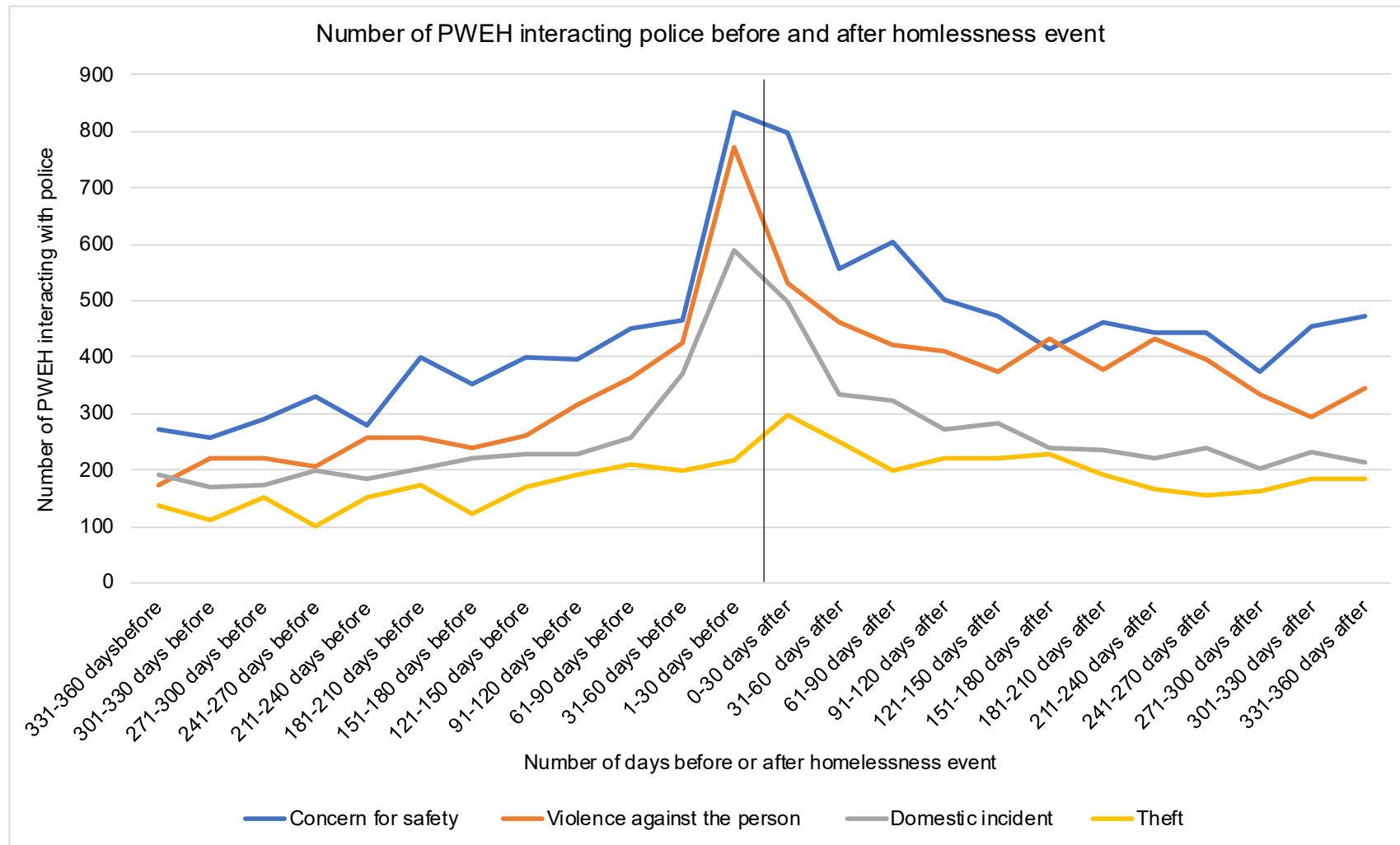
This section focuses on the longitudinal relationship between police interaction and homelessness events. Little is known about the temporality of police interactions before and after homelessness. This is an evidence gap and has clear implications for service delivery. In Wales, the Housing Act (Wales) 2014 describes how all public services have a role to play in homelessness prevention; identifying possible patterns in interactions with the police may provide new areas opportunities for prevention.

For this analysis, a homelessness event was defined as the date at which a person makes an application to statutory homelessness services. This is a definition driven

⁷ For the full definitions of ASB see 4.3.3

by the data available as it is acknowledged that homelessness can be a fluid process and may have commenced prior to a person making a statutory homelessness application (Fopp 2009). Aggregate counts of police service interactions in were created for the PWEH group in 30-day periods before and after a homelessness event. The 30-day windows were generated up to 360 days before and after the homelessness event. The homelessness event was day 0. Each 30-day period where a person had an interaction with the police was plotted. Some PWEH had more than one interaction in a 30-day window. These were plotted in the same way as a person with one interaction in the 30-day window. Police interactions were defined as a person's interaction with a police event. Figure 20 takes all household types and breaks down the type of interaction in each 30-day period. Concern for Safety, Violence Against the Person and Domestic Incidents all reach their highest level in the 30 days before homelessness, whilst Theft reaches the highest level in the 30 days after homelessness. Although, the increase in Theft interactions is far smaller than all the other types. The lowest number of Thefts is at 241 to 270 days before a homelessness event (99 interactions). The peak number of Thefts is in the 30 days after a homelessness event (298 interactions). The overall highest number of interactions are for Concern for Safety, which rise sharply (834 interactions) in the 30 days before and, unlike other types of interaction, remain high (795 interactions) 30 days after. Violence Against the Person also peaks 30 days before. Neither Concern for Safety nor Violence Against the Person drop to their pre-homelessness levels even a year after the homelessness event. Domestic Incident interactions start to rise (372) 31 to 60 days before homelessness, rising from 256 61 – 90 days before .

Figure 20 All interactions with the police around the homelessness event split by interaction type

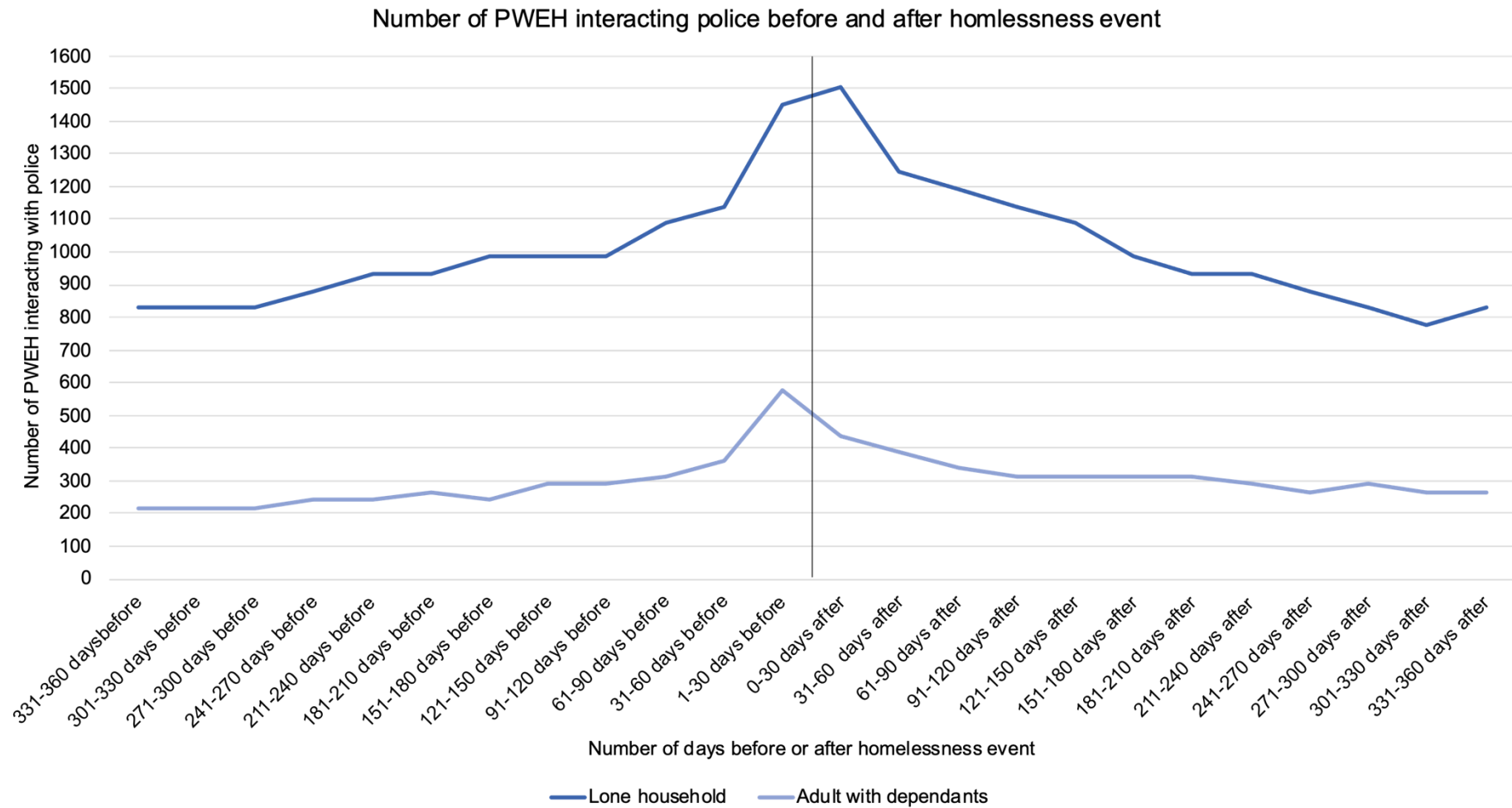


This section explores the differences between PWEH who were recorded as being in a household with dependants and those who were not (lone household). The focus of this comparison was partly driven by the analysis process and partly based in the literature. This thesis set out to focus on homelessness in the broadest sense and look particularly at women's homelessness as a known evidence gap. When the patterns in types of interaction specifically showed Violence Against the Person, Concern for Safety, and Domestic incident as the most common reasons a PWEH interacted with the police, this led to the hypothesis that this may be due to relationship breakdown and domestic violence as known causes of women and family homelessness (Bretherton 2017). The analysis focuses on comparing the police interactions with lone person households and households with dependants (most of which are female headed households).

As discussed in Chapter 4, the homelessness dataset only has data for the lead applicant, and this is the data that was linked with the police data. So, although some PWEH are recorded as being in a household with dependants, the data relates specifically to them and their police interaction. This also means that the police interactions relate only to the lead applicant so this may mean there are additional police interactions for others in the household making the homelessness application. So, whilst this chapter refers to households with dependants, information is only available about the lead applicant. The number of PWEH, sorted by their recorded household type and whether they interacted with the police in 30-day windows before and after their homelessness event were plotted. Figure 21 shows that both household types have a rise in the number of households interacting with the police before and after the homelessness event. Those without dependents at the time of their homelessness event (lone-person households) show an overall much higher level of interaction than those households with dependants, regardless of the timing of the homelessness event and the rise in the number of events is greater than those households with dependants. At the lowest point, a year before homelessness, 828 lone households (16 per cent of all lone-person households) interact with the police, whereas 217 households (9 per cent of all households in this group) with dependants do. The number of lone-person households interacting starts to rise 61 – 90 days prior to the homelessness event, reaching the highest number of PWEH interacting 0- 30 days after the homelessness event (1501 interactions). Lone PWEH maintain a high

level of interaction following homelessness, with the number of lone PWEH interactions dropping off slowly. This contrasts with households with dependants, where homelessness follows a peak in the number of people/households interacting with the police; the peak is at 0-30 days (578) before homelessness and the number of service users interacting drops down again after homelessness. The graphs show a distinct pattern of interaction with the police between lone-person households and those with dependants at the time of the homelessness event.

Figure 21 Number of police interactions for PWEH lone households and PWEH households with dependents: before and after homelessness event



To quantify the number of potential missed interventions to prevent homelessness for those PWEH who interacted with the police in the 30-day window prior to their homelessness event, the number of times they interacted with the police in the year preceding their homelessness event was calculated. Figure 22 demonstrates that most PWEH interacted with the police one (27 per cent) or two (19 per cent) other times prior to the interaction that preceded their homelessness. However, 28 per cent, or 240 PWEH, interacted with the police five or more times in the year prior to the homelessness event, with 47 PWEH interacting with the police between 15 and 77 times in the year running up to their homelessness crisis.

Figure 22 Number of interactions with the police in the year prior to homelessness for PWEH who interacted with the police in the 30 days immediately preceding their homelessness

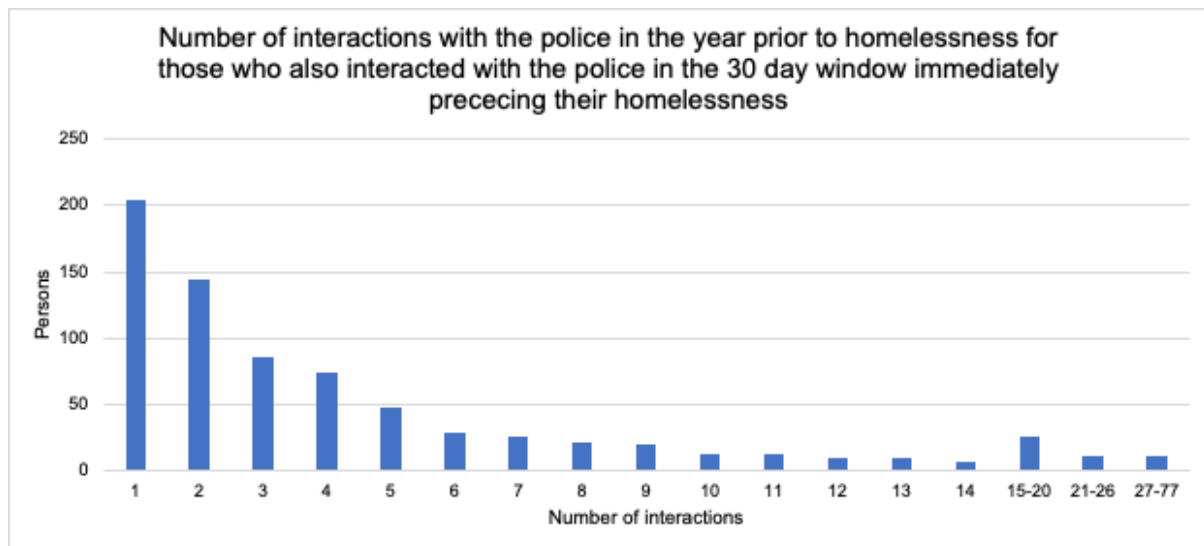


Figure 23, shows those PWEH residing in households with dependants, the largest increase in interactions before the homelessness event is for Violence Against the Person. Concern for Safety, Violence Against the Person and Domestic Incidents are at similar levels until the 30 days directly before the homelessness event. In the 30 days prior to the homelessness event, 332 PWEH with dependants interact for Violence Against the Person, an increase of 181 from 31 to 60 days before. Then following the homelessness event, the number of PWEH who interacted for Violence Against the Person again fell to a similar level to the other interaction types. There was also a smaller peak in both Concern for Safety (200) interactions and Domestic Incidents (227) in the 30 days before the homelessness event. For Concern for Safety (178), most interactions follow the homelessness event, unlike the other interaction types.

Figure 24 shows the largest peak in interactions for lone household PWEH was for Concern for Safety interactions (611) in the 30-day window following the homelessness event, although the peak began in the 30 days prior to the homelessness event (591). Concern for Safety interactions remained high following homelessness from a low of 212 at 331 – 360 days before homelessness. Overall, Concern for Safety interactions make up the largest proportion of interactions for lone household PWEH throughout the study window. For lone PWEH there was a smaller increase in all other interaction types around the homelessness event, including a small increase in Theft interactions, again unlike the PWEH with dependants. For Thefts, the small increase follows the homelessness event, whereas for Violence Against the Person and Domestic Incident the peak is in the 30 days before homelessness. This is unlike the pattern for PWEH with dependants where the peak is much sharper in the window prior to homelessness.

Figure 23 Households with dependants interactions with the police around the homelessness event split by interaction type.

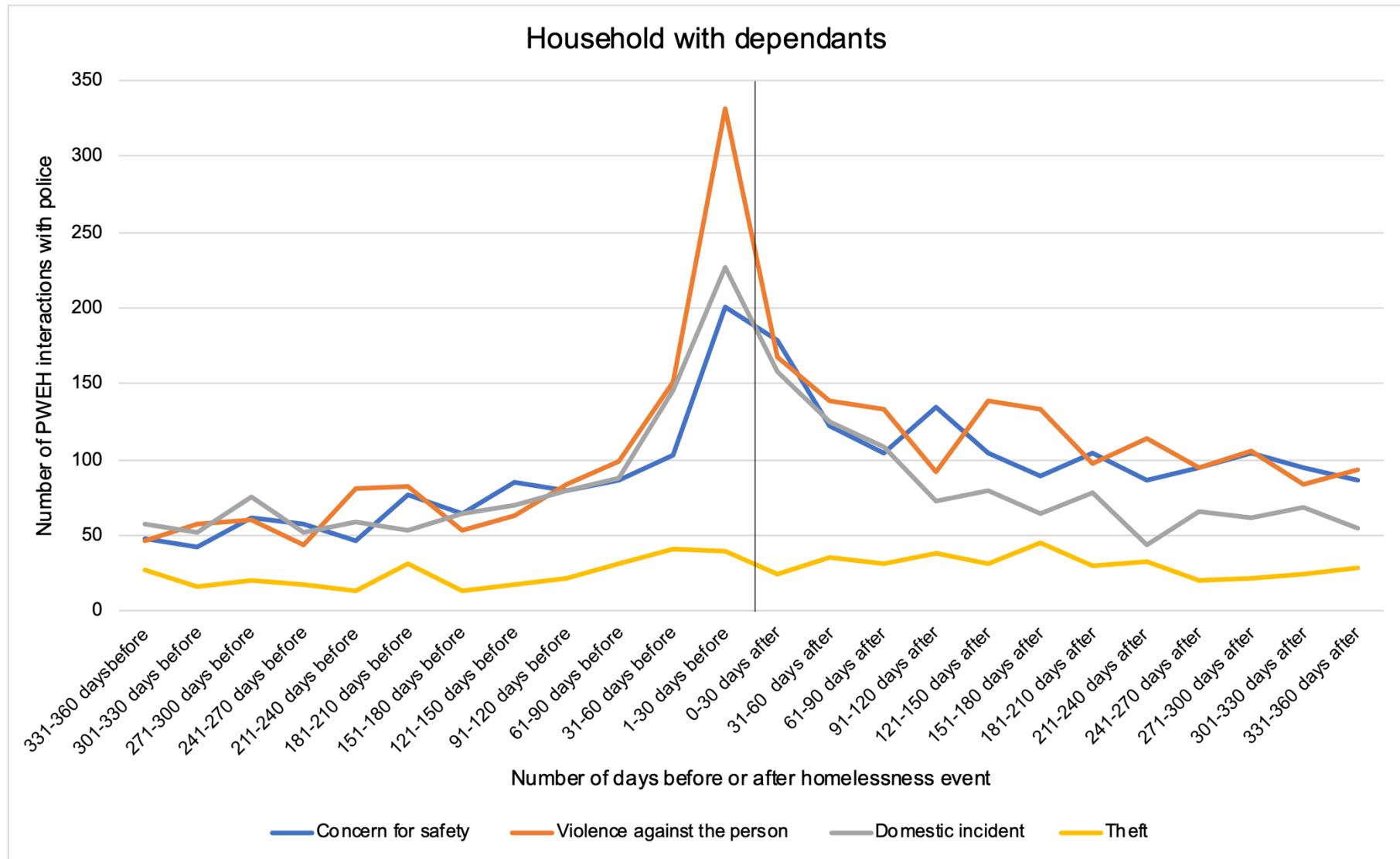
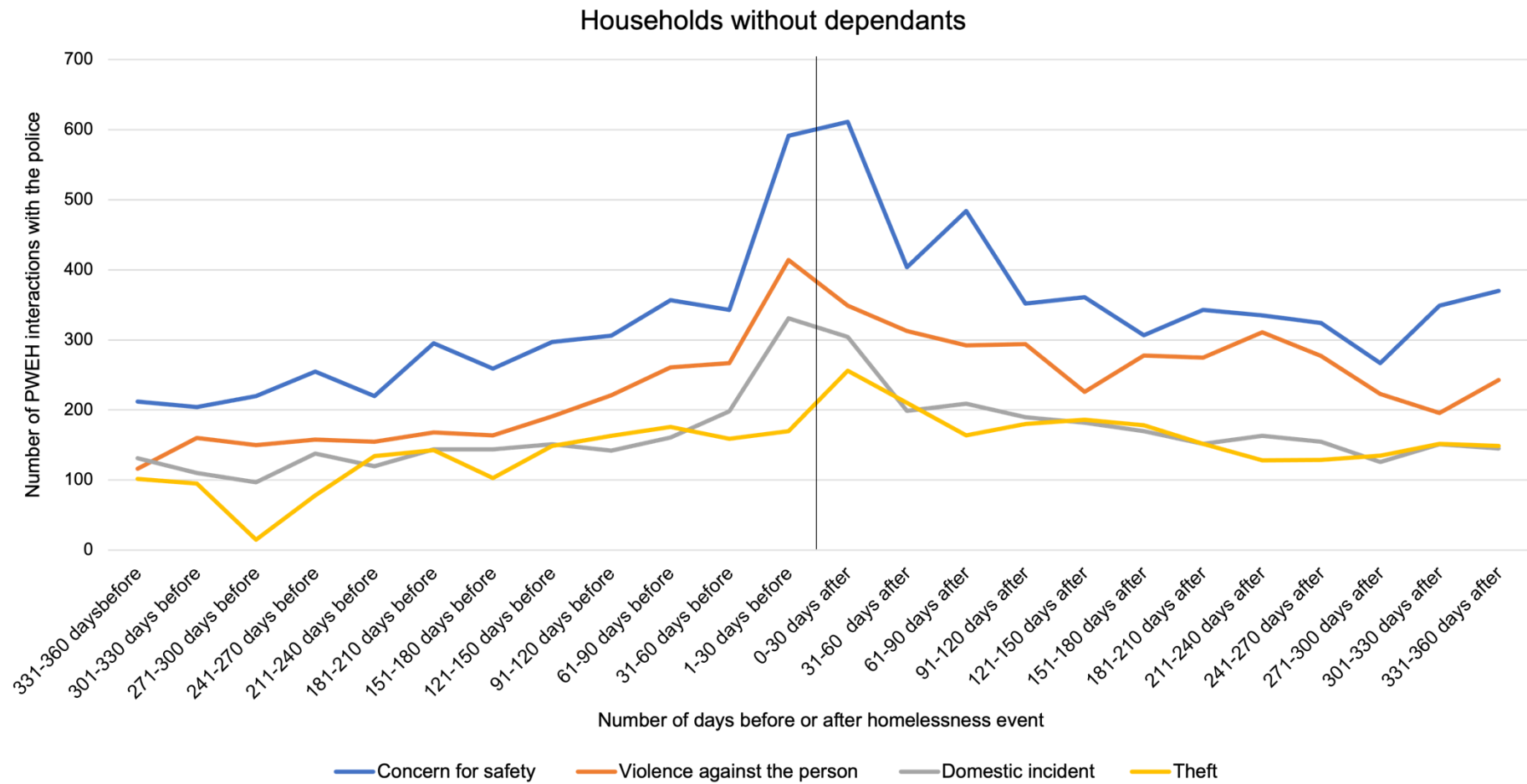


Figure 24 Households without dependants interactions with the police around the homelessness event split by interaction type



7.3 DISCUSSION

This discussion will explore how the findings from Section 7.2 align with established literatures on the relationship between homelessness and the police. First, it will consider the findings on the types of interactions between police and PWEH; in comparison with sin talk literature and focusing on homelessness within public space. It will move on to examine the most frequent types of interactions and how these might be conceptualised using concepts of care and coercion. This is followed by examination of the longitudinal relationship between a person's homelessness event and their interaction with the police, and the police's role in the prevention of homelessness. Finally, the discussion considers the role of gender throughout the findings.

7.3.1 Homelessness and immorality

The findings in this chapter also explored if there was evidence of the sort of criminal actions that the literature so frequently associates with people who experience homelessness. These include: anti-social behaviour orders to manage begging, street drinking, urinating in public, public drunkenness and drug taking (Millie 2008; Johnsen and Fitzpatrick 2010; Roberts and Archer 2022). Gowan's (2010) findings and construction of the narrative of sin talk sit firmly within a broader framing of the role of the police in managing homelessness, characterised by literature on the role of the police in the lives of rough sleepers both in the UK and internationally. Within Gowan's (2010) analysis, sin talk is clearly expressed through the actions of the police in participating in 'quality of life' laws that focus on 'out of place home life' by criminalising begging and sleeping in public spaces. This form of social control is also observed in literature focusing on the role of the police in the UK, where they are seen to act to 'criminalise' poor people or enforce paternalistic but justified interventions. This chapter found that the frequency with which PWEH were involved in these interactions, not just charged, was very low. This study has found some evidence of the use of nuisance ASB and the criminalisation of drug taking, with 5 per cent of all the interactions for PWEH for ASB (nuisance) and 2 per cent for 'drugs'. These are likely to include some of the types of interactions between the police and PWEH for street

drinking and begging in public spaces. These interactions comprised a small proportion of the overall interaction pattern between police and PWEH.

This may be due to several factors; it may add further evidence to the nuance needed when considering the existence of the revanchist city in the UK. Whilst the empirical reality of revanchism as a widely occurring international phenomenon is questioned (DeVerteuil 2019) the term remains an oft-used shorthand for the privatisation of public space, anti-homeless legislation and a punitive approach to street homelessness. Evidence on revanchism has broadly been questioned on both sides of the Atlantic (DeVerteuil et al. 2009; Johnsen and Fitzpatrick 2010). Within scholarship on revanchism, the police are one of the main actors engaged in controlling and removing people experiencing homelessness. Although the existence of revanchism in both the UK and the USA is debated, the ways in which the discourse positions the police alongside homelessness remains (DeVerteuil 2019). Whilst some would argue that the revanchist city can still be observed, over the last thirty years, evidence of a complex web of homelessness services has added nuance to the evidence base. The findings in this chapter echo this.

The other factor that may explain the far lower proportions of interactions for drugs, ASB and non-violent crime is the continued distortion of the evidence base through the focus on chronic homelessness and rough sleeping. While this argument by O'Sullivan (2020) was developed with a focus on health, specifically mental health and problematic drug and alcohol use, this chapter suggests that a similar distortion occurs in associations between homelessness and criminal justice involvement. Moreover, analysis exploring revanchism is necessarily focused on 'street' or 'shelter-less' homelessness. The analytical focus is the space of the street as a part of the new urban landscape under neoliberalism and a growing move to purify public streets, parks, and squares. It could be suggested that one of the main reasons for the difference in types of interactions is the focus on public space in the USA in revanchism. As outlined in previous chapters, the participants in this study may include those who are shelter-less but also those who are housed through the social housing system or in privately rented accommodation. The population in this research are not directly comparable with other administrative data studies in this area which focus on those who have been through the secure estate and reside in shelter-type accommodation. The implications of this narrow focus on certain service users and

types of interaction could contribute to the distortion of how we understand homelessness.

Although, the findings in section 7.2.2 found limited evidence of the sort of criminal actions that the literature frequently associates with people who experience homelessness, there was evidence of higher frequencies of PWEH being charged with one specific type of crime: theft. When involved in a theft interaction the most common type of involvement for PWEH was charged (25 per cent), whereas NKHS persons the most frequent type of involvement in a theft was as a person reporting (33 per cent). This may place some interactions between PWEH and the police into 'sin talk'. Without the context of the wider pattern of interactions, this finding could be taken to reflect some of the broader evidence bases on homelessness and crime; the evidence-base links homelessness and criminal victimisation (Diette and Ribar 2018; Lee and Schreck 2005; Wenzel et al. 2000) and offending and homelessness (Metraux and Culhane; Dyb 2009). The interactions where PWEH are charged in relation to theft are a very small proportion of the overall interactions.

Despite the findings in this chapter diverging from the evidence base on criminal justice involvement, it has found a high level of interaction between PWEH and the police. The data linkage discussed in this chapter has established that 78 per cent of those who approached statutory homelessness services have also interacted with the police one or more times in the same four-year window. The linkage between these two datasets shows a high level of interaction between these two parts of the archipelago but is distinct from the assumed criminality of PWEH.

7.3.2 A new talk: safety talk

Most interactions between the police and PWEH were for Concern for Safety: 24 per cent. For more than 50 per cent of these interactions, the PWEH were the subject. The analysis within section 7.2.2, suggests that concerns for safety interactions may fit within concepts of coercive care or the social control exemplified in paternalistic approaches to homelessness. It appears the police are acting supportively in unsafe situations, although there are limitations in this thesis's data to conclusively suggest how these interactions should be characterised. Whilst the interactions in this study are definitively not criminalising, because of the limitations in the data, we cannot know how those involved in the interaction, the caller, the police, or the service user,

experienced it. Therefore, the analysis in this chapter draws on the work on coercive care to suggest how this finding could be understood. This introduces ambiguity into the taken-for-granted role of the police, as despite being a symbol of social control, many of the reasons for interacting with PWEH are for potentially supportive or safety-related reasons. However, it places them within 'force' type social control within sick talk. For Gowan (2010), whilst the institution may appear therapeutic, rooted in sick talk, the way it is delivered or experienced by staff and service users can still be imbued with the narrative of sin. This analysis suggests a similar relationship between the police and PWEH; the police are cast as enforcers of moral judgements rather than providers of care (Bloch 2021) but still may be delivering care. Literature on the geography of homelessness has grappled with similar complexity in institutions and services that support PWEH, exploring homelessness services as spaces of care or abeyance (Johnsen et al. 2005; DeVerteuil 2014). Gowan (2010) also identifies that services, policies or interactions can be framed within one talk but experienced as another, similar to the complexity of coercive care described in literature on the space of homelessness services. Both suggest it is essential to be cautious in characterising a particular institution or service within a particular 'talk' and this is supported by the findings in section 7.2.2.

However, these findings diverge from the coercive care literature, which predominantly focusses on police interactions with shelterless PWEH. This thesis draws on a wider definition of PWEH. The police tend to be involved in the lives of shelterless PWEH, because shelterless PWEH are living outside of social norms: residing on the street and therefore targeted by anti-vagrancy laws, anti-begging legislation or because they are undertaking risky behaviour; through substance misuse or making public space unsafe for others because of drug use (O'Sullivan 2012). In these cases, despite some arguing for a need for voluntary engagement, there is generally a consensus that it is ethical to use social control, via the police, in the best interests of the extremely vulnerable or MEH (Fitzpatrick and Johnsen 2009; Parsell 2011; Watts, Fitzpatrick and Johnsen 2017). However, it is unknown if the engagement of the police in the 'concern for safety' interactions found in this chapter can be justified in relation to frameworks of ethics of care. As there has yet to be an engagement with the conceptual basis for the justice of wider agents of social control, the police, for the wider cohort of PWEH identified in this research. It is outside of the scope of the data analysed in this chapter

to explore this normative dimension but given the extent of interaction for 'concern for safety' for PWEH, this chapter suggests that this is a significant gap.

Analysis in this chapter also found that police frequently interact with PWEH for other reasons, which established concepts of social control may not explain. The second most frequent interaction type was Violence Against the Person. In half of the Violence Against the Person interactions, the PWEH were victims or witnesses, and in only 12 per cent of the Violence Against the Person interactions, PWEH were charged. The police also frequently interacted with PWEH for domestic incidents; in 45 per cent of these, the PWEH were the subject, and in 26 per cent, the person reporting. It is suggested that these interactions place the police back in the role of providing protection, security, or coercive power in these interactions. In most cases, they are not providing force or power to control the PWEH but rather the other parties in the interaction to provide safety. Although some evidence exists on the greater levels of criminal victimisation of PWEH, it is focused on rough sleepers (O'Sullivan 2012). The findings in this chapter differ from these as they identify a higher frequency of Violence Against the Person interactions and a high frequency of Domestic Incidents, which are not recorded as crimes. It is proposed that these sit outside of the established concepts of sin talk or sick talk and outside of the typology of social control of PWEH as they do not seek to change the behaviour of PWEH. It is proposed that these interactions can be thought of as 'safety talk'.

7.3.3 A space for prevention and a need for system talk

For Gowan (2010), system talk is the idea that homelessness is caused by failure within broader socio-economic structures or systems. Possible evidence of systemic failure is provided by analysing interactions with the police prior to homelessness. There is a clear rise in interactions with the police for both family and lone-person households prior to entering homelessness services. The increase in interactions may suggest an unmet support need from the household that the police may not most suitably meet. PWEH experience crises which involves the police, for example that 24 per cent of all interaction for PWEH were for concern for safety and in half of these the PWEH was the subject, but they may be better supported by other services. Therefore, whilst this analysis can be used to identify areas which may suggest an opportunity to explore more early intervention, there may also be space to consider the role of the police in homelessness prevention.

The findings in this chapter also found that most of those who have interacted with the police in the 30 days before their homelessness event had at least one other interaction in the year leading up to their homelessness. Further, 46 per cent had one or two interactions before their homelessness and 28 per cent had between five or ten interactions with the police before their homelessness crisis. This may indicate multiple missed opportunities to prevent homelessness. However, the role of the police in preventing homelessness has yet to be explored within the literature. Evidence suggests that services may have a role to play in preventing homelessness each time they interact with a person. This is reflected in the reorientation of international homelessness policy towards avoiding the harms of homelessness rather than services acting after a crisis (Shinn et al. 2001; Burt et al. 2006; Busch-geertsema and Fitzpatrick 2008). Despite the turn to prevention and rapid rehousing, albeit in different ways, in England, Wales and Scotland, the role of services outside of homelessness services are not routinely playing a role in preventing homelessness (Mackie 2015).

7.3.4 Homelessness, gender, and violence

The analysis demonstrated that PWEH with dependants⁸ had a sharp peak in interactions for Violence Against the Person prior to their homelessness event. Although both households with and without dependants demonstrate broadly similar patterns of increasing involvement with the police prior to the homelessness event, there are clear differences in the patterns of interaction between lone-person households and households with dependants. This finding contributes to the growing consensus in homelessness literature that it is a gendered phenomenon (Reeve 2018). Evidence recognises the role of violence in women's homelessness (Baptista 2010; Busch-Geertsema et al. 2010) and domestic violence is a frequent precursor of family homelessness and is said to cause a rift in the idealised notions of home (Meth 2003).

This analysis has already established that the interactions between PWEH and the police are largely not occurring through criminalising those in public spaces. Instead, these interactions connect to the binary notion of homelessness: private space and

⁸ Of all individuals within homelessness cohort at the time of application, 22 per cent were female headed with dependants, one per cent male headed with dependants and seven per cent couples with dependants.

home. Feminist geography has unpicked how women are intrinsically linked to idealised notions of home and how domestic violence interplays with the home space as one where patriarchal relations are enacted (Duncan 1996; McDowell 1997). The analysis in this chapter suggests a requirement to shift the focus of research on homelessness and the police away from public spaces to focus more on the spatiality of homelessness and the home. Home is an ambiguous concept, with many associations; safety, protection, exclusion and regulation and whilst some evidence has focused on home-making during homelessness, the analysis in this chapter has revealed a lack of engagement with the role of the police in the home for people experiencing homelessness (Brickell 2012).

In Gowan's (2010) study, homelessness is both highly gendered and racialised; the participants in her study are all male and mostly Black. This chapter has not been able to explore ethnicity as it was not included in the police dataset so was not available for the comparator NKHS group. Gowan (2010) draws attention to the gendered and heteronormative assumptions that are central to deserving/undeserving narratives in welfare entitlements. In her USA-focused analysis, men's role is to provide for their families and the failure to do so leads to a host of negative stereotypes. Gowan (2010) suggests that women are privileged regarding welfare entitlements, particularly if they have children, which may be true regarding accessing the welfare safety net but is accompanied by similarly sexist stereotypes which position women according to normative assumptions as either homemakers or deviants. The majority of men in Gowan's (2010) study are positioned at the nexus of two groups subject to so-called 'rabble management', Black, Asian or Minority Ethnic lower socio-economic class men. Rabble management is the precursor to current sin-talk narratives of control and separation of those at fault for falling into poverty and or addiction.

The racialised gendered picture Gowan (2010) paints can be seen as the other face of homelessness compared to this research. The analysis in this chapter has also revealed that homelessness is gendered and interactions with the police often precede women's homelessness due to Violence Against the Person in this study. This study has similarly found and demonstrated quantitatively, that women experience a specifically gendered form of disadvantage that means that women are deprived in terms of housing production, allocation, state surveillance, and at risk of domestic violence (Bowpitt et al. 2011; Bretherton 2017). This is demonstrated in the data

analysis in this thesis, as it shows who is seeking support through statutory homelessness services and is subject to the state's regulations around housing allocation.

7.4 CHAPTER CONCLUSION

This chapter has found that there is evidence of a relationship that is under-theorised within the literature. This chapter has found evidence of a very high level of overlap between homelessness services and the police and that the police are regularly engaging with PWEH but in a completely distinct way from some of the established criminalised public space focused discourse (O'Sullivan 2012; Hennigan and Speer 2019). This may conceptually move the police away from acting in 'sin talk', to criminalise PWEH or 'sick talk', as agents of social control acting in the 'best interests' of PWEH, but instead, they are responding to protect or secure PWEH safety – what I refer to as 'safety talk'. This may reflect the role of the police in society more broadly, where the police are seen to play a role in providing safety for victims through their ability to use force. However, the data is limited in its potential to conceptualise or place a normative framework around these interactions without more information.

This chapter has found that there is some evidence in the data of the patterns associated with 'sin talk'; with a low frequency of interactions for drugs and ASB and the overall level of theft interactions is very low, suggesting a minority of PWEH are being charged with theft. It is suggested that this indicates a greater complexity in how the relationship between homelessness and the police is perceived, which is at times overlooked in the literature, particularly in studies focusing on so-called "quality of life" policing or the "revanchist city." (O'Sullivan 2012; May and Cloke 2014; Clarke and Parsell 2020). It is argued that the spatial focus of research on the police and homelessness needs to be shifted away from focusing on interventions into shelterless homelessness, primarily on the street and into other spaces where a person may be homeless. This is partly due to the lack of evidence on ASB, drugs or other non-public space-focused interaction for homeless people who are not shelterless but also because of the link this thesis has established between a peak in interactions for Violence Against the Person for PWEH with dependents. This chapter reinforces existing evidence on the gendered basis of homelessness and

domestic violence, demonstrating how patterns in violence differ for lone PWEH and those with dependents (Bassuk et al. 2001; Pleace et al. 2008; Bretherton 2017).

This chapter has also contributed to the evidence base on coercive care and the role of the police in the social control of PWEH (Johnsen and Fitzpatrick 2010; Watts et al. 2018; Bloch 2021). It found that the most frequent way that PWEH interacted with the police was because of a Concern for Safety, and that Concern for Safety interactions peaked around a person's homelessness event. This suggests two possible conclusions: firstly, that considerations of coercive care can also be applied to a broader definition of homelessness than previously found in the evidence, and secondly that it may suggest a need for system talk. It is proposed that the findings may demonstrate systemic failure for those who are experiencing crises, which are being responded to by the police rather than a traditionally therapeutic service, although the data explored in this chapter is limited in its explanatory potential beyond what has been observed.

8 Conclusion

This research aimed to contribute to the development of administrative data linkage as a method for the study of homelessness in the UK, specifically how these novel methods alter our understanding of homelessness.

The research objectives are:

1. To determine the feasibility of undertaking the linkage and analysis of administrative homelessness data in Wales.
2. To explore how people who have experienced homelessness interact with three key institutions: statutory homelessness services, emergency health services and the police.
3. To examine heterogeneity in the service interactions of people who have experienced homelessness, based on individual and household characteristics.

This concluding chapter argues this unique linkage of three administrative datasets provides a rare empirical contribution that challenges prevailing ‘talks’ (Gowan 2010) and discourses surrounding homelessness. The first section responds to the first objective, addressing the analysis and linkage of administrative data. Next, rather than respond to the second two objectives in turn, the conclusions are framed around four emergent themes: 1] discourses of sick talk across institutions; 2] from sin talk to safety talk; 3] system talk and harm prevention; 4] a diversity of interactions. Under each theme, the key empirical, theoretical, and policy/practice contributions are discussed.

8.1 THE FEASIBILITY OF LINKAGE AND ANALYSIS OF HOMELESSNESS DATA

While this thesis found administrative data and data linkage could improve the evidence base on the experiences of homeless people in Wales, routinely using these data and methods will also necessitate overcoming the challenges faced over the course of this thesis. Some of these challenges stem from the origins of administrative data, which is created for organisational processes, rather than being designed for the conduct of research. This can lead to poor data quality which particularly effects variables needed to link data. However, where organisational processes involve using administrative data to routinely monitor service provision, this may lead to better quality data. The police data is based on a detailed coding frame set out in the National Standard for Incident Recording, and there is similar guidance for health data. This guidance is used across police forces. In contrast, this does not exist for homelessness data. The linkage between homelessness, A&E and police data illustrated the difference that precise recording guidance and history of organisational use and linkage of their administrative data makes. This is evident from the police and A&E datasets, where the no match or fuzzy matching with less than 50 per cent probability⁹ (no match) rates were low. 'No match' rate for A&E data was 0, whilst the 'no match' rate for police data was 9.1 per cent of the total dataset. Both organisations have stronger organisational norms relating to data management. This is compared with the high 'no match' rate for the homelessness dataset, which was 24.65 per cent of the total dataset. It is suggested that a common coding framework with clear definitions could be developed for local authorities when inputting their homelessness data, which would create consequential improvements to data quality and therefore researchers ability to use them for analysis.

Although using the SAIL deidentification process across datasets is highly beneficial for research using administrative data, as it means the time and technical expertise required to ensure ethics via privacy is reduced, it may have contributed to the lower match rate of the homelessness data. Homelessness is a transitory move through

⁹ the MACRAL uses probabilities to match via NHS number or across variables for surname, first name, postcode, date of birth and gender (Lyons et al. 2009). The probabilities generated are the odds that a match is correct.

living situations, and people are likely changing addresses or not at a known address. This lack of a home is intrinsic to homelessness. However, the address history is a key part of the identification process to match a person to their unique identifier across datasets (Lyons et al. 2009). The lower match rate to unique identifier for the homelessness data may be attributed to nature of homelessness. The lower proportion of service users linked to known combinations of addresses, date of birth and names meant that less data could be used for the overall analysis. The limitations of the recording of address history and the consequential impacts on match rates requires further consideration for future homelessness data linkage.

As neither the police nor the homelessness data sets had previously been used for data linkage, significant time was spent understanding their composition and ensuring the analysis was robust and accurate. For example, in the cleaning of the homelessness dataset, it was necessary to exclude the 'cause of homelessness' variable, as 26 per cent of the data was missing, as detailed in Chapter 5. The police dataset also had a particularly complicated structure due to the multiple individuals often recorded as linked to a police event. This included events where the same individual was (correctly) coded as 'subject' and 'aggrieved' within an event and an approach needed to be decided on how to treat these events. As this project is the first to link and analyse police interaction data, little is known about how the data was coded and entered into police systems. There are further questions, beyond the scope of this thesis, regarding how police personnel categorize interactions, and the decision-making processes involved in their recording. It is likely that, as with any administrative data, complex factors influence how individual police officers on a given day code an interaction, particularly those that fall outside of the more clearly defined 'crime' categories. Further research is needed to better understand how this data is collected, which could strengthen the quantitative analysis of the data itself. Unlike in survey data, where the questions and categories are set by researchers, in administrative data these are set by the organisational priorities. These organisational priorities may change over time with implications for the data sets generated. Future projects using administrative data that has not been previously used for research must be flexible enough to account for unforeseen aspects of the datasets or coding. An important process when engaging in secondary data analysis is understanding the structure and coding of the dataset before any analysis can be undertaken (Thomas

2020). However, the time taken to acquire the datasets for analysis can impact on project timescales, and therefore reduce the time available for familiarisation.

The conclusions of the study are contingent on the data used for the analysis and the strengths and limitations of the data should be considered alongside the empirical findings of this research. The largest factor, both a strength and limitation, is the definition of homelessness used for the analysis. The definition was broad and led by both the data and the ETHOS typology (Edgar and Meert 2005). All of those approaching homelessness services were included in the analysis, rather than just those who were recorded as receiving statutory entitlements, this is likely to have implications on the findings. It may mean that individuals and families approaching homelessness services would not be subjectively defined within the ETHOS typology (Edgar and Meert 2005). Any evidence on homelessness and service interactions should be contextualised by the cohort of people experiencing homelessness identified in the research. Drawing on the evidence on the dynamic nature of homelessness, most homelessness is transitory, that is, people are homeless once, for a short period (Aubry et al. 2012; Benjaminsen and Andrade 2015). This is likely to be the case for the majority of people captured in the homeless cohort of this study, as this thesis followed a cohort broadly defined under ETHOS (Edgar and Meert 2005). This differs from the cohort captured in many largescale quantitative epidemiological studies on homelessness which O'Sullivan et al. (2020) argue captures chronically or entrenched homeless groups, generally focused on those passing through shelter systems. The definition of homelessness used in this thesis therefore allows for a more meaningful exploration of other forms of homelessness, reflected in the findings on the heterogeneity of interactions with the police and A&E services. Although all research projects must negotiate gatekeepers, there were significant delays when accessing the police and homelessness data, with it taking several years for these data to be deposited in the SAIL Databank. This protracted period of data acquisition reduced the amount of time for familiarisation with the data. The uniqueness of the data also compounded the reduction in familiarisation time. Within homelessness literature there were comparatively fewer research studies on police interactions, meaning that there was less literature to draw on compared with the large epidemiological literature on the use of A&E data for analysis of the experiences of homeless people. In addition to the lack of previous research examples, the police data had not been put into a 'safe

haven' before, meaning no other researchers had expertise in analysing the data. This is in direct comparison with the A&E data which was already in the SAIL Databank, with information on the data coding and experience in making it research-ready, reducing the familiarisation time needed. As demonstrated the systematic review undertaken by Moorthie et al. (2022) researchers' ability to use administrative data is still limited by the difficulty and time required in negotiating access. However, over the duration of this PhD there have been moves towards the increasing use of administrative data for research and progress has been made in supporting access. This is demonstrated by the recent studies using administrative to explore the health of people experiencing homelessness in Wales (Song et al. 2021; Thomas and Mackie 2021).

The most pressing factor limiting the future feasibility of using administrative data linkage to provide evidence on homelessness in Wales, is a lack of centrally collected individual-level data. Welsh Government currently collect aggregate data on people assessed by statutory homelessness services in Wales. Local authority housing teams each collect data on the cases for support they assess under the Housing (Wales) Act 2014; meaning 22 data acquisitions would be required to amass these data collections from across Wales. Once gathered, the challenges encountered in this thesis when using a single local authority's data (i.e., data recording and quality) would need to be managed across local authorities; as Thomas (2020) describes, there are differences in recording and storage of data driven by a lack of direction from Government. The Welsh Government have previously considered a shift from aggregate to individual-level data recording and linking to improve the quality of evidence on homelessness for more effective policy responses, with this shift being advocated by the housing and homelessness support sector in Wales (Thomas, (2020). This shift in data collection processes would bring Wales in-line with England—who started collecting individual level data in 2018 following the Homelessness Reduction Act 2017, and Scotland where individual level data has been collected since 2001, following devolution.

8.2 ANALYSING INTERACTIONS WITH INSTITUTIONS AND DRAWING OUT HETEROGENEITY

This thesis's second key overarching contribution is demonstrating that administrative data can be utilized to research the experiences of a diverse range of statutory

homelessness service users. It identifies both similarities and differences between individuals experiencing homelessness and their housed counterparts. Furthermore, it provides evidence on the feasibility of using administrative data to build quantitative insights for groups of service users where evidence gaps exist. The analysis within this thesis enriches the evidence base regarding interactions with A&E and police services for both men and women, as well as for single households and those with dependents. This thesis challenges prevailing assumptions in the epidemiological literature by demonstrating that some people experiencing homelessness (PWEH) will interact with A&E services in ways similar to those not known to homelessness services. They are typically discharged to their GP, arrive via personal vehicle or ambulance, sustain comparable injuries, and attend A&E across similar triage categories and seriousness levels. This contrasts with existing largescale, quantitative epidemiological studies, which suggest PWEH are more likely to attend A&E for issues such as substance use, mental health crises, or other complex health conditions (Moore et al. 2007; Ku et al. 2010; Hwang et al. 2005).

However, the results in this thesis have also explored the significant association between homelessness and frequent attendance at A&E, even when controlling for various factors. Two perspectives emerge: one attributes this pattern to individual issues such as mental health challenges and substance abuse (Gowan, 2010), while the other highlights systemic failures to provide adequate housing and health support (Gowan, 2010). This may challenge the 'sick' and 'sin' narratives discussed by Gowan (2010) and aligns with the work of O'Sullivan et al. (2020) and Johnsen et al. (2018), who advocate for a deeper understanding of the intricate realities of homeless service users' lives. Their perspectives call for moving beyond conventional normative discourses that often rely on explanations rooted in pathology or criminality for those who have experienced homelessness.

The thesis then contributes to the development of a new framework called "safety talk," identifying a distinct pattern of interactions between police and people experiencing homelessness (PWEH). These protective incidents, where police involvement is required, do not align with dominant perspectives such as "sin talk" or "sick talk," nor do they fit within the typology of social control. Instead, "safety talk" offers a better understanding of these interactions. The conclusions use the concept of "system talk" to interpret the findings and advocate for enhanced homelessness prevention

measures. It suggests that reductions in social welfare services have increased police involvement in managing non-criminal crises, highlighting systemic failures and missed opportunities for early interventions to prevent homelessness.

8.2.1 Exploring discourses of sick talk across institutions

The extent to which the analysis on A&E interactions use may show evidence for sick talk is complex, insights drawn from the analysis of A&E data present a nuanced picture of the potential health needs of people who have experienced homelessness. "Sick talk" implies that homelessness is caused by an underlying pathology that requires treatment. This thesis found some similarities in A&E interactions between individuals known to homelessness services and those not known to such services. This finding aligns with Research Objective 2, which focuses specifically on A&E interactions. While the A&E dataset used in this thesis highlights only a subset of the health interactions an individual might experience over their lifetime, evidence suggests that many people experiencing homelessness rely on A&E services due to fewer barriers compared to primary care access, meaning the analysis may show an important pattern of interactions (Jackson et al., 2024).

This contrasts with much of the broader epidemiological quantitative literature which draws solely on A&E data, which suggests that people experiencing homelessness are more likely to attend A&E for issues related to drug use, alcohol, mental health, or specific injuries such as falls, cold exposure, burns, poisoning, victimization by assault, and other serious or complex health conditions (Geddes and Fazel, 2011; Hwang and Burns, 2014; Fazel et al., 2015). These A&E visits are often associated with the perception that homelessness results from substance misuse or mental health challenges. O'Sullivan et al. (2020) argue that common methodological constraints and consequential help to reinforce this perception. O'Sullivan et al. (2020) suggest that the representation of homelessness in much of the existing evidence fails to capture its complexity, overlooking the diversity of personal circumstances and life experiences that shape the phenomenon.

The findings in this thesis may reflect the specific focus on A&E data and the use of a broad definition of homelessness, rather than emphasizing the experiences of chronically homeless groups. Evidence of varying types of health interactions across different datasets is supported by findings from Waugh et al. (2018), which analysed

the health interactions of all individuals entering statutory homelessness services in Scotland. Both this thesis and Waugh et al. (2018) observed that the majority of the ever-homeless cohort showed no evidence of mental health, drug, or alcohol-related issues. However, Waugh et al. (2018) identified higher rates of drug and alcohol-related problems compared to this study, by utilizing other health datasets.

The finding that there are less interactions for the most commonly pathologized aspects of homelessness suggest an avenue for further research. Drawing on insights from Waugh et al. (2018) in Scotland, future research could enhance its scope by integrating additional health datasets—such as prescription records, GP data, mental health admissions, and drug misuse records—to investigate health inequalities more comprehensively. Findings from Waugh et al. (2018) indicate that additional health inequalities may exist, which A&E data alone cannot capture. This underscores the importance of future data linkage to better understand the broader health interactions of people experiencing homelessness. It is possible that some of the findings of this thesis may suggest sick talk is more prevalent in the interactions between the police and people experiencing homelessness. The interaction between the police and statutory homeless people in the UK was yet to be explored prior to this study. The most frequent reason people who had experienced homelessness interacted with the police was Concern for Safety: 24 per cent of their overall interactions. People who had experienced homelessness were more frequently the Subject of Concern for Safety interactions (46 per cent vs 32 per cent), whereas those not known to homelessness services more frequently reported Concern for Safety to the police (21 per cent vs 34 per cent). A possible lens with which to conceptualise the interactions between police people who have experienced homelessness is sick talk; this is an extension of the concept of coercive care or paternalism in the lives of people experiencing homelessness, where the police are just one part of a typology of social control and act to safeguard or intervene (Johnsen et al. 2018). The Concern for Safety interactions may fit within a typology of social control, as they are interventions by the police in homeless people's lives but are not part of their role in 'fighting crime'.

Evidence shows that police in the USA feel they have a coercively caring role in addressing the ill health of people experiencing homelessness (Hennigan and Speer 2019). This is echoed in the UK literature on interventions for rough sleepers where the role of power and control has begun to be theorised for rough sleepers (Fitzpatrick

and Watts 2017; Watts et al. 2018). However, this has not been done for other forms of homelessness and not for the types of interactions between people experiencing homelessness and the police found in this thesis. The focuses of coercive care in the studies by Watts et al. (2018) and Johnsen et al. (2018) are different as they focus on the behavioral change of the most marginal people experiencing homelessness rather than the broad cohort in this study. It is proposed that further research should explore if the concept could be extended to consider other forms of homelessness outside of rough sleeping. It is suggested as an area for future research to identify if these interactions fit in the current understanding of social control of people experiencing homelessness or are distinct. This gap may be best answered through qualitative research, which can uncover more of the ways people feel through these interactions and contribute more detail about the interactions themselves. It is suggested that a deeper engagement with theories on interventionism, as has started to take place for street homeless people, needs to be undertaken for homelessness more widely, given the relationships found in this research.

8.2.2 From sin talk to 'safety' talk

The new concept of 'safety talk' is the next contribution to be discussed. Safety talk is the police providing protection via coercive power for the people who are experiencing homelessness. This is evidenced by the way in which people who are experiencing homelessness interact with the police in the data (See Chapter 7): they are more often the subject or witness to an incident rather than the perpetrator. It is also the type of incident that people who are experiencing homelessness are most frequently involved in: Domestic Incidents and Violence Against the Person.

Nevertheless, it is important to reiterate the complexity of the findings, interaction variation was observed in the police data, where a small group of people experiencing homelessness had interactions for some of the reasons indicated by the literature: theft, drugs, and anti-social behavior. There was evidence for a higher frequency of people who had experienced homelessness being charged for theft interactions than those not known to homelessness services. There was also evidence that some people who had experienced homelessness were involved in anti-social behavior and drugs. Still, these were very low compared with the other reasons for interaction. Drugs made up just two per cent of all people who had experienced homelessness's interactions, and ASB nuisance just five per cent. Without being understood in the

context of the wider patterns in the data, these would likely contribute to a discourse of sin talk. This demonstrates the value of considering broad patterns in interaction using the administrative data accessed for this research, as it shows how easily a focus on this small number of interactions can contribute to narratives of immorality and pathology of people experiencing homelessness.

There was a high level of interaction between the police and for both people who have experienced homelessness and people not known to homeless services, for Domestic Incidents and Violence Against the Person. Domestic incidents are designed to capture civil disputes within a relationship and may be used to capture incidents which fall outside of definitions of domestic violence (National Standard for Incident Recording, 2011). Violence Against the Person is a type of crime. For these two types of interaction, people who have experienced homelessness were mostly commonly victims/subjects or witnesses. In half of the Violence Against the Person interactions, the PWEH were victims or witnesses, and in only 12 per cent of the Violence Against the Person interactions, people who have experienced homelessness were charged. The police also frequently interacted with people who have experienced homelessness for Domestic Incidents (13 per cent of all interactions); in 45 per cent of these, the PWEH were the subject, and in 26 per cent, the person reporting. As well as the frequency of the interaction and type of involvement, the type of incident is important to safety talk. Violence Against the Person was the second most frequent type of interaction between the police and people who have experienced homelessness, and Domestic Incident was the third.

This thesis found that these types of incidents, distinct from ideas of deviance or social control, are some of the most frequent ways that PWEH interact with the police. It is proposed that this is not understood in relation to typical understandings of homelessness and crime. These types of interaction with police do not fit with dominant views of sin talk or sick talk, nor in the typology of social control. It is suggested therefore that the police as an instrument of social control are not being used to change the behaviour of a person experiencing homelessness, as they are characterised in Johnsen et al. (2018). These are incidents in which people who are experiencing homelessness need protection by the police. This moves outside of the theoretical framework used in this thesis. It is suggested that these interactions should be understood as a new talk: 'safety' talk. Whilst the analysis of the data in this thesis

has supported the conception of a new talk, it should be noted that there are limitations to the conclusions that can be drawn. It would be beneficial to the conceptualisation to have multiple data sources, particularly further qualitative analysis, as it is not possible to know from this thesis how participants feel or think during these interactions with police. This is an avenue for further research.

The types of incidents (Violence Against the Person and Domestic Incidents) that predominantly make up 'safety talk', are closely associated with evidence on domestic violence as a cause of women's homelessness (Netto et al. 2009; Thurston et al. 2013; Bretherton 2017). It is proposed that this evidence base on domestic violence also provides further evidence for 'safety talk'. The analysis on the longitudinal relationship between homelessness and police interaction in Section 7.2.3 demonstrates that there is a sharp rise in Violence Against the Person interactions prior to homelessness for people who have experienced homelessness who have dependents (primarily women), which differs from the pattern of interactions around the homelessness event for single households. This finding contributes to the growing consensus in homelessness literature that it is a gendered phenomenon (Reeve 2018). Evidence recognises the role of violence in women's homelessness (Baptista 2010; Busch-Geertsema et al. 2010), and domestic violence is a frequent precursor of family homelessness. These patterns of violence and protection found in this analysis contribute to the evidence base on the extent to which domestic violence is implicated in homelessness. The relationship between homelessness pathways and police interaction had yet to be explored quantitatively, and this thesis contributes to the understanding of the links between these parts of the archipelago. As quantitative homelessness research predominantly focuses on the experiences of rough sleepers and male homelessness (Lee and Schreck 2005; Newburn and Rock 2006; Larney et al. 2009; Nilsson et al. 2020), this analysis adds to our understanding of other forms of homelessness and the relationship between homelessness and the police.

8.2.3 System talk and harm prevention

The next contribution of this thesis centres on system talk and the opportunity for earlier homelessness prevention action. The research clearly shows that, amid cuts to social welfare service provision, police are frequently responding to non-criminal crises. I argue that this is an example of social welfare system failure, whereby opportunities to act early and prevent homelessness are missed. For example, the

findings in Chapter 7 which analysed the longitudinal relationship between a person's homelessness event and interactions with police, may have identified opportunities to act early on homelessness across each of the main interaction types focused on. The findings showed that all types of interaction peak around a person homelessness event: Concern for Safety, Violence Against the Person and Domestic Incidents all reach their highest level in the 30 days before homelessness and Theft reaches the highest level in the 30 days after homelessness.

Adopting a systems talk approach; it is possible to identify opportunities to prevent homelessness. Homelessness policy across the UK is reorienting towards the prevention of homelessness, with the Housing (Wales) Act 2014 placing a duty on local authorities to prevent homelessness, with similar duties in the Homelessness Reduction Act (2017) in England and Scotland making similar moves (Mackie et al. 2017; Fitzpatrick et al. 2021). Partnership between public services is a key theme within The Housing Act (Wales) 2014, which includes a duty for services to cooperate and assist local authorities in preventing homelessness. The findings in this thesis showed that most people who interacted with the police 30 days before their homelessness event had at least one other interaction in the year leading up to their homelessness. Further, 46 per cent had one or two interactions before homelessness, and 28 per cent had between five and ten interactions with the police before their homelessness crisis. This finding may indicate multiple missed opportunities to prevent homelessness. This finding may also help and support evidence for the development and targeting of primary prevention. The targeting of primary prevention is one of the most significant challenges to services wishing to undertake it (Culhane et al. 2011). Primary prevention is challenging because identifying and acting on the causes of homelessness is highly complex (Culhane et al. 2011). However, the role of the police in preventing homelessness has yet to be explored within the literature. This would be a useful area of further research to determine how these interactions may be used to prevent homelessness, if it found that the increase in police interactions is linked to the causes of homelessness. This would be a significant step forward in our understanding of how to target homelessness prevention.

These structural and system challenges are an example of systems talk, whereby systems are either causing homelessness or, in this case, failing to prevent it. When sin talk or sick talk are used, Gowan (2010) suggests that they generally preclude

more radical notions of solving homelessness, which could be achieved through system talk and making greater demands on social welfare systems. Sin talk calls for control and punishment, and sick talk behaviour changes of a person's pathology. Neither of these talks gives much space for a call for structural systems change. The overall level and type of interactions between the police and people who have experienced homelessness demonstrate the second area of possible systematic failure. This thesis has explored more frequently attended A&E and extensive evidence of people who have experienced homelessness interacting with the police. The data used does not have information on how any of those involved experienced the interactions, and future research is needed to understand these interactions better, but it does show macro-level patterns. It is proposed that these patterns may demonstrate systemic failure for those experiencing crises which are being responded to by the police rather than a traditionally 'supportive or caring' service. Literature suggests that the police are often first responders in situations that other services may better manage (Lane 2019; Cummins 2023). This thesis does not shed light on what is being recorded as a Concern for Safety or Domestic Incident, but the analysis in this thesis demonstrates the extent to which the police interact with people who have experienced homelessness; this may be evidence of a larger issue the police face, where they are required to act as 'quasi-social workers' for vulnerable people in crisis (Cummins 2023). Research with the police suggests they do not feel properly equipped to support vulnerable people in crisis, and this is not perceived as a good use of police resources (Lane 2019). Some scholars argue that this aspect of policing has increased due to austerity, or the underfunding of public services and welfare benefits (Lane 2019; Cummins 2023).

8.2.4 Systems talk, sick talk and emergency healthcare

Next, moving the system talk lens to consider the findings on A&E interactions. If it is unclear the extent to which the pathology ascribed to homelessness can be observed. The biggest difference between people who had experienced homelessness and those not known to homelessness services was in the analysis of frequent attendance. Homelessness was significantly associated with frequent attendance, even when controlling for other factors, including triage code, sex, age, ever arriving in an ambulance, or self-discharge without consent. This could be considered as evidence for the 'disease' and individual issues leading to homelessness that require treatment

for a person's homelessness to end (Gowan, 2010). That homelessness primarily stems from the severe mental health challenges and substance abuse problems of a minority of flawed characters, rather than being closely linked to the broader working and housing conditions affecting the majority (Gowan, 2010).

Alternatively, applying the system talk lens, the fact that people who have experienced homelessness more frequently interact with A&E is a failure of the systems that should support a person to be housed and in good health (Gowan 2010). Within the A&E data, there was evidence of some health inequalities for some people who had experienced homelessness. There were some differences in the frequencies for discharge without consent, arrival by a police car, and the seriousness of some of the attendance by triage codes. The key differences indicating greater health inequalities were differences in discharge routes. The evidence on A&E interaction aligns with existing UK-based evidence on the barriers faced by all of those experiencing homelessness, not only rough sleepers, in accessing appropriate and effective healthcare (Jackson et al., 2024). Fewer people who had experienced homelessness were discharged to primary care, and there was a higher frequency of self-discharge without consent. This was a key finding on the ways that A&E interactions differed and suggests a gap in the evidence as it is not generally identified when considering the A&E use of people who have experienced homelessness. However, when drawing insights from evidence outside of homelessness, it indicates poorer outcomes for people who are self-discharging without consent and possibly unmanaged health conditions (Yogendran and Karut, 2013). Further research could consider this further, possibly by linking additional administrative health datasets to determine what other factors may explain this pattern.

Frequent attendance at A&E may be a conceptually distinct issue for some homeless service users that, when looking at the data available, was not also linked to substance or alcohol misuse. However, this may be due to poor recording of these data fields in the A&E data itself. This is a limitation of the use of the specific administrative data sets used. The findings from the regression on frequent attendance may instead be evidence of health inequalities outside of those most often described in the epidemiological literature (Geddes and Fazel, 2011). It was also hypothesised that the relationship between homelessness and frequent attendance did not align with evidence on multiple exclusion homelessness. This was because factors associated

with multiple exclusion homelessness were not significant within the regressions (England et al., 2022). It is hypothesised that overall, in the A&E data, multiple exclusion homelessness is such a small proportion of the overall cohort of people experiencing homelessness that it was not possible to identify these health interactions in this study. It may also be due to the quality of coding of the A&E data fields that were available and may align with MEH literature. This would be a beneficial area of further study to combine the A&E data with other datasets where MEH homelessness may be easier to identify.

It was clear that frequent attendance was a key finding on the differences in people who had experienced homeless interaction with A&E, and few of the variables available within the A&E datasets were able to explain this difference. This is also a potential avenue for further research to determine what underlying differences may drive the pattern and if it does show an avenue for system talk. The analysis in the thesis is limited by the data available within the A&E dataset, and further analysis and data linkage may be useful to consider other patterns, such as those described by Waugh et al. (2018), who found more evidence of health inequalities through drawing on additional administrative health data and linking it to homelessness records.

8.3 IN CONCLUSION

The findings have challenged the predominance of sin and sick talk in homelessness, finding a complex picture of interactions with emergency health services and the police. This thesis has argued for a greater consideration of system talk, which gives greater space for structural change to aid the reduction of homelessness. Some evidence is also found to support a fourth talk – safety talk – which conceptualizes the role of the police, and their ability to use force, on the safety of people who have experienced homelessness.

Being one of the first studies in Wales to link statutory homelessness data to healthcare data, and the first study in the UK to link to police data, this thesis contributes novel insights into the future use of data linkage in the field of homelessness research in the UK. It concludes that administrative data have a unique role in supporting our understanding of homelessness, particularly in understanding the diversity of experiences and interactions included under the umbrella term of 'homelessness'. Through the linkage of data sources, a more nuanced picture of the

experience of homelessness can be generated. Specifically considering Wales, it is hoped that the findings can contribute to advancing the aim of the Welsh Government in moving towards individual-level data collection on homelessness to enable them to design policies to end homelessness.

9 Reference list

- Aidala, A. Cross, J.E. Stall, R. Harre, E. Sumartojo, E. 2005. Housing status and HIV risk behaviors: Implications for prevention and policy. *AIDS and Behavior* 9(3), pp. 251–265.
- Alden, S. 2015. Discretion on the Frontline: The Street Level Bureaucrat in English Statutory Homelessness Services. *Social Policy and Society* 14(01), pp. 63–77.
- Allgood, S Moore, M.L. and Warren Jr, R.S., 1997. The duration of sheltered homelessness in a small city. *Journal of Housing Economics*, 6(1), pp.60-80.
- Amore, K., Baker, M. and Howden-Chapman, P. 2011. The ETHOS Definition and Classification of Homelessness: An Analysis. *European Journal of Homelessness* 5(2), pp. 19–37.
- Anderson, I. 2003. Synthesizing homelessness research: trends, lessons and prospects. *Journal of Community & Applied Social Psychology* 13(2), pp. 197–205. doi: 10.1002/casp.721.
- Anderson, I. 2007. Tackling street homelessness in Scotland: The evolution and impact of the rough sleepers initiative. *Journal of Social Issues* 63(3), pp. 623–640.
- Anderson, I. and Christian, J. 2003. Causes of Homelessness in the UK: A Dynamic Analysis. *Journal of Community and Applied Social Psychology* 13(2), pp. 105–118.
- Anderson, I., and Serpa, R., The Right to Settled Accommodation for Homeless People in Scotland: A Triumph of Rational Policy-Making? *European Journal of Homelessness* 7(1) pp. 13-39
- Anderson, I., Kemp, P. and Quilgars, D.1993. *Single Homeless People*. London: HMSO
- Anselmi, L., Meacock, R., Kristensen S. R., 2017. Arrival by Ambulance Explains Variation in Mortality by Time of Admission: Retrospective Study of Admissions to Hospital Following Emergency Department Attendance in England. *BMJ Quality & Safety*. 26, pp. 613-612
- Atherton, I. and McNaughton Nicholls, C. 2008. 'Housing First' as a means of addressing multiple needs and homelessness. *European Journal of Homelessness* 2, pp. 289–303.
- Aubry, T., Farrell, S., Hwang, S.W. and Calhoun, M. 2013. Identifying the Patterns of Emergency Shelter Stays of Single Individuals in Canadian Cities of Different Sizes. *Housing Studies* 28(6), pp. 910–927.
- Aubry, T., Klodawsky, F. and Coulombe, D. 2012. Comparing the Housing Trajectories of Different Classes Within a Diverse Homeless Population. *American Journal of Community Psychology* 49(1–2), pp. 142–155. doi: 10.1007/s10464-011-9444-z.
- Baillargeon, J., Penn, J. V., Knight, K., Harzke, A.J., Baillargeon, G. and Becker, E.A. 2010. Risk of reincarceration among prisoners with co-occurring severe mental illness and

- substance use disorders. *Administration and Policy in Mental Health and Mental Health Services Research* 37(4), pp. 367–374. doi: 10.1007/s10488-009-0252-9.
- Ballintyne, S. 1999. Unsafe streets: The street homeless as victims of crime. *New Economy* 6(2), pp. 94–98.
- Baptista, I. 2010. *Women and Homelessness*. In Mayock, P., Bretherton, J. (eds) *Homelessness Research in Europe*, London: Palgrave Macmillan. pp. 163–185. doi: 10.1080/03033910.1990.10557790.
- Baptista, I., Benjaminsen, L. and Pleace, N. 2017. *Family Homelessness in Europe*. Brussels: FEANTSA Available at: https://www.feantsaresearch.org/download/feantsa-studies_07_web3386127540064828685.pdf. [Accessed 25 October 2019]
- Barrow, S.M. and Laborde, N.D. 2008. Invisible Mothers: Parenting by Homeless Women Separated from Their Children. *Gender Issues* 25(3), pp. 157–172. doi: 10.1007/s12147-008-9058-4.
- Bassuk, E.L., Geller, S. 2017. The role of housing and services in ending family homelessness. *Housing Policy Debate*, 17(4) pp.781-806. doi: 10.1080/10511482.2006.9521590.
- Bassuk, E.L., Perloff, J.N. and Dawson, R. 2001. Multiply homeless families: The insidious impact of violence. *Housing Policy Debate* 12(2), pp. 299–320. doi: 10.1080/10511482.2001.9521407.
- Beijer, U., Wolf, A. and Fazel, S., 2012. Prevalence of tuberculosis, hepatitis C virus, and HIV in homeless people: A systematic review and meta-analysis. *The Lancet Infectious Diseases* 12(11), pp. 859–870.
- Benchimol, E.I., Smeeth, L., Guttman, A., Harron, K., Moher, D., Petersen, I. and Sørensen, H.T. 2015. The REporting of studies Conducted using Observational Routinely-collected health Data (RECORD) Statement. *PLoS Medicine*, 12(10).
- Benjaminsen, L. and Andrade, S.B. 2015. Testing a Typology of Homelessness Across Welfare Regimes: Shelter Use in Denmark and the USA. *Housing Studies* 30(6), pp. 858–876. doi: 10.1080/02673037.2014.982517.
- Benjaminsen, L., Dhalmann, H., Dyb, E., Knutagård, M. and Lindén, J. 2020. Measurement of homelessness in the Nordic countries. *European Journal of Homelessness* 14(3), pp. 149–170.
- Bennewith, O., Peters, T.J., Hawton, K., House, A. and Gunnell, D. 2005. Factors associated with the non-assessment of self-harm patients attending an Accident and Emergency Department: Results of a national study. *Journal of Affective Disorders* 89(1–3), pp. 91–97. doi: 10.1016/j.jad.2005.08.011.
- Blakely, T. and Salmond, C. 2002. Probabilistic record linkage and a method to calculate the positive predictive value. *International Journal of Epidemiology* 31(6), pp. 1246–1252. doi: 10.1093/ije/31.6.1246.
- Bloch, S. 2021. Police and policing in geography: From methods, to theory, to praxis. *Geography Compass* 15(3), pp. 1–13. doi: 10.1111/gec3.12555.
- Bohensky, M. 2016. Bias in data linkage studies. *Methodological Developments in Data Linkage*, pp. 63–82. doi: 10.1002/9781119072454.ch4.
- Bohnert, A., Bradshaw, A., and Latkin, C. 2009. A social network perspective on heroin and cocaine use among adults: evidence of bidirectional influences. *Addiction* 104(7), pp. 1210–1218.
- Bonevski, B. Randell, M., Paul, C., Chapman, K., Twyman, L., Bryant, J., Brozek, I. and

- Hughes, C. 2014. Reaching the hard-to-reach: a systematic review of strategies for improving health and medical research with socially disadvantaged groups. *BMC Medical Research Methodology* 14(1), p. 42.
- Bourgois, P. 1998. The Moral Economies of Homeless Heroin Addicts: Confronting Ethnography, HIV Risk, and Everyday Violence in San Francisco Shooting Encampments. *Substance Use and Misuse* 33(11), pp. 2323–2351.
- Bousquet, A. and Curtis, S. 2011. Beyond models and metaphors: Complexity theory, systems thinking and international relations. *Cambridge Review of International Affairs* 24(1), pp. 43–62.
- Bowen, E.A. and Murshid, N.S. 2016. Trauma-informed social policy: A conceptual framework for policy analysis and advocacy. *American Journal of Public Health* 106(2), pp. 223–229.
- Bowpitt, G., Dwyer, P., Sundin, E. and Weinstein, M. 2011. Comparing Men's and Women's Experiences of Multiple Exclusion Homelessness. *Social Policy and Society* 10(04), pp. 537–546. doi: 10.1017/S1474746411000285.
- Boyd, J.H., Ferrante, A.M., O'Keefe, C.M., Bass, A.J., Randall, S.M. and Semmens, J.B. 2012. Data linkage infrastructure for cross-jurisdictional health-related research in Australia. *BMC Health Services Research* 12(1). doi: 10.1186/1472-6963-12-480.
- Bramley, E.G., Fitzpatrick, S., Edwards, J., Ford, D., Johnsen, S., Sosenko, F. and Watkins, D. 2015. *Hard Edges Mapping severe and multiple disadvantage*. England: Lankelly Chase Foundation. Available at: <https://lankellychase.org.uk/publication/hard-edges/> [Accessed: 19 August 2020]
- Bramley, G., Fitzpatrick, S., McIntyre, J. and Johnsen, S. 2022. *Homelessness Amongst Black and Minoritised Ethnic Communities in the UK A Statistical Report on the State of the Nation*. Edinburgh: Heriot-Watt University. Available at: https://pure.hw.ac.uk/ws/portalfiles/portal/67022998/Technical_Report_State_of_the_Nation.pdf. [Accessed: 3 March 2020]
- Bretherton, J. 2017. Reconsidering Gender in Homelessness. *European Journal of Homelessness* 11(1), pp. 1–22.
- Brickell, K. 2012. "Mapping" and "doing" critical geographies of home. *Progress in Human Geography* 36(2), pp. 225–244. doi: 10.1177/0309132511418708.
- Briggs, D., Rhodes, T., Marks, D., Kimber, J., Holloway, G. and Jones, S., 2009. Injecting drug use and unstable housing: Scope for structural interventions in harm reduction. *Drugs: Education, Prevention and Policy* 16(5), pp. 436–450.
- Brinkley-Rubinstein, L. 2013. Incarceration as a catalyst for worsening health. *Health & Justice* 1(1), pp. 1-17
- Browne Gott, H., Mackie, P. K. and England, E. 2023 Housing rights, homelessness prevention and paradox of bureaucracy? *Housing Studies*, 38(2) pp.250-268
- Burt, M., Pearson, C. and Montgomery, A.E. 2006. *Strategies for Preventing Homelessness*. Washington: Office of Policy Development and Research, U.S. Department of Housing and Urban Development. Available at: <https://webarchive.urban.org/publications/1000874.html> [Accessed: 3 March 2020]
- Busch-Geertsema Volker, Edgar William, O'Sullivan Eoin and Pleace Nicholas. 2010. *Homelessness and Homeless Policies in Europe: Lessons from Research*. Brussels: FEANTA Available at: https://www.feantsa.org/download/fea_020-10_en_final8900978964616628637.pdf [Accessed: 20 March 2020]

- Busch-geertsema, V. and Fitzpatrick, S. 2008. Effective Homelessness Prevention? Explaining Reductions in Homelessness in Germany and England. *European Journal of Homelessness* 2, pp. 69–95.
- Busch-Geertsema, V. and Sahlin, I. 2007. The Role of Hostels and Temporary Accommodation. *European Journal of Homelessness* 1, pp. 67–93.
- Busch-Geertsema, V., Culhane, D. and Fitzpatrick, S. 2016. Developing a global framework for conceptualising and measuring homelessness. *Habitat International* 55, pp. 124–132. Available at: <http://dx.doi.org/10.1016/j.habitatint.2016.03.004>.
- Byrne, T. and Culhane, D.P. 2015. Testing Alternative Definitions of Chronic Homelessness. *Psychiatric Services* 66(9), pp. 996–999. Available at: <http://psychiatryonline.org/doi/10.1176/appi.ps.201400240>.
- Campbell, J.A. 2014. *Homelessness amongst people from Black and Minority Ethnic populations in Wales [online]*. Available at: <http://www.sheltercymru.org.uk/homelessness-amongst-people-from-bme-populations-in-wales/>. [Accessed 12 February 2021]
- Canavan, R. Barry, M.M., Matanov, A., Barros, H., Gabor, E., Greacen, T., Holcnerová, P., Kluge, U., Nicaise, P., Moskalewicz, J. and Díaz-Olalla, J.M., 2012. Service provision and barriers to care for homeless people with mental health problems across 14 European capital cities. *BMC Health Services Research* 2012, 12(222), pp. 1–9.
- Casey, R., Goudie, R. and Reeve, K. 2008. Homeless women in public spaces: Strategies of resistance. *Housing Studies* 23(6), pp. 899–916. doi: 10.1080/02673030802416627.
- Centre for Data Ethics and Innovation. 2020. *Addressing trust in public sector data use*. Available at: <https://www.gov.uk/government/publications/cdei-publishes-its-first-report-on-public-sector-data-sharing/addressing-trust-in-public-sector-data-use>. [Accessed 06 May 2024]
- Chamberlain, C. and Johnson, G. 2011. Pathways into adult homelessness. *Journal of Sociology* 49(1), pp. 60–77. doi: 10.1177/1440783311422458.
- Chambers, C. Chiu, S., Katic, M., Kiss, A., Redelmeier, D.A., Levinson, W. and Hwang, 2013. High Utilizers of Emergency Health Services in a Population- based Cohort of Homeless Adults. *Am J Public Health*. 103(2), pp. 302–310.
- Charalamboud, M.P., 2002. *Alcohol and the accident and emergency department: a current review*. *Alcohol and alcoholism*. 37(4), pp.307-212
- Cheallaigh, C.N. Cullivan, S., Sears, J., Lawlee, A.M., Browne, J., Kieran, J., Segurado, R., O'Carroll, A., O'Reilly, F., Creagh, D. and Bergin, C. 2017. Usage of unscheduled hospital care by homeless individuals in Dublin, Ireland: A cross-sectional study. *BMJ Open* 7(11), pp. 1–7. doi: 10.1136/bmjopen-2017-016420.
- Chen, X., Thrane, L., Whitbeck, L.B., Johnson, K.D. and Hoyt, D.R. 2007. Onset of conduct disorder, use of delinquent subsistence strategies, and street victimization among homeless and runaway adolescents in the Midwest. *Journal of Interpersonal Violence* 22(9), pp. 1156–1183. doi: 10.1177/0886260507303731.
- Cheng, T., Wood, E., Feng, C., Mathias, S., Montaner, J., Kerr, T. and DeBeck, K. 2013. Transitions into and out of homelessness among street-involved youth in a Canadian setting. *Health and Place* 23, pp. 122–127.
- Cherner, R.A., Aubry, T., Sylvestre, J., Boyd, R. and Pettey, D., 2017. Housing First for Adults with Problematic Substance Use. *Journal of Dual Diagnosis* 13(3), pp. 219–229.
- Cho, S., Crenshaw, K. and McCall, L. 2013. Toward a Field of Intersectionality Studies: Theory, Applications, and Praxis. *Signs* 38(4), pp. 785–810. doi: 10.1086/521238.

- Clapham, D. 2002. Housing Pathways: A Post Modern Analytical Framework. *Housing, Theory and Society* 19(2), pp. 57–68.
- Clapham, D. 2002. Housing Pathways: A Post Modern Analytical Framework. *Housing, Theory and Society* 19(2), pp. 57–68. Available at: <http://www.tandfonline.com/doi/abs/10.1080/140360902760385565>.
- Clapham, D. 2003. Pathways Approaches to Homelessness Research. *Journal of Community and Applied Social Psychology* 13(2), pp. 119–127.
- Clapham, D., Mackie, P., Orford, S., Thomas, I. and Buckley, K. 2014. The housing pathways of young people in the UK. *Environment and Planning A* 46(8), pp. 2016–2031. doi: 10.1068/a46273.
- Clark, M., Cornes, M., Manthorpe, J., Hennessy, C. and Anderson, S., 2015. Releasing the grip of managerial domination: The role of communities of practice in tackling multiple exclusion homelessness. *Journal of Integrated Care* 23(5), pp. 287–301.
- Clarke, A. and Parsell, C. 2020. The Ambiguities of Homelessness Governance: Disentangling Care and Revanchism in the Neoliberalising City. *Antipode* 52(6), pp. 1624–1646. doi: 10.1111/anti.12671.
- Cloke, P., Cooke, P., Cursons, J., Milbourne, P. and Widdowfield, R. 2000. Ethics, Reflexivity and Research: Encounters with Homeless People. *Ethics, Place & Environment* 3(2), pp. 133–154. Available at: <http://www.tandfonline.com/doi/abs/10.1080/713665889>.
- Cloke, P., May, J. and Johnsen, S. 2010. *Swept Up Lives? Re-Envisioning the Homeless City*. West Sussex: Wiley-Blackwell
- Collins, D. 2010. Homelessness in Canada and New Zealand: A comparative perspective on numbers and policy responses. *Urban Geography* 31(7), pp. 932–952. doi: 10.2747/0272-3638.31.7.932.
- Connelly, R., Playford, C.J., Gayle, V. and Dibben, C. 2016. The role of administrative data in the big data revolution in social science research. *Social Science Research* 59, pp. 1–12. Available at: <http://dx.doi.org/10.1016/j.ssresearch.2016.04.015>.
- Conradson, D. 2003. Geographies of care: Spaces, practices, experiences. *Social and Cultural Geography* 4(4), pp. 451–454.
- Cornes, M., Joly, L., Manthorpe, J., O'Halloran, S. and Smyth, R. 2011. Working Together to Address Multiple Exclusion Homelessness. *Social Policy and Society* 10(04), pp. 513–522.
- Cowan, D., Halliday, S. and Hunter, C. 2006. Adjudicating the implementation of homelessness law: The promise of socio-legal studies. *Housing Studies* 21(3), pp. 381–400. doi: 10.1080/02673030600586019.
- Cramér, H. 1946. *Mathematical methods of statistics* (vol. 26). Princeton: Princeton University Press
- Crane, M. and Warnes, M. 2001. Primary health care services for single homeless people: defects and opportunities. *Family Practice* 18(3), pp. 272–6. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/11356733>.
- Crane, M., Warnes, A. and Fu, R. 2006. Developing homelessness prevention practice: Combining research evidence and professional knowledge. *Health and Social Care in the Community* 14(2), pp. 156–166.
- Cronley, C. 2010. Unraveling the Social Construction of Homelessness. *Journal of Human Behavior in the Social Environment* 20(2), pp. 319–333. doi:

10.1080/10911350903269955.

- Crown Prosecution Service. 2023. *Criminal damage*. Available at: <https://www.cps.gov.uk/legal-guidance/criminal-damage> [accessed 21 October 2023]
- Culhane, D. 2016. The Potential of Linked Administrative Data for Advancing Homelessness Research and Policy. *European Journal of Homelessness* 10(3), pp. 109–126.
- Culhane, D., Fitzpatrick, S. and Treglia, D., 2020. Contrasting traditions in homelessness research between the UK and US. In *Using evidence to end homelessness* (pp. 99–124). Policy Press.
- Culhane, D.P. and Metraux, S. 1997. Where to From Here: A Policy Research Agenda Based on the Analysis of Administrative Data. *Understanding Homelessness: New Policy and Research Perspectives* (January), pp. 341–360.
- Culhane, D.P. and Metraux, S. 2008. Rearranging the deck chairs or reallocating the lifeboats? Homelessness assistance and its alternatives. *Journal of the American Planning Association* 74(1), pp. 111–121. doi: 10.1080/01944360701821618.
- Culhane, D.P., Metraux, S., Park, J.M., Schretzman, M. and Valente, J., 2007. Testing a typology of family homelessness based on patterns of public shelter utilization in four U.S. jurisdictions: Implications for policy and program planning. *Housing Policy Debate* 18(1), pp. 1–28.
- Culhane, D.P., Metraux, S. and Byrne, T. 2011. A prevention-centered approach to homelessness assistance: a paradigm shift? *Housing Policy Debate* 21(2), pp. 295–315. Available at: <http://dx.doi.org/10.1080/10511482.2010.536246>.
- Culhane, D.P., Metraux, S., Park, J.M., Schretzman, M. and Valente, J. 2007. Testing a typology of family homelessness based on patterns of public shelter utilization in four U.S. jurisdictions: Implications for policy and program planning. *Housing Policy Debate* 18(1), pp. 1–28. Available at: <http://www.tandfonline.com/doi/abs/10.1080/10511482.2007.9521591>.
- Cummins, I. 2023. ‘Defunding the police’: A consideration of the implications for the police role in mental health work. *Police Journal* 96(2), pp. 230–244. doi: 10.1177/0032258X211047795.
- D., M. 1995. The End of Public Space? People’s Park, Definitions of the Public, and Democracy. *Annals of the Association of American Geographers* 85(1), pp. 108–133.
- Dale, A. 2006. Quality issues with survey research. *International Journal of Social Research Methodology: Theory and Practice* 9(2), pp. 143–158. doi: 10.1080/13645570600595330.
- David, D.H., Rowe, M., Staeheli, M. and Ponce, A.N., 2015. Safety, Trust, and Treatment: Mental Health Service Delivery for Women Who Are Homeless. *Women & Therapy* 38(1–2), pp. 114–127.
- Daya, S. and Wilkins, N. 2013. The body, the shelter, and the shebeen: An affective geography of homelessness in South Africa. *Cultural Geographies* 20(3), pp. 357–378.
- De Corte, J., Verschuere, B. and De Bie, M. 2017. Networks for Welfare Provision: Getting a Grip on Processes of Social Exclusion by Evaluating Network Effectiveness. *Social Policy and Administration* 51(7), pp. 1174–1190.
- Dean, H., 2015. *Social rights and human welfare*. London: Routledge.
- Deleu, H., Schrooten, M. and Hermans, K. 2023. Hidden Homelessness: A Scoping Review and Avenues for Further Inquiry. *Social Policy and Society* 22(2), pp. 282–298. doi: 10.1017/S1474746421000476.

- DeVerteuil, G. 2003. Homeless mobility, institutional settings, and the new poverty management. *Environment and Planning A* 35(2), pp. 361–379.
- DeVerteuil, G. 2004. Systematic inquiry into barriers to researcher access: Evidence from a homeless shelter. *Professional Geographer* 56(3), pp. 372–380. doi: 10.1111/j.0033-0124.2004.05603006.x.
- DeVerteuil, G. 2006. The local state and homeless shelters: Beyond revanchism? *Cities* 23(2), pp. 109–120. doi: 10.1016/j.cities.2005.08.004.
- DeVerteuil, G. 2019. Post-revanchist cities? *Urban Geography* 40(7), pp. 1055–1061. Available at: <https://doi.org/10.1080/02723638.2019.1640034>.
- DeVerteuil, G., May, J. and Von Mahs, J., 2009. Complexity not collapse: Recasting the geographies of homelessness in a ‘punitive’ age. *Progress in Human Geography* 33(5), pp. 646–666.
- DeVerteuil, G., May, J. and von Mahs, J. 2009. Complexity not collapse: Recasting the geographies of homelessness in a “punitive” age. *Progress in Human Geography* 33(5), pp. 646–666. doi: 10.1177/0309132508104995.
- Diette, T.M. and Ribar, D.C. 2018. A longitudinal analysis of violence and housing insecurity. *Economic Inquiry* 56(3), pp. 1602–1621.
- Dorney-Smith, S., Hewett, N., Khan, Z. and Smith, R. 2016. Integrating health care for homeless people: Experiences of the KHP pathway homeless team. *British Journal of Health Care Management* 22(4), pp. 215–224. doi: 10.12968/bjhc.2016.22.4.215.
- Doupe, M.B. Day, S., Palatnick, W., Chochinov, A., Chateau, D., Snider, C., de Faria, R.L., Weldon, E. and Derksen, S., 2017. An ED paradox: Patients who arrive by ambulance and then leave without consulting an ED provider. *Emergency Medicine Journal* 34(3), pp. 151–156. doi: 10.1136/emmermed-2015-205165.
- Duncan, N., 1996. Renegotiating gender and sexuality in public and private spaces. In: Duncan, N. (Ed.), *Bodyspace: Destabilizing Geographies of Gender and Sexuality*. Routledge, London and New York, pp. 127–145
- Dunn, J.R. 2000. Housing and Health Inequalities: Review and Prospects for Research. *Housing Studies* 15 pp. 341–366.
- Dwyer, P. and Somerville, P. 2011. Introduction: Themed Section on Exploring Multiple Exclusion Homelessness. *Social Policy and Society* 10(04), pp. 495–500.
- Dyb, E. 2009. Imprisonment: A major gateway to homelessness. *Housing Studies* 24(6), pp. 809–824. doi: 10.1080/02673030903203676.
- Early, D.W. 2005. An empirical investigation of the determinants of street homelessness. *Journal of Housing Economics* 14(1), pp. 27–47.
- Edgar, B. and Meert, H. 2005. *Fourth Review of Statistics on Homelessness in Europe: The ETHOS definition of homelessness*. Brussels: FEANTA Available at: <https://www.feantsaresearch.org/en/early-research/2005/11/23/fourth-review-of-statistics-on-homelessness-in-europe-2005?bcParent=766>. [Accessed 13 April 2021]
- England, E. 2023. Compassionate responsibilisation in a neoliberal paternalistic homelessness system: ‘They’re not just numbers to me, I do actually care.’ *The Sociological Review*. 71(1) 148-164
- England, E., Thomas, I., Mackie, P. and Browne-Gott, H. 2022. A typology of multiple exclusion homelessness. *Housing Studies* 0(0), pp. 1–25. Available at: <https://doi.org/10.1080/02673037.2022.2077917>.

- Esping-Andersen, G. 1990. *The Three Worlds of Welfare Capitalism*. Cambridge: Polity Press
- Fazel, S., Khosla, V., Doll, H. and Geddes, J., 2008. The prevalence of mental disorders among the homeless in Western countries: Systematic review and meta-regression analysis. *PLoS Medicine* 5(12), pp. 1670–1681.
- Fazel, S., Khosla, V., Doll, H. and Geddes, J., 2015. The health of homeless people in high-income countries : descriptive epidemiology , health consequences , and clinical and policy recommendations. 384(9953), pp. 1529–1540.
- FEANTSA (2007) *FEANTSA Proposal: A Retrospective Module on Homelessness for Household Surveys* Brussels: FEANTSA.
- Fitzpatrick-Lewis, D., Ganann, R., Krishnaratne, S., Ciliska, D., Kouyoumdjian, F. and Hwang, S.W., 2011. Effectiveness of interventions to improve the health and housing status of homeless people: a rapid systematic review. *BMC Public Health* 11(1), p. 638.
- Fitzpatrick, S. 2005. Explaining homelessness: A critical realist perspective. *Housing, Theory and Society* 22(1), pp. 1–17. doi: 10.1080/14036090510034563.
- Fitzpatrick, S. and Christian, J. 2006. Comparing Homelessness Research in the US and Britain. *European Journal of Housing Policy* 6(3), pp. 313–333. doi: 10.1080/14616710600973151.
- Fitzpatrick, S. and Pleace, N. 2012. The Statutory Homelessness System in England: A Fair and Effective Rights-Based Model? *Housing Studies* 27(2), pp. 232–251.
- Fitzpatrick, S. and Stephens, M. 2014. Welfare Regimes, Social Values and Homelessness: Comparing Responses to Marginalised Groups in Six European Countries. *Housing Studies* 29(2), pp. 215–234.
- Fitzpatrick, S., Johnsen, S. 2009. The use of enforcement to combat 'street culture' in England: An ethical approach? *Ethics and Social Welfare* 3(3), pp. 284–302.
- Fitzpatrick, S. and Watts, B. 2010. 'The Right to Housing' for Homeless People. *Homeless Research in Europe*, pp. 105–122.
- Fitzpatrick, S. and Watts, B. 2017. Competing visions: security of tenure and the welfarisation of English social housing. *Housing Studies*, pp. 1–18. Available at: <https://www.tandfonline.com/doi/full/10.1080/02673037.2017.1291916>.
- Fitzpatrick, S., Johnsen, S. and White, M. 2011. Multiple Exclusion Homelessness in the UK: Key Patterns and Intersections. *Social Policy and Society* 10(04), pp. 501–512.
- Fitzpatrick, S., Bramley, G. and Johnsen, S. 2012. Pathways into Multiple Exclusion Homelessness in Seven UK Cities. *Urban Studies* 50(May 2011), pp. 148–168.
- Fitzpatrick, S., Bengtsson, B. and Watts, B. 2014. Rights to Housing: Reviewing the Terrain and Exploring a Way Forward. *Housing, Theory and Society* 31(4), pp. 447–463. Available at: <http://www.tandfonline.com/doi/abs/10.1080/14036096.2014.923506>.
- Fitzpatrick, S., Bramley, G. and Johnsen, S. 2012. Pathways into Multiple Exclusion Homelessness in Seven UK Cities. *Urban Studies* 50(May 2011), pp. 148–168. doi: 10.1177/0042098012452329.
- Fitzpatrick, S., Johnsen, S. and White, M. 2011. Multiple Exclusion Homelessness in the UK: Key Patterns and Intersections. *Social Policy and Society* 10(04), pp. 501–512. Available at: http://www.journals.cambridge.org/abstract_S147474641100025X.
- Flaherty, J. and Garratt, E. 2022. Life history mapping: Exploring journeys into and through

- housing and homelessness. *Qualitative Research*, pp. 1–22. doi: 10.1177/14687941211072788.
- Folsom, D.P., Hawthorne, W., Lindamer, L., Gilmer, T., Bailey, A., Golshan, S., Garcia, P., Unützer, J., Hough, R. and Jeste, D.V. 2005. Prevalence and risk factors for homelessness and utilization of mental health services among 10,340 patients with serious mental illness in a large public mental health system. *American Journal of Psychiatry* 162(2), pp. 370–376.
- Fopp, R. 2008. Social Constructionism and Housing Studies: A Critical Reflection. *Urban Policy and Research* 26(2), pp. 159–175. doi: 10.1080/08111140801898548.
- Fopp, R. 2009. Metaphors in Homelessness Discourse and Research: Exploring “Pathways”, “Careers” and “Safety Nets” 1. *Housing, Theory and Society* 26(4), pp. 271–291. doi: 10.1080/14036090802476564.
- Ford, D.V., Jones, K.H., Verplancke, J.P., Lyons, R.A., John, G., Brown, G., Brooks, C.J., Thompson, S., Bodger, O., Couch, T. and Leake, K., 2009. The SAIL Databank: Building a national architecture for e-health research and evaluation. *BMC Health Services Research* 9, pp. 1–12. doi: 10.1186/1472-6963-9-157.
- Foster, H. and Hagan, J. 2007. Incarceration and Intergenerational Social Exclusion. *Social Problems* 54(4), pp. 399–433.
- Francis, L. E. 2000. Conflicting bureaucracies, conflictd work: Dilemma in case managment for homelessness people with mental illness, *Journal of Sociology and Social Welfare* 27. Pp. 97-112
- Frické, M. 2013. Big Data and Its Epistemology. *Journal of the Association for Information Science and Technology* 66, pp. 651–661. Available at: <http://onlinelibrary.wiley.com/doi/10.1002/asi.22883/abstract>.
- Fyfe, N.R. 1991. The police, space and society : The geography of policing. *Progress in Human Geography* 15(3), pp. 249–267. doi: 10.1177/030913259101500301.
- Geddes, J.R. and Fazel, S. 2011. Extreme health inequalities : mortality in homeless people. *The Lancet* 377(9784), pp. 2156–2157. Available at: [http://dx.doi.org/10.1016/S0140-6736\(11\)60885-4](http://dx.doi.org/10.1016/S0140-6736(11)60885-4).
- Genberg, B.L., Gange, S.J., Go, V.F., Celentano, D.D., Kirk, G.D. and Mehta, S.H., 2011. Trajectories of injection drug use over 20 years (1988-2008) in Baltimore, Maryland. *American Journal of Epidemiology* 173(7), pp. 829–836.
- Goffman E. 1956. *The presentation of self in everyday life*. Edinburgh, UK: University of Edinburgh.
- Goffman, E., 1961. *Asylums: Essays on the social situation of mental patients and other inmates*. New York. Doubleday Anchor
- Gonyea, J.G. and Melekis, K. 2017. Older homeless women’s identity negotiation: Agency, resistance, and the construction of a valued self. *Sociological Review* 65(1), pp. 67–82.
- Gonyea, J.G. and Melekis, K. 2017. Older homeless women’s identity negotiation: Agency, resistance, and the construction of a valued self. *Sociological Review* 65(1), pp. 67–82. doi: 10.1111/1467-954X.12369.
- Gonzalez, J.R., Jetelina, K.K., Roberts, M., Reitzel, L.R., Kendzor, D., Walters, S. and Businelle, M.S., 2017. Criminal Justice System Involvement Among Homeless Adults. *American Journal of Criminal Justice*, pp. 1–9.

- Gowan, T. 2002. The nexus: Homelessness and incarceration in two American cities. *Ethnography* 3(4), pp. 500–534.
- Gowan, T. 2002. The nexus: Homelessness and incarceration in two American cities. *Ethnography* 3(4), pp. 500–534.
- Gowan, T. 2010. *Hobos Hustlers and Backsliders : Homelessness in San Francisco*. London. University of Minnesota Press
- Grath-lone, L.M., Jay, M.A., Blackburn, R., Gordon, E., Zylbersztejn, A., Wijlaars, L. and Gilbert, R. 2022. What makes administrative data “research-ready”? A systematic review and thematic analysis of published literature. *International Journal of Population Data Science* 7(1(6)).
- Greene, J.M. Ennett, S.T. and Ringwalt, C.L., 1997. Substance use among runaway and homeless youth in three national samples. *American Journal of Public Health* 87(2), pp. 229–235.
- Greene, S., Chambers, L., Masinde, K. and O'Brien-Teengs, D., 2013. A House is not a Home: The Housing Experiences of African and Caribbean Mothers Living with HIV. *Housing Studies* 28(1), pp. 116–134.
- Griffiths, E., Greci, C. and Kotrotsios, Y., Parker, S., Scott, J., Welpton, R., Wolters, Woods, C., 2019. *Handbook on Statistical Disclosure for Outputs*. Available at: https://ukdataservice.ac.uk/app/uploads/thf_datareport_aw_web.pdf. [Accessed 1 April 2023]
- Gulcur, L., Stefancic, A., Shinn, M., Tsemberis, S. and Fischer, S.N., 2003. Housing, hospitalization, and cost outcomes for homeless individuals with psychiatric disabilities participating in continuum of care and Housing First programmes. *Journal of Community & Applied Social Psychology* 13(2), pp. 171–186.
- Gunner, E., Chandan, S.K., Yahyouche, A., Paudyal, V., Marwick, S., Saunders, K. and Burwood, S. 2019. Provision and accessibility of primary healthcare services for people who are homeless: A qualitative study of patient perspectives in the UK. *British Journal of General Practice* 69(685), pp. E526–E536. doi: 10.3399/bjgp19X704633.
- Hagan, J. and McCarthy, B. 1997. *Mean Streets: Youth Crime and Homelessness*. Cambridge: Cambridge University Press
- Hand, D.J. 2018. Statistical challenges of administrative and transaction data. *Journal of the Royal Statistical Society. Series A: Statistics in Society* 181(3), pp. 555–605. doi: 10.1111/rssa.12315.
- Hanlon., Yeoman, L., Esiovwa, R., Gibson, L., Williamson, A.E., Mair, F.S. and Lowrie, R., 2017. Interventions by healthcare professionals to improve management of physical long-term conditions in adults who are homeless: a systematic review protocol. *BMJ open*, 7(8), p.e016756.
- Harding, S. and Hartnett, H. 2005. Geography and Shelter: Implications for Community Practice with People Experiencing Homelessness. *Journal of Progressive Human Services* 16(2), pp. 25–46.
- Harding, R and Hamilton, P. (2009), ‘Working girls: abuse or choice in street level sex work? A study of homeless women in Nottingham’, *British Journal of Social Work*, (39)6, pp. 1118–37.
- Harron, K., Dibben, C., Boyd, J., Hjern, A., Azimaee, M., Barreto, M.L. and Goldstein, H. 2017. Challenges in administrative data linkage for research. *Big Data and Society*

- 4(2), pp. 1–12. doi: 10.1177/2053951717745678.
- Harron, K., Doidge, J.C. and Goldstein, H. 2020. Assessing data linkage quality in cohort studies. *Annals of Human Biology* 47(2), pp. 218–226. Available at: <https://doi.org/10.1080/03014460.2020.1742379>.
- Hart, C., De Vet, R., Moran, P., Hatch, S.L. and Dean, K., 2012. A UK population-based study of the relationship between mental disorder and victimisation. *Social psychiatry and psychiatric epidemiology*, 47, pp.1581-1590.
- Harvey, D. 1982. *The Limits to Capital*. Chicago: University of Chicago Press
- Hennigan, B. and Speer, J. 2019. Compassionate revanchism: The blurry geography of homelessness in the USA. *Urban Studies* 56(5), pp. 906–921. doi: 10.1177/0042098018762012.
- Henson, V.L. and Vickery, D.S. 2005. Patient self discharge from the emergency department: Who is at risk? *Emergency Medicine Journal* 22(7), pp. 499–501. doi: 10.1136/emj.2003.005447.
- Heslin, K.C. Robinson, P.L., Baker, R.S. and Gelberg, L., 2007. Community Characteristics and Violence Against Homeless Women in Los Angeles County. *Journal of Health Care for the Poor and Underserved* 18(1), pp. 203–218.
- Hochstenbach, C. and Boterman, W.R. 2015. Navigating the field of housing: housing pathways of young people in Amsterdam. *Journal of Housing and the Built Environment* 30(2), pp. 257–274. Available at: <http://dx.doi.org/10.1007/s10901-014-9405-6>.
- Hodgetts, D. Radley, A., Chamberlain, K. and Hodgetts, A., 2007. Health inequalities and homelessness: Considering material, spatial and relational dimensions. *Journal of Health Psychology* 12(5), pp. 709–725.
- Homeless Link 2015. *Support for Single Homeless People in England: Annual Review 2016*. London: Homeless Link
- Hoolachan, J.E. 2016. Ethnography and Homelessness Research. *International Journal of Housing Policy* 16(1), pp. 31–49.
- Hopper, K. 2003. *Reckoning with Homelessness*. Ithaca: Cornell University Press
- Huey, L. and Berndt, E. 2008. “You’ve gotta learn how to play the game”: Homeless women’s use of gender performance as a tool for preventing victimization. *Sociological Review* 56(2), pp. 177–194. doi: 10.1111/j.1467-954X.2008.00783.x.
- Hunter, C. Bretherton, J., Halliday, S and Johnsen, S. 2016 Legal compliance in street-Level bureaucracy: A Study of UK housing officers, *Law and Policy*, 38, pp.81-95
- Hwang, S.W. 2000. Shelters in Toronto , Ontario. *Journal of the American Medical Association* 283(16), pp. 2152–2157.
- Hwang, S.W. 2001. Is homelessness hazardous to your health? Obstacles to the demonstration of a causal relationship. *Canadian Journal of Public Health* 93(6), pp. 407–410.
- Hwang, S.W. and Burns, T. 2014. Health interventions for people who are homeless. *The Lancet* 384(9953), pp. 1541–1547. Available at: [http://dx.doi.org/10.1016/S0140-6736\(14\)61133-8](http://dx.doi.org/10.1016/S0140-6736(14)61133-8).
- Hwang, S.W., Tolomiczenko, G., Kouyoumdijan, F. G., and Garner, R. E. 2005. Interventions to improve the health of the homeless: A systematic review. *American Journal of*

Preventive Medicine 29(4).

- Hwang, S.W., Chambers, C., Chiu, S., Katic, M., Kiss, A., Redelmeier, D. A., and Levinson, W. 2013. Homeless Adults under a System of Universal Health Insurance. *Am J Public Health*. 103(02), pp. 294–301.
- Hwang, S.W., Tolomiczenko, G., Kouyoumdjian, F.G. and Garner, R.E. 2005. Interventions to improve the health of the homeless: A systematic review. *American Journal of Preventive Medicine* 29(4). doi: 10.1016/j.amepre.2005.06.017.
- Ibrahim, S.A., Kwoh, C.K. and Krishnan, E. 2007. Factors associated with patients who leave acute-care hospitals against medical advice. *American Journal of Public Health* 97(12), pp. 2204–2208. doi: 10.2105/AJPH.2006.100164.
- Ismail, S.A., Gibbons, D.C. and Gnani, S. 2013. Reducing inappropriate accident and emergency department attendances: A systematic review of primary care service interventions. *British Journal of General Practice* 63(617), pp. 813–820. doi: 10.3399/bjgp13X675395.
- Jackson, T., Nadicksbernd, J.J., O'Connell, D., Page, E. 2024 "Always at the bottom of the pile": The Homeless and Inclusion Health Barometer 2024. London, Pathway Available Online: <https://www.pathway.org.uk/app/uploads/2024/03/Always-at-the-Bottom-of-the-Pile-2.pdf>. [Accessed 20 April 2024]
- Jacobs, K. and Manzi, T. 2000. Evaluating the Social Constructionist Paradigm in Housing Research. *Housing, Theory and Society* 17(1), pp. 35–42. doi: 10.1080/140360900750044764.
- Jacobs, K., Kemeny, J. and Manzi, T. 1999. The struggle to define homelessness: a constructivist approach. *Homelessness: Public policies and private troubles*, London: Cassell (January), pp. 11–28.
- Johnsen, S. and Fitzpatrick, S. 2010. Revanchist Sanitisation or Coercive Care? The Use of Enforcement to Combat Begging, Street Drinking and Rough Sleeping in England. *Urban Studies* 47(8), pp. 1703–1723. doi: 10.1177/0042098009356128.
- Johnsen, S., Cloke, P., and May, J. 2005. Day centres for homeless people: Spaces of care or fear? *Social and Cultural Geography* 6(6), pp. 787–811.
- Johnsen, S., Fitzpatrick, S. and Watts, B. 2018. Homelessness and social control: a typology. *Housing Studies* 33(7), pp. 1106–1126. Available at: <http://doi.org/10.1080/02673037.2017.1421912>.
- Johnson, G. 2006. *On the Move: A longitudinal study of pathways in and out of homelessness*. PhD Thesis, RMIT University
- Johnson, T.P., Freels, S.A., Parsons, J.A. and Vangeest, J.B., 1997. Substance abuse and homelessness: social selection or social adaptation?. *Addiction*, 92(4), pp.437-445.
- Johnson, G. and Chamberlain, C. 2008. Homelessness and Substance Abuse: Which Comes First? *Australian Social Work* 61(4), pp. 342–356.
- Johnstone, M., Parsell, C., Jetten, J., Dingle, G. and Walter, Z. 2016. Breaking the cycle of homelessness: Housing stability and social support as predictors of long-term well-being. *Housing Studies* 31(4), pp. 410–426.
- Jones, A. .1999. *Out of Sight, Out of Mind: The Experiences of Homeless Women* (London: Crisis).
- Jones, A. and Pleace, N. 2010. *A Review of Single Homelessness in the UK 2000 - 2010*. The University of York. Crisis. Available Online: <https://www.crisis.org.uk/media/237174/a-review-of-single-homelessness-in-the-u>

[k_2000-2010_es.pdf](#). [Accessed 10 March 2018]

- Jones, K.H., Ford, D.V., Jones, C., Dsilva, R., Thompson, S., Brooks, C.J., Heaven, M.L., Thayer, D.S., McNerney, C.L. and Lyons, R.A., 2014. A case study of the secure anonymous information linkage (SAIL) gateway: A privacy-protecting remote access system for health-related research and evaluation. *Journal of Biomedical Informatics* 50, pp. 196–204. doi: 10.1016/j.jbi.2014.01.003.
- Jones, K.H., Ford, D.V., Thompson, S. and Lyons, R. 2019. A Profile of the SAIL Databank on the UK Secure Research Platform. *International Journal of Population Data Science* 4(2). Available at: <https://ijpds.org/article/view/1134>.
- Joseph, A.E. Kearns, R.A. and Moon, G. 2009. Recycling former psychiatric hospitals in New Zealand: Echoes of deinstitutionalisation and restructuring. *Health and Place* 15(1), pp. 79–87.
- Kemp, P.A. Neale, J. and Robertson, M., 2006. Homelessness among problem drug users: Prevalence, risk factors and trigger events. *Health and Social Care in the Community* 14(4), pp. 319–328.
- Kerker, B.D., Bainbridge, J., Kennedy, J., Bennani, Y., Agerton, T., Marder, D., Forgione, L., Faciano, A. and Thorpe, L.E., 2011. A population-based assessment of the health of homeless families in New York City, 2001–2003. *American Journal of Public Health* 101(3), pp. 546–553.
- Kertesz, S.G. and Johnson, G. 2017. Housing First: Lessons from the United States and Challenges for Australia. *Australian Economic Review* 50(2), pp. 220–228.
- Kim, T.W., Kertesz, S.G., Horton, N.J., Tibbetts, N. and Samet, J.H. 2006. Episodic homelessness and health care utilization in a prospective cohort of HIV-infected persons with alcohol problems. *BMC Health Services Research* 6(1), p. 19.
- Kinsella, C. 2012. Re-locating Fear on the Streets: Homelessness, Victimisation and Fear of Crime. *European Journal of Homelessness* 6(2), pp. 121–136.
- Klodawsky, F. 2006. Landscapes on the margins: Gender and homelessness in Canada. *Gender, Place and Culture* 13(4), pp. 365–381. doi: 10.1080/09663690600808478.
- Ku, B. Scott, K.C., Kertesz, S.G. and Pitts, S.R., 2010. Factors Associated with Use of Urban Emergency Departments by the U.S. Homeless Population. *Public Health Reports* 125(3), pp. 398–405.
- Kuhn, R. and Culhane, D.P. 1998. Applying cluster analysis to test a typology of homelessness by pattern of shelter utilization: results from the analysis of administrative data. *American Journal of Community Psychology* 26(2), pp. 207–232.
- Kuhn, T. 1996. *The structure of scientific revolutions* (3rd ed). Chicago: University of Chicago Press.
- Kushel, M.B., Hahn, J.A., Evans, J.L., Bangsberg, D.R. and Moss, A.R. 2005. Revolving doors: Imprisonment among the homeless and marginally housed population. *American Journal of Public Health* 95(10), pp. 1747–1752. doi: 10.2105/AJPH.2005.065094.
- Lamanna, D. Stergiopoulos, V., Durbin, J., O'Campo, P., Poremski, D. and Tepper, J., 2017. Promoting continuity of care for homeless adults with unmet health needs: The role of brief interventions. *Health and Social Care in the Community* 26(1), pp. 56–64.
- Lane, R. 2019. “I’m a police officer not a social worker or mental health nurse”: Online discourses of exclusion and resistance regarding mental health related police work. *Journal of Community and Applied Social Psychology* 29(5), pp. 429–442.

- Larney, S. Conroy, E., Mills, K.L., Burns, L. and Teesson, M., 2009. Factors associated with violent victimisation among homeless adults in Sydney, Australia. *Australian and New Zealand Journal of Public Health* 33(4), pp. 347–351.
- Law, J. 2004. And if the global were small and noncoherent? Method, complexity, and the baroque. *Environment and Planning D: Society and Space* 22(1), pp. 13–26.
- Lebrun-Harris, L.A. Baggett, T.P., Jenkins, D.M., Sripipatana, A., Sharma, R., Hayashi, A.S., Daly, C.A. and Ngo-Metzger, Q., 2013. Health status and health care experiences among homeless patients in federally supported health centers: Findings from the 2009 Patient Survey. *Health Services Research* 48(3), pp. 992–1017.
- Lee, B.A. and Schreck, C.J. 2005. Danger on the Streets: Marginality and Victimization Amongst Homeless People. *American Behavioral Scientist* 48(8), pp. 1055–1081. doi: 10.1177/0002764204274200.
- Levesque, J., Babando, J., Loranger, N., Johnson, S. and Pugh, D. 2022. COVID-19 prevalence and infection control measures at homeless shelters and hostels in high-income countries: a scoping review. *Systematic Reviews* 11(1), pp. 1–20. Available at: <https://doi.org/10.1186/s13643-022-02089-x>.
- Levitas, R., Pantazis, C., Fahmy, E., Gordon, D., Lloyd, E., and Patsios, D. 2007. *The Multidimensional Analysis of Social Exclusion*. London: Cabinet Office, Social Exclusion Taskforce. Available online: <https://repository.uel.ac.uk/item/8666g> [Accessed 29 June 2019]
- Linton, S.L., Celentano, D.D., Kirk, G.D. and Mehta, S.H., 2013. The longitudinal association between homelessness, injection drug use, and injection-related risk behavior among persons with a history of injection drug use in Baltimore, MD. *Drug and Alcohol Dependence* 132(3), pp. 457–465.
- Lloyd, C., Hilder, J. and Williams, P.L. 2017. Emergency department presentations of people who are homeless: The role of occupational therapy. *British Journal of Occupational Therapy* 80(9), pp. 533–538. doi: 10.1177/0308022617706679.
- Loison-Leruste, M. and Quilgars, D. 2009. Increasing Access to Housing : Implementing the Right to Housing in England and France. *European Journal of Homelessness* 3(April), pp. 75–100.
- Luchenski, S., Maguire, N., Aldridge, R.W., Hayward, A., Story, A., Perri, P., Withers, J., Clint, S., Fitzpatrick, S. and Hewett, N., 2017. What works in inclusion health: Overview of effective interventions for marginalised and excluded populations. *The Lancet* 391, pp. 266–280.
- Lyon-Callo, V. 2000. Medicalizing homelessness: the production of self-blame and self-governing within homeless shelters. *Medical Anthropology Quarterly* 14(3), pp. 328–345.
- Lyons, R.A., Jones, K.H., John, G., Brooks, C.J., Verplancke, J.P., Ford, D.V., Brown, G. and Leake, K., 2009. The SAIL databank: Linking multiple health and social care datasets. *BMC Medical Informatics and Decision Making* 9(1), pp. 1–8. doi: 10.1186/1472-6947-9-3.
- Mackesy-Amiti, M.E., Donenberg, G.R. and Ouellet, L.J., 2012. Prevalence of psychiatric disorders among young injection drug users. *Drug and Alcohol Dependence* 124(1–2), pp. 70–78.
- Mackie, P. 2015. Homelessness Prevention and the Welsh Legal Duty Lessons for International Policies. *Housing Studies* 30(1), pp. 40–59. doi:

10.1080/02673037.2014.927055.

- Mackie, P., Johnsen, S., Wood, J., 2017. *Ending rough sleeping: what works?* London: Crisis. Available at: <https://www.crisis.org.uk/ending-homelessness/homelessness-knowledge-hub/services-and-interventions/ending-rough-sleeping-what-works-an-international-evidence-review/> [Accessed 25 August 2022]
- Mackie, P., Thomas, I. and Bibbings, J. 2017. Homelessness Prevention : Reflecting on a Year of Pioneering Welsh Legislation in Practice. *European Journal of Homelessness*, pp. 1–20.
- Mackie, P., Thomas, I. and Hodgson, K. 2012. *Impact analysis of existing homelessness legislation in Wales: A report to inform the review of homelessness legislation in Wales*. Cardiff. Available at: <https://wiserd.ac.uk/wp-content/uploads/Impact-analysis-of-existing-homelessness-legislation-in-Wales.pdf>. [Accessed 25 August 2022]
- Mackie, P., Thomas, I., Bibbings, J., 2017. Homelessness Prevention : Reflecting on a Year of Pioneering Welsh Legislation in Practice. *European Journal of Homelessness*, pp. 1–20.
- Mallett, S. 2004. Understanding home: a critical review of the literature. *The Sociological Review* 52(1), pp. 62–89.
- Mallett, S., Rosenthal, D. and Keys, D., 2005. Young people, drug use and family conflict: Pathways into homelessness. *Journal of Adolescence* 28, pp. 185–199.
- Malpass, P. 2011. Path Dependence and the Measurement of Change in Housing Policy. *Housing, Theory and Society* 28(4), pp. 305–319.
- Mansfield, K.L., Gallacher, J.E., Mourby, M. and Fazel, M. 2020. Five models for child and adolescent data linkage in the UK : a review of existing and proposed methods. pp. 39–44. doi: 10.1136/ebmental-2019-300140.
- Manthorpe, J., Cornes, M., O'Halloran, S. and Joly, L., 2015. Multiple exclusion homelessness: The preventive role of social work. *British Journal of Social Work* 45(2), pp. 587–599.
- Margier, A. 2023. The compassionate invisibilization of homelessness: where revanchist and supportive city policies meet. *Urban Geography*, 44(1), pp.178-197
- Marquardt, N. 2016. Learning to feel at home. Governing homelessness and the politics of affect. *Emotion, Space and Society* 19, pp. 29–36.
- Matthews, P., Poyner, C. and Kjellgren, R. 2019. Lesbian, gay, bisexual, transgender and queer experiences of homelessness and identity: insecurity and home(o)normativity. *International Journal of Housing Policy* 19(2), pp. 232–253. Available at: <https://doi.org/10.1080/19491247.2018.1519341>.
- May, J. 2014. Racial vibrations, masculine performances: experiences of homelessness among young men of colour in the Greater Toronto Area. *Gender, Place & Culture* 22(3), pp. 405–421.
- May, J. and Cloke, P. 2014. Modes of Attentiveness: Reading for Difference in Geographies of Homelessness. *Antipode* 46(4), pp. 894–920. doi: 10.1111/anti.12043.
- Mayock, P, Bretherton, J, and Baptista, I. (2016) Women's Homelessness and Domestic Violence – (In)visible Interactions, in: Mayock, P. and Bretherton, J. (Eds.) *Women's Homelessness in Europe*, pp.127-154. London: Palgrave Macmillan.
- Mayock, P. and Parker, S. 2020. Homeless young people 'strategizing' a route to housing stability: service fatigue, exiting attempts and living 'off grid.' *Housing Studies* 35(3),

- pp. 459–483. doi: 10.1080/02673037.2019.1612036.
- Mayock, P., Sheridan, S. and Parker, S., 2015. 'Its just like we re going around in circles and going back to the same thing': The Dynamics of Womens Unresolved Homelessness. *Housing Studies* 30(6), pp. 877–900.
- Mayock, P., Corr, M.L. and O'Sullivan, E. 2013. Moving on, not out: When young people remain homeless. *Journal of Youth Studies* 16(4), pp. 441–459. doi: 10.1080/13676261.2012.725837.
- Mayock, P., O'Sullivan, E. and Corr, M.L. 2011. Young people exiting homelessness: An exploration of process, meaning and definition. *Housing Studies* 26(6), pp. 803–826. doi: 10.1080/02673037.2011.593131.
- Mccarthy, B. and Hagan, J. 1991. Homelessness: A criminogenic situation? *British Journal of Criminology* 31(4), pp. 393–410.
- McDowell, L. 1997. *Undoing Place? A Geographical Reader*. Arnold, London.
- McNaughton, C.C. 2008. Transitions through homelessness, substance use, and the effect of material marginalization and psychological trauma. *Drugs: Education, Prevention and Policy* 15(2), pp. 177–188.
- McVicar, D., Moschion, J. and Van Ours, J.C., 2015. From substance use to homelessness or vice versa? *Social Science and Medicine* 136–137, pp. 89–98.
- Mercier, C. and Picard, S. 2011. Intellectual disability and homelessness. *Journal of Intellectual Disability Research* 55(4), pp. 441–449. doi: 10.1111/j.1365-2788.2010.01366.x.
- Meth, P. 2003. Rethinking the “domus” in domestic violence: Homelessness, space and domestic violence in South Africa. *Geoforum* 34(3), pp. 317–327. doi: 10.1016/S0016-7185(03)00005-8.
- Metraux, S. 2004. Homeless Shelter Use and Reincarceration Following Prison Release. *Criminology & Public Policy* 3(2), pp. 139–160.
- Metraux, S. and Culhane, D.P. 2004. Homeless Shelter Use and Reincarceration Following Prison Release. *Criminology & Public Policy* 3(2), pp. 139–160.
- Metraux, S. and Culhane, D.P. 2006. Recent incarceration history among a sheltered homeless population. *Crime and Delinquency* 52(3), pp. 504–517. doi: 10.1177/0011128705283565.
- Miller, R.J. 2014. Devolving the carceral state: Race, prisoner reentry, and the micro-politics of urban poverty management. *Punishment and Society* 16(3), pp. 305–335.
- Millie, A. 2008. Anti-social behaviour, behavioural expectations and an urban aesthetic. *British Journal of Criminology* 48(3), pp. 379–394. doi: 10.1093/bjc/azm076.
- Milligan, C. and Wiles, J. 2010. Landscapes of care. *Progress in Human Geography* 34(6), pp. 736–754.
- Mitchell, D. 1997. The Annihilation of Space by Law: Anti-Homeless Laws in the United States. *Antipode* 29(1990), pp. 303–335. Available at: <http://dx.doi.org/10.1111/1467-8330.00048>.
- Mizock, L. and Russinova, Z. 2015. Intersectional Stigma and the Acceptance Process of Women with Mental Illness. *Women and Therapy* 38(1–2), pp. 14–30.
- Mizuno, Y., Purcell, D.W., Zhang, J., Knowlton, A.R., De Varona, M., Arnsten, J.H. and Knight, K.R., 2009. Predictors of current housing status among HIV-seropositive injection drug

- users (IDUs): Results from a 1-year study. *AIDS and Behavior* 13(1), pp. 165–172.
- Moore, G., Gerditz, M. and Manias, E., 2007. Homelessness, health status and emergency department use: An integrated review of the literature. *Australasian Emergency Nursing Journal* 10(4), pp. 178–185.
- Moorthie, S., Hayat, S., Zhang, Y., Parkin, K., Philips, V., Bale, A., Duschinsky, R., Ford, T. and Moore, A., 2022. Rapid systematic review to identify key barriers to access, linkage, and use of local authority administrative data for population health research, practice, and policy in the United Kingdom. *BMC Public Health* 22(1), pp. 1–13. doi: 10.1186/s12889-022-13187-9.
- Morgan, D.L. 2007. Paradigms Lost and Pragmatism Regained: Methodological Implications of Combining Qualitative and Quantitative Methods. *Journal of Mixed Methods Research* 1(1), pp. 48–76. doi: 10.1177/2345678906292462.
- Morgan, D.L. 2014. Pragmatism as a Paradigm for Social Research. *Qualitative Inquiry* 20(8), pp. 1045–1053. doi: 10.1177/1077800413513733.
- Murray, S. 2011. Violence Against Homeless Women: Safety and Social Policy. *Australian Social Work* 64(3), pp. 346–360.
- Neale, J. 2001. Homelessness amongst drug users: A double jeopardy explored. *International Journal of Drug Policy* 12(4), pp. 353–369.
- Neale, J. 2008. Homelessness , drug use and Hepatitis C : A complex problem explored within the context of social exclusion. 19, pp. 429–435. doi: 10.1016/j.drugpo.2007.09.001.
- Neale, J. and Stevenson, C. 2015. Social and recovery capital amongst homeless hostel residents who use drugs and alcohol. *International Journal of Drug Policy* 26(5), pp. 475–483.
- Neale, J., Tompkins, C. and Sheard, L., 2008. Barriers to accessing generic health and social care services: a qualitative study of injecting drug users. *Health & Social Care in the Community* 16(2), pp. 147–154.
- Netto, G. 2006. Vulnerability to homelessness, use of services and homelessness prevention in black and minority ethnic communities. *Housing Studies* 21(4), pp. 581–601. doi: 10.1080/02673030600709090.
- Netto, G., Pawson, H., and Sharp, C. 2009. Preventing homelessness due to domestic violence: Providing a safe space or closing the door to new possibilities? *Social Policy and Administration* 43(7), pp. 719–735.
- Newburn, T. 2002. Atlantic Crossings: ‘Policy transfer’ and crime control in the USA and Britain. *Punishment and Society* 4(2), pp. 165–194. doi: 10.1080/20502877.2017.1400755.
- Newburn, T. and Rock, P. 2005. *Living in Fear: Violence and Victimisation in the Lives of Single Homeless People*, London: Crisis
- Newburn, T. and Rock, P. 2006. Urban Homelessness, Crime and Victimisation in England. *International Review of Victimology* 13(2), pp. 121–156. doi: 10.1177/026975800601300201.
- Ng, A., Nadarajan, V., McIver, S., Reid, C., Schofield, E. and Sachar, A. 2015. Frequent attendances to a London emergency department: A service improvement project embedding mental health into the team. *London Journal of Primary Care* 7(4), pp. 70–77. doi: 10.1080/17571472.2015.11493438.

- Nicholls, C.M. and Atherton, I. 2011. Housing First: Considering components for successful resettlement of homeless people with multiple needs. *Housing Studies* 26(5), pp. 767–777.
- Nielsen, S.F., Hjorthoj, C. R., Erlangsen, A., and Nordentoft, M. 2011. Psychiatric disorders and mortality among people in homeless shelters in Denmark: A nationwide register-based cohort study. *The Lancet* 377, pp. 2205–2214.
- Nilsson, S.F., Nordentoft, M., Fazel, S. and Laursen, T.M. 2020. Homelessness and police-recorded crime victimisation: a nationwide, register-based cohort study. *The Lancet Public Health* 5(6), pp. e333–e341. Available at: [http://dx.doi.org/10.1016/S2468-2667\(20\)30075-X](http://dx.doi.org/10.1016/S2468-2667(20)30075-X).
- Nordentoft, M. and Wandall-Holm, N. 2003. 10 year follow up study of mortality among users of hostels for homeless people in Copenhagen. *BMJ* 327, pp. 81–83.
- Novac, S. Brown, J. and Bourbonnais, C. 2009. *Transitional Housing Models in Canada: Options and Outcomes*. In: Hulchanski, J. D; et al. (eds.) *Finding Home: Policy Options for Addressing Homelessness in Canada*. Toronto: Cities Centre, University of Toronto.
- O' Shaughnessy, B., Manning, R.M., Greenwood, R.M., Vargas-Moniz, M., Loubière, S., Spinnewijn, F., Gaboardi, M., Wolf, J.R., Bokszzczanin, A., Bernad, R. and Blid, M., 2021. Home as a Base for a Well-Lived Life: Comparing the Capabilities of Homeless Service Users in Housing First and the Staircase of Transition in Europe. *Housing, Theory and Society* 38(3), pp. 343–364. Available at: <https://doi.org/10.1080/14036096.2020.1762725>.
- O'Sullivan, E. 2012. Varieties of Punitiveness in Europe: Homelessness and Urban Marginality. *European Journal of Homelessness* 6(2), pp. 69–97.
- O'Sullivan, E., Pleace, N., Busch-Geertsema, V. and Filipovič Hrast, M. 2020. Distorting Tendencies in Understanding Homelessness in Europe. *European Journal of Homelessness* 14(1), pp. 109–135.
- Oliver, K., Lorenc, T. and Innvaer, S. 2014. New directions in evidence-based policy research: a critical analysis of the literature. *Health Research Policy and Systems* 12(1), pp. 1-11.
- Padgett, D.K., Gulcur, L. and Tsemberis, S. 2006. Housing First services for people who are homeless with co-occurring serious mental illness and substance abuse. *Research on Social Work Practice* 16(1), pp. 74–83.
- Padgett, D.K., Stanhope, V., Henwood, B.F. and Stefancic, A., 2011. Substance use outcomes among homeless clients with serious mental illness: Comparing Housing First with treatment first programs. *Community Mental Health Journal* 47(2), pp. 227–232.
- Page, M. 2017. Forgotten Youth: Homeless LGBT Youth of Color and the Runaway and Homeless Youth Act *Northwestern Journal of Law and Social Policy*; 12(2), pp. 17–45.
- Parr, H. 2000. Interpreting the 'hidden social geographies' of mental health: Ethnographies of inclusion and exclusion in semi-institutional places. *Health and Place* 6(3), pp. 225–237.
- Parsell, C. 2011. Responding to people sleeping rough: dilemmas and opportunities for social work. *Australian Social Work* 64(3) pp. 330–345
- Parsell, C. 2012. Home is Where the House is: The Meaning of Home for People Sleeping Rough. *Housing Studies* 27(2), pp. 159–173.

- Parsell, C., Clarke, A., Kuskoff, E. 2020. Understanding responses to homelessness during COVID-19: an examination of Australia. *Housing Studies* 0(0), pp. 1–14. Available at: <https://doi.org/10.1080/02673037.2020.1829564>.
- Paudyal, V., Ghani, A., Shafi, T., Punj, E., Saunders, K., Vohra, N., Hughes, H.E., Elliot, A.J., Lowrie, R. and Pucci, M., 2021. Clinical characteristics, attendance outcomes and deaths of homeless persons in the emergency department: implications for primary health care and community prevention programmes. *Public Health* 196, pp. 117–123. doi: 10.1016/j.puhe.2021.05.007.
- Phipps, M., Dalton, L., Maxwell, H. and Cleary, M. 2021. Combining Self-Determination Theory and Photo-Elicitation to Understand the Experiences of Homeless Women. *Issues in Mental Health Nursing* 42(2), pp. 164–171. Available at: <https://doi.org/10.1080/01612840.2020.1789785>.
- Pleace, N. 2010. Immigration and Homelessness. In: FEANTSA ed. *Homelessness Research in Europe*. Brussels, pp. 143–162.
- Pleace, N, Fitzpatrick, S, Johnsen, S, Quilgars, DJ & Sanderson, D. 2008. Statutory homelessness in England: the experience of families and 16–17-year-olds, Department for Communities and Local Government, London.
- Plsek, P.E. and Greenhalgh, T. 2001. Complexity science: The challenge of complexity in health care. *Bmj* 323(7313), pp. 625–628.
- Pluck, G., Lee, K.H. and Parks, R., 2007. Homeless shelters and substance misuse. *Canadian Medical Association Journal*, 176(4), pp.489-489.
- Poremski, D., Stergiopoulos, V., Braithwaite, E., Distasio, J., Nisenbaum, R. and Latimer, E., 2016. Effects of Housing First on Employment and Income of Homeless Individuals: Results of a Randomized Trial. *Psychiatric Services* 67(6), pp. 603–609.
- Rayburn, R.L. and Guittar, N. 2013. “This Is Where You Are Supposed to Be”: How Homeless Individuals Cope with Stigma. *Sociological Spectrum* 33(2), pp. 159–174.
- Reeve, K. 2011. *The hidden truth about homelessness: experiences of single homelessness in England*. Crisis: London. Available at: https://www.crisis.org.uk/media/236815/the_hidden_truth_about_homelessness.pdf. [Accessed 22 March 2019]
- Reeve, K. 2018. Women and homelessness: putting gender back on the agenda. *People, Place and Policy Online* 11(3), pp. 165–174. doi: 10.3351/ppp.2017.8845235448.
- Reeve K. with Goudie, R. and Casey, R. (2007) *Homeless Women: Homelessness Careers, Homelessness Landscapes* (London: Crisis).
- Reilly, J., Hassanally, K., Budd, J. and Mercer, S. 2020. Accident and emergency department attendance rates of people experiencing homelessness by GP registration: a retrospective analysis. *BJGP Open* 4(5), pp. 1–8. doi: 10.3399/bjgpopen20X101089.
- Reppond, H.A. and Bullock, H.E. 2020. Reclaiming “good motherhood”: US mothers’ critical resistance in family homeless shelters. *Feminism and Psychology* 30(1), pp. 100–120. doi: 10.1177/0959353519870220.
- Richter, F.G.C., Coulton, C., Urban, A. and Steh, S. 2021. An Integrated Data System Lens Into Evictions and Their Effects. *Housing Policy Debate* 31(3–5), pp. 762–784. Available at: <https://doi.org/10.1080/10511482.2021.1879201>.
- Roberts, A. and Archer, B. 2022. Co-Productive Approaches To Homelessness in England and Wales Beyond the Vagrancy Act 1824 and Public Spaces Protection Orders. *British Journal of Community Justice* 18(1), pp. 4–20. doi: 10.48411/jp74-nn80.

- Robinson, J., Young, T.K., Roos, L.L. and Gelskey, D.E. 1997. Estimating the Burden of Disease: Comparing Administrative Data and Self-Reports. *Medical Care* 35(9), pp. 932–947.
- Robinson, T. 2019. No Right to Rest: Police Enforcement Patterns and Quality of Life Consequences of the Criminalization of Homelessness. *Urban Affairs Review*, 55(1), 41-73. <https://doi.org/10.1177/1078087417690833>
- Rogers, T., Ross, N., Spooner, D. 2004. Evaluation of a 'see and treat' pilot study introduced to an emergency department. *Accident and Emergency Nursing*, 12(1) pp.24-27
- Salit, S.A., Kuhn, E.M., Hartz, A.J., Vu, J.M. and Mosso, A.L., 1998. Hospitalization Costs Associated with Homelessness in New York City. *New England Journal of Medicine* 338(24), pp. 1734–1740.
- Schanzer, B. Dominguez, B., Shrout, P.E. and Caton, C.L., 2007. Homelessness, Health Status, and Health Care Use. *American Journal of Public Health Environmental and Occupational Health* 97(3), pp. 464–469.
- Schram, S. F., Soss, J., Houser, L., and Fording, R. C. 2010. The third level of US welfare reform: Governmentality under neoliberal paternalism. *Citizenship Studies*, 14(6), pp.739-754
- Scullion, L., Somerville, P., Brown, P. and Morris, G. 2015. Changing homelessness services: Revanchism, “professionalisation” and resistance. *Health and Social Care in the Community* 23(4), pp. 419–427. doi: 10.1111/hsc.12159.
- Sempere-Selva, T., Peiró, S., Sendra-Pina, P., Martínez-Espín, C. and López-Aguilera, I. 2001. Inappropriate use of an accident and emergency department: Magnitude, associated factors, and reasons - An approach with explicit criteria. *Annals of Emergency Medicine* 37(6), pp. 568–579. doi: 10.1067/mem.2001.113464.
- Sexton, A., Shepherd, E., Duke-Williams, O. and Eveleigh, A. 2018. The role and nature of consent in government administrative data. *Big Data and Society* 5(2), pp. 1–17. doi: 10.1177/2053951718819560.
- Shepherd, E., Sexton, A., Duke-Williams, O. and Eveleigh, A. 2020. Risk identification and management for the research use of government administrative data. *Records Management Journal* 30(1), pp. 101–123. doi: 10.1108/RMJ-03-2019-0016.
- Shinn, M. & Baumohl, J. .1999. *Rethinking the prevention of homelessness*, in: L. Fosburg & D. Dennis (Eds) Practical Lessons: The 1998 National Symposium on Homelessness Research. US Department of Housing and Urban Development/US Department of Health and Human Services. Available at <http://aspe.hhs.gov/progsys/homeless/symposium/13-Preven.HTM> (accessed 26 May 2011)
- Shinn, M., Weitzman, B. C., Stojanovic, D., Knickman, J. R., Jimenez, L., Duchon, L., James, S., and Krantz, D. H. 1998. Predictors of homelessness among families in New York City: From shelter request to housing stability. *American Journal of Public Health* 88(11), pp. 1651–1657.
- Shinn, M., Baumohl, J. and Hopper, K. 2001. The Prevention of Homelessness Revisited. *Analyses of Social Issues and Public Policy* 1(1), pp. 95–127. doi: 10.1111/1530-2415.00006.
- Skinner, D. 2005. A Modified Therapeutic Community for Homeless Persons with Co-Occurring Disorders of Substance Abuse and Mental Illness in a Shelter: An Outcome Study. *Substance Use & Misuse* 40(4), pp. 483–497.

- Smith, N. 1979. Geography, science and post-positivist modes of explanation. *Progress in Human Geography* 3(3), pp. 356–383. doi: 10.7458/SPP2015786687.
- Smith, N. 1996. *The new urban frontier: gentrification and the revanchist city*. Routledge.
- Somerville, P. 1990. Homelessness and the meaning of home: Rooflessness or rootlessness? *International Journal of urban and regional Research* 16(4), pp. 529–539.
- Somerville, P. 2013. Understanding Homelessness. *Housing, Theory and Society* 30(4), pp. 384–415.
- Somerville, P. and Bengtsson, B. 2002. Constructionism, realism and housing theory. *Housing, Theory and Society* 19(3–4), pp. 121–136.
- Somerville, P. and Bengtsson, B. 2002. Constructionism, realism and housing theory. *Housing, Theory and Society* 19(3–4), pp. 121–136. Available at: <http://dx.doi.org/10.1080/140360902321122789>.
- Song, J., Moreno-stokoe, C., Grey, C.N.B. and Davies, A.R. 2021. *Health of individuals with lived experience of homelessness in Wales , during the COVID-19 pandemic*. Cardiff.
- Song, J.Y., Safaeian, S. A., Strathdee, D., Vlahov, D. and Celentano, D. 2000. The prevalence of homelessness among injection drug users with and without HIV infection. *Journal of Urban Health* 77(4), pp. 678–687.
- South Wales Police. 2023. *About us: Overveiw*. Available at: <https://www.south-wales.police.uk/police-forces/south-wales-police/areas/about-us/about-us/overview/> [Accessed 5 May 2022]
- Spicer, S.S. 2010. Healthcare needs of the transgender homeless population. *Journal of Gay and Lesbian Mental Health* 14(4), pp. 320–339. doi: 10.1080/19359705.2010.505844.
- STATA. 2025. *Incidence-rate ratio calculator*. Available at: <https://www.stata.com/links/stata-basics/incidence-rate-ratio-calculator/> [Accessed 5 May 2025]
- Stuart, F., 2015. On the streets, under arrest: Policing homelessness in the 21st century. *Sociology Compass*, 9(11), pp.940-950.
- Sun, S. Irestig, R., Burström, B., Beijer, U. and Burström, K., 2012. Health-related quality of life (EQ-5D) among homeless persons compared to a general population sample in Stockholm County, 2006. *Scandinavian Journal of Public Health* 40(2), pp. 115–125.
- Takashi, L. 1997. The Socio-Spatial Stigmatization of Homelessness and HIV/ AIDS : Toward an Explanation of the Nimby Syndrome. *Social Science and Medicine* 45(6), pp. 903–914.
- Teddlie, C. and Tashakkori, A., 2011. *Mixed methods research*. In Denzin NK, Lincoln YS (ed.), *The Sage handbook of qualitative research*, London: SAGE Publications Ltd. pp.285-300.
- Teruya, C., Longshore, D., Andersen, R.M., Arangua, L., Nyamathi, A., Leake, B. and Gelberg, L., 2010. Health and health care disparities among homeless women. *Women and Health* 50(8), pp. 719–736.
- Thabane, L., Mbuagbaw, L., Zhang, S., Samaan, Z., Marcucci, M., Ye, C., Thabane, M., Giangregorio, L., Dennis, B., Kosa, D. and Debono, V.B., 2013. A tutorial on sensitivity analyses in clinical trials: the what, why, when and how. *BMC Medical Research Methodology* 13(92), pp. 1–12. doi: 10.1002/pds.1200.

- Third, H. 2000. Researching Homelessness and Rough Sleeping in the Scottish Context. *Social Policy & Administration* 34, pp. 448–464. doi: 10.1111/1467-9515.00203.
- The Home Office. 2011. *The National Standard of Incident Recording*. Available at: <https://www.gov.uk/government/publications/the-national-standard-for-incident-recording-nsir-counting-rules> [accessed 21 October 2023]
- Thomas, I. 2020. *Feasibility study into a new case level homelessness data system for Wales*. Cardif: CaCHE. Available at: https://housingevidence.ac.uk/wp-content/uploads/2020/08/12471_CaCHE_wales_homeless_upload_spreads.pdf. [accessed 3 October 2021]
- Thomas, I. and Mackie, P. 2021. A population level study of SARS-CoV-2 prevalence amongst people experiencing homelessness in Wales, UK. *International Journal of Population Data Science* 5(4), p. 1695.
- Thomas, I. and Tweed, E. 2018. The Promises and Pitfalls of Administrative Data Linkage for Tackling Homelessness. *European Journal of Homelessness*, 15(3), pp.177-188
- Thomas, I., 2020. *Analysing Administrative Data*. In: Paul Atkinson, ed., Sage Research Methods Foundations. London: SAGE Publications Ltd. Available at: <https://doi.org/10.4135/9781526421036871241> [Accessed 15 May 2023]
- Thurston, W.E., Roy, A., Clow, B., Este, D., Gordey, T., Haworth-Brockman, M., McCoy, L., Beck, R.R., Saulnier, C. and Carruthers, L., 2013. Pathways Into and Out of Homelessness: Domestic Violence and Housing Security for Immigrant Women. *Journal of Immigrant and Refugee Studies* 11(3), pp. 278–298. doi: 10.1080/15562948.2013.801734.
- Tipple, G. and Speak, S. 2006. Who is homeless in developing countries?: Differentiating between inadequately housed and homeless people. *International Development Planning Review* 28(1), pp. 57–84.
- Tipple, G. and Speak, S. 2006. Who is homeless in developing countries?: Differentiating between inadequately housed and homeless people. *International Development Planning Review* 28(1), pp. 57–84.
- Tomas, A. and Dittmar, H. 1995. The Experience of Homeless Women: An Exploration of Housing Histories and the Meaning of Home. *Housing Studies* 10(4), pp. 493–515.
- Tsemberis, S., Gulcur, L. and Nakae, M. 2004. Housing First, Consumer Choice, and Harm Reduction for Homeless Individuals With a Dual Diagnosis. *American Journal of Public Health* 94(4), pp. 651–656. doi: 10.2105/AJPH.94.4.651.
- Turner, B.S. 1993. Outline of a Theory of Human Rights. *Sociology* 27(3), pp. 489–512.
- Tyler, K.A., Hoyt, D.R., Whitbeck, L.B. and Cauce, A.M., 2001. The effects of a high-risk environment on the sexual victimization of homeless and runaway youth. *Violence and victims* 16(4), pp. 441–55.
- Valentine, G. 2007. Theorizing and Researching Intersectionality A Challenge for Feminist Geography. *The Professional Geographer* 59(1), pp. 10–21.
- Vallersnes, O.M., Jacobsen, D., Ekeberg, Ø. and Brekke, M. 2019. Mortality and repeated poisoning after self-discharge during treatment for acute poisoning by substances of abuse: A prospective observational cohort study. *BMC Emergency Medicine* 19(1), pp. 1–7. doi: 10.1186/s12873-018-0219-9.
- van Wezemaal, J. 2009. Housing Studies between romantic and baroque complexity. *Housing, Theory and Society* 26(2), pp. 81–121.
- Wacquant, L. 2010. Crafting the neoliberal state: Workfare, prisonfare and social insecurity.

- Why Prison?* 25(2), pp. 65–86.
- Walby, S. 2007. Complexity Theory, Systems Theory, and Multiple Intersecting Social Inequalities. *Philosophy of the Social Sciences* 37(4), pp. 449–470.
- Walby, S., Armstrong, J. and Strid, S., 2012. Intersectionality: Multiple inequalities in social theory. *Sociology* 46(2), pp. 224–240.
- Waldron, J. 1991. Homelessness and the Issue of Freedom. *UCLA Law Reveiw* 39, pp. 295–324.
- Wardhaugh, J. 1999. The unaccommodated woman: Home, homelessness and identity. *Sociological Review*, 47(1), 91-109
- Wardhaugh, J. 1999. The unaccommodated woman: Home, homelessness and identity. *Sociological Review* 47(1). doi: 10.1111/1467-954X.00164.
- Wardhaugh, J. 2012. *Policies to address homelessness. Criminalisation and control of public space*. Elsevier Ltd. Available at: <http://dx.doi.org/10.1016/B978-0-08-047163-1.00383-0>. [Accessed 26 January 2020]
- Wardrop, R., Ranse, J., Chaboyer, W. and Crilly, J., 2002. Predictors of emergency department service outcome for people brought in by police: a retrospective cohort study. *International Emergency Nursing*, 63, p.101188.
- Warnes, A.M. and Crane, M. 2006. The Causes of Homelessness Among Older People in England. *Housing Studies* 21(3), pp. 401–421. Available at: <http://dx.doi.org/10.1080/02673030600586027%5Cn10.1080/02673030600586027>.
- Watson, S. 2014. Discharges to the Streets: Hospitals and Homelessness. *Saint Louis University Public Law Reveiw* 1. doi: 10.1525/sp.2007.54.1.23.
- Watts, B. 2014. Homelessness , Empowerment and Self-reliance in Scotland and Ireland : The Impact of Legal Rights to Housing for Homeless People. *Journal of Social Policy* 43(4), pp. 793–810.
- Watts, B., Fitzpatrick, S. and Johnsen, S. 2018. Controlling Homeless People? Power, Interventionism and Legitimacy. *Journal of Social Policy* 47(2), pp. 235–252. doi: 10.1017/S0047279417000289.
- Waugh, A., Clarke, A., Knowles, J. and Rowley, D. 2018. *Health and Homelessness in Scotland*. Edinburgh: Scottish Government Available at: <https://www.nrscotland.gov.uk/files/statistics/Events/Events/SG-health-homelessness.pdf> [Accessed 5 November 2019]
- Weiser, S.D., Neilands, T.B., Comfort, M.L., Dilworth, S.E., Cohen, J., Tulskey, J.P. and Riley, E.D., 2009. Gender-specific correlates of incarceration among marginally housed individuals in San Francisco. *American Journal of Public Health* 99(8), pp. 1459–1463.
- Wenzel, S.L., Koegel, P. and Gelberg, L., 2000. Antecedents of physical and sexual victimization among homeless women: a comparison to homeless men. *American Journal of Community Psychology* 28(3), pp. 367–390.
- Whitley, R. 2013. Fear and loathing in New England: Examining the health-care perspectives of homeless people in rural areas. *Anthropology and Medicine* 20(3), pp. 232–243.
- Whitzman, C. 2006. At the intersection of invisibilities: Canadian women, homelessness and health outside the 'big city'. *Gender, Place and Culture* 13(4), pp. 383–399.
- Williams, J. 1996. Geography of The Homeless Shelter: Staff Surveillance and Resident Resistance. *Urban Anthropology and Studies of Cultural Systems and World*

Economic Development, 25(1), pp. 75-113.

Wolch, J. and Philo, C. 2000. From distributions of deviance to definitions of difference: Past and future mental health geographies. *Health and Place* 6(3), pp. 137–157.

Woodhall-Melnik, J. Dunn, J.R., Svenson, S., Patterson, C. and Matheson, F.I., 2018. Men's experiences of early life trauma and pathways into long-term homelessness. *Child Abuse and Neglect* 80, pp. 216–225.

Yarwood, R. 2007. The geographies of policing. *Progress in Human Geography* 31(4), pp. 447–465. doi: 10.1177/0309132507079500.

Yogendran, M. and Kraut, A. 2013. Hospital Against Medical Advice : a Population-Based Study. 185(14), pp. 1–8.

Yu, V. 2010. Shelter and transitional housing for transgender youth. *Journal of Gay and Lesbian Mental Health* 14(4), pp. 340–345. doi: 10.1080/19359705.2010.504476.

10 Annexe

Table 38: Interaction types from raw police data

Category	Recoded
AD12 Police Generated Resource Activity	Removed during cleaning
AD13 Pre-Planned Events	Removed during cleaning
AD14 Test/Training	Removed during cleaning
AD2 Bail/Curfew:Checks/Breach	Removed during cleaning
AD4 Cancel/Exit/Error	Removed during cleaning
AD5 Complaints against Police	Removed during cleaning
AD6 Duplicate	Removed during cleaning
AD7 Contact Record	Removed during cleaning
AD8 Lost/Found Property/Found person	Removed during cleaning
AD9 Messages	Removed during cleaning
AD99 Admin Summons	Removed during cleaning
AN1 Abandoned Vehicles (not stolen/caus	
AN10 Rowdy/Nuisance - Environmental Dam	
AN11 Rowdy/Nuisance - Neighbours	
AN12 Rowdy/Nuisance - Rowdy & Inconsiderate	
AN13 Street Drinking	
AN14 Solvent Misuse	
AN15 Trespass	
AN16 Vehicle Nuisance/Inappropriate Vehicle	
AN17 ASB - Environmental	Reported in analysis chapter
AN18 ASB - Nuisance	Reported in analysis chapter
AN19 ASB - Personal	Reported in analysis chapter
AN2 Animal Problems	
AN3 Begging/Vagrancy	
AN5 Hoax call to emergency services	
AN6 Inappropriate use/sale/possession of	
AN7 Malicious/Nuisance Communications	
AN8 Noise	
AN9 Prostitution Related Activity	

CR1 Murder	
CR10 Sexual Offences Other	
CR11 Property Crime - Dwelling	
CR12 Property Crime - Shed/Garage	
CR13 Property Crime - Educational	
CR14 Property Crime - Commercial	
CR15 Property Crime - Other	
CR16 Robbery - Personal	
CR17 Robbery - Business	
CR18 Robbery - Other	
CR19 Theft of Motor Vehicle	
CR20 Theft from Motor Vehicle	
CR21 Shoplifting	
CR22 Theft - Other	
CR23 Criminal Damage - Dwelling	
CR24 Criminal Damage - Shed/Garage	
CR25 Criminal Damage - Educational	
CR26 Criminal Damage - Commercial	
CR27 Criminal Damage - Motor Vehicle	
CR28 Criminal Damage - Arson	
CR29 Criminal Damage - Other	
CR3 G.B.H	
CR30 Fraud, Forgery and Similar	
CR31 Drugs	Reported in analysis chapter
CR32 Kidnap/Abduction	
CR33 Child Abuse	
CR34 Road Crime	
CR35 Unlisted Crime Other	
CR36 Harrassment (Crime)	
CR37 Violence Against the Person	Reported in analysis chapter – focus
CR38 Sexual Offences	Reported in analysis chapter
CR39 Robbery	Reported in analysis chapter
CR4 A.B.H	
CR40 Burglary	Reported in analysis chapter
CR41 Theft & Handling	Reported in analysis chapter – focus
CR42 Fraud & Forgery	Reported in analysis chapter
CR43 Damage	Reported in analysis chapter
CR44 Miscellaneous	

CR45 Crime Related Incident	Reported in analysis chapter
CR5 Common Assault	
CR6 Violence against the person other	
CR7 Rape	
CR8 U.S.I	
CR9 Indecent Assault	
NULL	
PS1 Abandoned Call To Emergency Service	Reported in analysis chapter
PS10 Concern for Safety	Reported in analysis chapter – focus
PS11 Domestic Incident	Reported in analysis chapter – focus
PS12 Firearms	Reported in analysis chapter
PS13 Immigration	Reported in analysis chapter
PS14 Industrial Incident/Accident	
PS15 Insecure Premises/Vehicles	
PS16 Licensing	
PS18 Missing Person-High Risk	
PS19 Missing Person-Medium Risk	
PS2 Absconder/AWOL	
PS20 Missing Person-Low Risk	
PS21 Missing Person-Unauthorised absence	
PS22 Natural Disaster/Incident/Warning	
PS23 Pets/Domesticated Animals	
PS24 Protest/Demonstration	
PS25 Sudden Death	Reported in analysis chapter
PS26 Suspicious Circumstances	
PS27 Suspicious package/object	Reported in analysis chapter
PS28 Truancy	
PS29 Wildlife	
PS3 Alarm:Monitoring Station - False-Ac	
PS30 Absconder/AWOL/Wanted Persons/Poli	Reported in analysis chapter
PS31 Alarm	Reported in analysis chapter
PS32 Animals/Wildlife	Reported in analysis chapter
PS33 Hoax Calls	Reported in analysis chapter
PS34 Missing Person	Reported in analysis chapter
PS35 Suspicious Circumstances/Insecure	Reported in analysis chapter
PS4 Alarm:Monitoring Station - False-Wi	
PS5 Alarm: Police Installed	

PS6 Alarm: Audible only	
PS7 Breach of injunction	
PS8 Civil Dispute	Reported in analysis chapter
PS9 Collapse/Illness/Injury/Trapped	
TR1 RTC-Death	
TR10 Rail/Air/Marine Incident Not Record	
TR2 RTC-Serious Injury	
TR3 RTC-Minor Injury	
TR4 RTC-Damage Only	Reported in analysis chapter
TR5 Highway Disruption	Reported in analysis chapter
TR6 Road related offence	
TR7 Transport Incident/Accident not rec	Reported in analysis chapter
TR8 PVI (POLAC)	
TR9 RTC - Death/Injury	Reported in analysis chapter

Table 39: Involvement categories from raw police data

Involvement Category	Recode
ADS (Alcohol Diversion Scheme)	Other
AWOL	Other
Absconder	
Adult conditional caution	Other
Aggrieved	Focus
Arrested	
Attending scene	Other
CCTV operator	Other
Cannabis warning	
Carer	
Cautioned	
Charged	Focus
Charges recommended	
Child < 10	Other
Child > 10	
Community resolution	
Consultant	Other
DAS (Driver Awareness Scheme)	Other
Deceased	
Detected - other	Other
Doctor	Other
Driver	
Eliminated	

Escapee	Other
Failed to answer bail	Other
Finder	Other
Firearm applicant	Other
Firearm cancelled	Other
Firearm expired	
Firearm holder	Other
Firearms refused/revoked	Other
Fixed penalty	
Fixed penalty - fine registered	Other
Forensic scientist	
HORT1	Other
Hist - Health care professional (HCP)	
Hist - Adult restorative disposal (ARD)	
Hist - Final warning	Other
Hist - Reprimanded	Other
Hist - Section 27 notice	
Warned - 1st instance harassment	
Immigration	Other
Injured	
Interpreter	Other
Key individual network	Other
Last to see	Other
Law enforcement agency	
Located	
Loser	Other
Mental health	
Missing	
Missing (accompanied)	Other
NOK	
Negative breath test	Other
No further action	
Observed	Other
Other	
Owner	
PIN issued	
Passenger	
Pedestrian	Other
Person reporting	Focus
Police bail	
Possible suspect	

Postal requisition	
Present during search	Other
Probation	Other
Prostitute street warning	Other
RTC - Fail to stop	Other
RTC - Verbal warning	Other
Reported by	
Reported for Summons	
Rider	Other
Security guard	Other
Single justice procedure	
Social Worker	Other
Source	Other
Stop and account	
Stop and search	
Strategic point of interest	
Street bail	Other
Subject	Focus
Subject - crime	
Suicidal	
Suspect	Other
Suspect - ident	Other
TIC	
Transfer to another force	Other
Truant	
VDRS	
Voluntary attendee	
Vulnerable	
Vulnerable witness	Other
Wanted	
Wanted on warrant	Other
Warned - 1st instance harassment	
Warrant executed	
Witness	Focus
Young offender	Other
Youth caution	Other
Youth conditional caution	
Youth restorative disposal (YRD)	Other

10.1 Tables for Chapter 5

Table 40: Recoding of ethnic group from raw data

Detailed ethnicity codes	Recoded category
White Welsh/English/Scottish/Northern Irish/British	White
White Irish	White
Other White Background	White
White and Black Caribbean	Other/ Mixed/ Multiple Ethnic Group
White and Black African	Other/ Mixed/ Multiple Ethnic Group
White and Asian	Other/ Mixed/ Multiple Ethnic Group
Other Mixed/ Multiple Ethnic Background	Other Mixed/ Multiple Ethnic Group
Indian	Asian, Asian British, or Asian Welsh
Pakistani	Asian, Asian British, or Asian Welsh
Bangladeshi	Asian, Asian British, or Asian Welsh
Other Asian Background	Asian, Asian British, or Asian Welsh
Caribbean	Black, Black British, Black Welsh, Caribbean or African
African	Black, Black British, Black Welsh, Caribbean or African
Other Black/African/Caribbean Background	Black, Black British, Black Welsh, Caribbean or African
Chinese	Asian, Asian British, or Asian Welsh
Other	Other Ethnic Group
Ethnic Background Not Known	Ethnic Origin Not Known
Gypsy or Irish Traveller	White
Arab	Other Ethnic Group

Table 41: Recoding of 'cause of homelessness' from raw data

Meta data description	Recode
Parents no longer willing or able to accommodate	Parents no longer accommodate
Other relatives / friends no longer willing or able to accommodate	Friends/relatives no longer accommodate
Breakdown of relationship - partner violent	Breakdown of relationship
Violence or harassment due to religion or belief	Violence or harassment
Breakdown of relationship - partner nonviolent	Breakdown of relationship
Mortgage arrears - repossession or other loss of home	Mortgage arrears
Violence or harassment which is racially motivated	Violence or harassment
Rent arrears - L.A.	Rent arrears
Rent arrears - H.A. / other public sector	Rent arrears
Rent arrears - private sector	Rent arrears
Termination of short hold assured Private Sector Dwelling	Termination or loss of tenancy
Loss of rented or tied accommodation	Termination or loss of tenancy
In institution or care	Institution or care
Fire / flood - emergencies	Fire/flood - emergencies
Returned from abroad / grant work / other	Returned from abroad
Hostel / rough sleeper	Hostel/rough sleeper
Anti-social behaviour eviction - L.A.	ASB (anti-social behaviour)
Anti-social behaviour eviction - H.A.	ASB (anti-social behaviour)
Current property unsuitable	Current property unsuitable
Current property unaffordable (not in arrears)	Current property unaffordable
Violence or harassment due to gender reassignment (gender identity)	Violence or harassment
Violence or harassment due to sexual identity / orientation	Violence or harassment
Violence or harassment due to disability	Violence or harassment
Violence or harassment other	Violence or harassment
Prison leaver	Prison leaver

Table 42: Age at first homelessness event in cleaned, person-level-dataset

Age category	Frequency	Per cent
under 25	1,776	22.72
26-35	2,763	35.35

36-45	1,667	21.33
46-55	1,006	12.87
56-65	419	5.36
66-85	185	2.37
Total	7,816	100

Table 43: Household type of lead applicants in cleaned person level dataset

Household type	Frequency	Per cent
Couple with Dependent Child(ren)	538	7
Single Parent with Dependent Child(ren) Male Applicant	101	1
Single Parent with Dependent Child(ren) Female Applicant	1,696	22
Single Person Male Applicant	3,345	43
Single Person Female Applicant	1,494	19
Other House Group	642	8
Total	7,816	100

Table 44: Ethnic group in cleaned person-level dataset

Ethnicity	Frequency	Per cent
White	6,937	89
Mixed or Multiple Ethnic Groups	38	0
Asian, Asian British or Asian Welsh	319	4
Black, Black British, Black Welsh, Caribbean or African	351	4
Other Ethnic Group	165	2
Ethnic Origin Not Known	6	0
Total	7,816	100

10.2 Tables for Chapter 6

Table 45: NKHS cleaned and raw data for injury type. Event level

Category	Raw data		Cleaned data		
	Frequency	Per cent	Frequency	Per cent	Difference
Fall/slip/trip	40,438	6.77	27,050	7.7	0.93
Blunt force/blow from person/animal/machine	6,730	1.13	4,433	1.26	0.13
Crushing injury	895	0.15	669	0.19	0.04
Stabbing / Cut with sharp object	925	0.15	696	0.2	0.05
Poisoning/Overdose	6,638	1.11	4,075	1.16	0.05

Burning/scalding	4,019	0.67	2,699	0.77	0.10
Other	322,580	54.02	202,692	57.68	3.66
Not Applicable – e.g., Non-Injury	62,406	10.45	50,672	14.42	3.97
Not Specified	152,336	25.51	58,425	16.63	-8.88
Missing	179	0.03	0	0	-0.03
Total	597,146	100	351,411	100	

Table 46: NKHS cleaned and raw data for triage category. Event level

Category	Raw data		Cleaned data		
	Frequency	Per cent	Frequency	Per cent	Difference
Priority one - immediate	230	0.04	82	0.02	-0.02
Priority two – very urgent	2,146	0.36	918	0.26	-0.10
Priority three – urgent	6,812	1.14	2,502	0.71	-0.43
Standard	9,185	1.54	4,334	1.23	-0.31
Non-urgent	255	0.04	70	0.02	-0.02
See and treat	577,688	96.74	343,505	97.75	1.01
Missing	830	0.11	0	0	-0.11
Total	597,146	100	351,411	100	

Table 47 NKHS cleaned and raw data for discharge route. Event level

Category	Raw data		Cleaned data		
	Frequency	Per cent	Frequency	Per cent	Difference
Admitted to same Hospital within Local Health Board	106,430	17.82	64,152	18.26	0.44
Admitted to other Hospital within Local Health Board	16,002	2.68	8,295	2.36	-0.32
Transferred to different Local Health Board	971	0.16	483	0.14	-0.02
Referred to Outpatient Department	38,591	6.46	24,246	6.9	0.44
Referred to GP	215,939	36.16	144,735	41.19	5.03
Referred to Other Healthcare Professional	8,287	1.39	4,598	1.31	-0.08
No Planned Follow-up	112,652	18.87	47,464	13.51	-5.36
Planned Follow-up at Accident and Emergency Department	71,033	11.9	40,881	11.63	-0.27
Patient Self Discharged without Clinical Consent	25,980	4.35	15,931	4.53	0.18
Died	1,011	0.17	626	0.18	0.01
Missing	250	0.04	0	0	-0.04
Total	597,146	100	351,411	100	

Table 48 NKHS cleaned and raw data for arrival mode. Event level

Category	Raw data		Cleaned data		
	Frequency	Per cent	Frequency	Per cent	Difference
Ambulance	130,015	21.77	74,890	21.31	-0.46
Helicopter / Air Ambulance	329	0.06	60	0.02	-0.04
Private Motorised Vehicles (Car/ Lorry/ Van/ Motorbike/ Scooter/ Moped etc.)	383,693	64.25	222,707	63.38	-0.87
Public Transport (Bus/ Coach/ Train/ Taxi)	1,601	0.27	249	0.07	-0.2
Walked	6,417	1.07	2,230	0.63	-0.44
Police Car	2,398	0.4	1,203	0.34	-0.06
Other	60,034	10.05	40,248	11.45	1.4
Not Applicable (Planned Follow-up)	12,487	2.09	9,824	2.8	0.71
Missing	172	0.03	0	0	-0.03
Total	597,146	100	351,411	100	

Table 49 PWEH cleaned and raw data for injury type. Event level

Category	Raw data		Cleaned data		
	Frequency	Per cent	Frequency	Per cent	Difference
Fall/slip/trip	2018	3.92	1,372	4.34	0.42
Blunt force/blow from person/animal/machine	1521	2.95	1,069	3.38	0.43
Crushing injury	48	0.09	38	0.12	0.03
Stabbing	33	0.06	25	0.08	0.02
Cut with sharp object	147	0.29	107	0.34	0.05
Poisoning/Overdose	1297	2.52	805	2.54	0.02
Burning/scalding	259	0.5	178	0.56	0.06
Other	40158	77.94	23,625	74.66	-3.28
Not Applicable – e.g., Non- Injury	5869	11.39	4,423	13.98	2.59
Not Specified	0	0	0	0	0.00
Missing	172	0.33	0	0	-0.33
Total	51,522	100	31,642	100	

Table 50 PWEH cleaned and raw data for triage code

Category	Raw data		Cleaned data		
	Frequency	Per cent	Frequency	Per cent	Difference
Priority one - immediate	44	0.09	25	0.08	-0.01
Priority two – very urgent	559	1.08	356	1.13	0.05
Priority three – urgent	1,911	3.71	1,145	3.62	-0.09
Standard	1,432	2.78	737	2.33	-0.45
Non-urgent	95	0.18	49	0.15	-0.03
See and treat	47,125	91.47	29,330	92.69	1.22
Missing	356	0.69	0	0	-0.69
Total	51,522	100	31,642	100	

Table 51 PWEH cleaned and raw data for discharge route. Event level

Category	Raw data		Cleaned data		
	Frequency	Per cent	Frequency	Per cent	Difference
Admitted to same Hospital within Local Health Board	7,695	14.94	5,010	15.83	0.89
Admitted to other Hospital within Local Health Board	1,950	3.78	1,160	3.67	-0.11
Transferred to different Local Health Board	121	0.23	74	0.23	0.00
Referred to Outpatient Department	2,669	5.18	1,711	5.41	0.23
Referred to GP	16,415	31.86	11,395	36.01	4.15
Referred to Other Healthcare Professional	1,241	2.41	665	2.1	-0.31
No Planned Follow-up	10,275	19.94	4,820	15.23	-4.71
Planned Follow-up at Accident and Emergency Department	4,583	8.9	2,611	8.25	-0.65
Patient Self Discharged without Clinical Consent	6,424	12.47	4,183	13.22	0.75
Died	16	0.03	13	0.04	0.01
Missing	133	0.26	0	0	-0.26
Total	51,522	100	31,642	100	

Table 52 PWEH cleaned and raw data for arrival mode. Event level

Category	Raw data		Cleaned data		
	Frequency	Per cent	Frequency	Per cent	Difference
Ambulance	16,969	32.94	10,723	33.89	0.95
Private Motorised Vehicles (Car/ Lorry/ Van/ Motorbike/ Scooter/ Moped etc.)	27,675	53.71	16,701	52.78	-0.93
Public Transport (Bus/ Coach/ Train/ Taxi)	299	0.58	131	0.41	-0.17
Walked	643	1.25	310	0.98	-0.27
Police Car	1,762	3.42	1,105	3.49	0.07
Other	3,315	6.43	2,093	6.61	0.18
Not Applicable (Planned Follow-up)	771	1.5	579	1.83	0.33
Missing	88	0.17	0	0	-0.17
Total	51,522	100	31,642	100	

10.2.1 A&E tables - Comparison between full cleaned data for those not known to homelessness services and people who have experienced homelessness

Table 53 Comparison of discharge routes for all NKHS and PWEH. Event level

Category	NKHS		PWEH		Difference
	Frequency	Per cent	Frequency	Per cent	
Admitted to same Hospital within Local Health Board	64,152	18.26	5,010	15.83	-2.43
Admitted to other Hospital within Local Health Board	8,295	2.36	1,160	3.67	1.31
Transferred to different Local Health Board	483	0.14	74	0.23	0.09
Referred to Outpatient Department	24,246	6.9	1,711	5.41	-1.49
Referred to GP	144,735	41.19	11,395	36.01	-5.18
Referred to Other Healthcare Professional	4,598	1.31	665	2.1	0.79
No Planned Follow-up	47,464	13.51	4,820	15.23	1.72
Planned Follow-up at Accident and Emergency Department	40,881	11.63	2,611	8.25	-3.38
Patient Self Discharged without Clinical Consent	15,931	4.53	4,183	13.22	8.69
Died	626	0.18	13	0.04	-0.14
Total	351,411	100	31,642	100	

Table 54 Comparison of arrival modes for all NKHS and PWEH. Event level

Category	NKHS		PWEH		Difference
	Frequency	Per cent	Frequency	Per cent	
Ambulance	74,890	21.31	10,723	33.89	12.58
Private Motorised Vehicles (Car/ Lorry/ Van/ Motorbike/ Scooter/ Moped etc.)	222,707	63.38	16,701	52.78	-10.60
Public Transport (Bus/ Coach/ Train/ Taxi)	249	0.07	131	0.41	0.34
Walked	2,230	0.63	310	0.98	0.35
Police Car	1,203	0.34	1,105	3.49	3.15
Other	40,308	11.47	2,093	6.61	-4.86
Not Applicable (Planned Follow-up)	9,824	2.8	579	1.83	-0.97
Total	51,522	100	31,642	100	

Table 55 Comparison of triage category for all NKHS and PWEH. Event level

Category	NKHS		PWEH		Difference
	Frequency	Per cent	Frequency	Per cent	
Priority one - immediate	82	0.02	25	0.08	0.06
Priority two – very urgent	918	0.26	356	1.13	0.87
Priority three – urgent	2,502	0.71	1,145	3.62	2.91
Standard	4,334	1.23	737	2.33	1.10
Non-urgent	70	0.02	49	0.15	0.13
See and treat	343,505	97.75	29,330	92.69	-5.06
Total	351,411	100	31,642	100	

10.2.2 A&E tables - Comparison between homeless group and control

Table 56: Triage category of attendances to A&E by homelessness and control groups – per cent. Person level

Category	PWEH	Control	Total
Priority one - immediate and Priority two – very urgent	0.95	0.32	0.7
Priority three – urgent	3.22	0.88	2.3
Standard	2.1	1.75	1.96
See and treat and non-urgent	93.73	97.05	94.94
Total (n)	7,773	5,020	100

Table 57: Type of injury for attendances to A&E by homelessness and control groups – per cent. Person level

Category	PWEH	Control	Total
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Fall/slip/trip	4.54	4.06	4.35
Blunt force/blow from 3 person/animal/machine		1.83	2.54
Crushing injury	0.14	0.18	0.16
Stabbing / Cut with sharp object	0.19	0.32	0.24
Poisoning/Overdose	1.69	1.02	1.42
Burning/scalding	0.62	0.94	0.74
Other	56.86	53.43	55.51
Not Applicable – e.g., Non-Injury	16.02	17.77	16.71
Not Specified	16.94	20.46	18.32
Total (n)	7,770	5,020	100

10.2.3 A&E tables - Frequent attendance

Table 58: Age category of frequent attender group – per cent. Person level

Age category	Not frequent attender	Frequent attender
under 25	24.54	26.98
26-35	32.38	30.6
36-45	20.35	21.56
46-55	13.11	11.82
56-65	6.2	5.15
66 +	3.41	3.89
Total (n)	4,515	719

Table 59: Mean number of attendances and standard deviation for each category

	Mean	Standard Deviation
Triage Category		
Priority three – urgent Priority one - immediate and Priority two – very urgent	12.03125	15.21951
Standard	6.2749	9.031065
Non-urgent See and treat	5.129497	6.748641
Discharge Route		
Admitted to same Hospital within Local Health Board	5.952591	8.020173
Admitted to other Hospital within Local Health Board	5.806789	8.388115
Transferred to different Local Health Board	8.517241	12.17028
Referred to Outpatient Department	4.529491	6.226147
Referred to GP	4.769379	6.211344
Referred to Other Healthcare Professional	4.863971	7.263102
No Planned Follow-up	5.999014	8.655895
Planned Follow-up at Accident and Emergency Department	4.914716	6.152409
Patient Self Discharged without Clinical Consent	6.860649	8.672241
Died	2.8	2.097618
Arrival Mode		
Ambulance	7.526609	9.991972
Private Motorised Vehicles (Car/ Lorry/ Van/ Motorbike/ Scooter/ Moped etc.)	4.544635	5.983776
Public Transport (Bus/ Coach/ Train/ Taxi)	4.846154	5.151251
Walked	7.17094	9.390283
Police Car	7.969957	10.68127
Other	4.630702	5.102689
Not Applicable (Planned Follow-up)	6.671329	7.544745
Injury		
Fall/slip/trip	5.211849	7.059231
Blunt force/blow from person/animal/machine	4.6	5.569427
Crushing injury	3.7	2.430075
Stabbing / Cut with sharp object	3.677419	2.809355
Poisoning/Overdose	5.89011	7.483242
Burning/scalding	3.957895	2.338011
Other	5.125493	6.700495
Not Applicable – e.g., Non-Injury	5.623304	7.64693
Not Specified	6.017926	8.90694

10.2.4 A&E tables - Inferential statistics output

Table 60: Poisson regression

Number of attendances	IRR	std. err.	z	P>z	[95% conf.	interval]
Male (reference category: female)	1.217385	0.025678	9.33	0	1.168083	1.268767
Homeless service user	2.059329	0.03663	40.61	0	1.988773	2.132388
Age (reference category: under 26)						
26-35	0.899295	0.026238	-3.64	0	0.849313	0.952219
36-45	0.836196	0.027505	-5.44	0	0.783989	0.89188
46-55	1.136889	0.050249	2.9	0.004	1.042547	1.239768
56-65	0.744138	0.032252	-6.82	0	0.683536	0.810113
66-85	1.259859	0.062789	4.63	0	1.142614	1.389135
Arrival mode: Ambulance	1.137945	0.040774	3.61	0	1.06077	1.220734
Arrival mode: Personal vehicle	0.841077	0.02485	-5.86	0	0.793756	0.891219
Arrival mode: Police car	1.097133	0.099946	1.02	0.309	0.917735	1.3116
Self-discharge without consent	1.170195	0.044509	4.13	0	1.086131	1.260765
Triage group (reference category: See and Treat and non- urgent)						
Standard	1.271794	0.108311	2.82	0.005	1.076279	1.502827
Immediate, urgent, very urgent	1.905176	0.116205	10.57	0	1.690506	2.147105
Alcohol involved	1.108317	0.07546	1.51	0.131	0.969862	1.266539
_cons	3.086645	0.101436	34.3	0	2.894102	3.291998

10.3 Tables for Chapter 7

Table 61: Raw and clean data on age in police dataset

Raw data			Cleaned data	
Age category	Frequency	Per cent	Frequency	Per cent
18-25	2,474,747	26.9	567,264	17.46
26-35	2,085,396	22.67	859,107	26.44
36-45	1,759,933	19.13	709,887	21.85

46-55	1,379,752	15	571,802	17.6
56-65	737,720	8.02	298,081	9.17
66-85	501,072	5.45	216,616	6.67
Over 85	259,576	2.82	26,130	0.8
Total	9,198,196	100	3,248,887	100

Table 62: Raw and clean data on gender in police dataset

Raw data			Cleaned data	
Gender	Frequency	Per cent	Frequency	Per cent
Male	4,847,295	52.7	1,715,586	52.81
Female	4,112,185	44.71	1,533,301	47.19
Not specified	238,447	2.59	3,248,887	100
Missing	269	0	0	0
Total	9,198,196	100	3,248,887	100

Table 63 person known to homelessness service, data table for Figure 18

Top involvements

Top occurrence types	Other	Subject	Person reporting	Witness	Aggrieved	Charged	Total
Other	12,834	7,786	9,645	6,279	4,712	3,226	44,482
Per cent	28.85	17.50	21.68	14.12	10.59	7.25	100
Concern for safety	4,515	10,923	4,861	2,171	1,083	36	23,589
Per cent	19.14	46.31	20.61	9.2	4.59	0.15	100
Violence Against the Person	4,042	696	3,509	4,768	4,711	2,489	20,215
Per cent	20	3.44	17.36	23.59	23.3	12.31	100
Domestic Incident	1,293	5,407	3,428	1,520	1,437	42	13,127
Per cent	9.85	41.19	26.11	11.58	10.95	0.32	100
Theft	2,503	288	1,716	1,461	1,625	2,477	10,070
Per cent	24.86	2.86	17.04	14.51	16.14	24.6	100
Total	25,187	25,100	23,159	16,199	13,568	8,270	111,483
Per cent	22.59	22.51	20.77	14.53	12.17	7.42	100

Table 64 person not known to homelessness service, data table for Figure 18

Top involvements							
Top occurrence types	Other	Subject	Person reporting	Witnesses	Aggrieved	Charged	Total
Other	290,280	147,374	553,303	345,721	198,171	32,792	1,567,641
Per cent	18.52	9.4	35.3	22.05	12.64	2.09	100
Concern for Safety	72,109	155,823	162,680	68,304	21,360	331	480,607
Per cent	15	32.42	33.85	14.21	4.44	0.07	100
Violence Against the Person	96,784	15,641	89,019	140,397	101,627	31,562	475,030
Per cent	20.37	3.29	18.74	29.56	21.39	6.64	100
Domestic Incident	19,692	83,667	63,841	27,288	23,156	432	218,076
Per cent	9.03	38.37	29.27	12.51	10.62	0.2	100
Theft	40,452	5,182	131,060	107,702	92,894	18,760	396,050
Per cent	10.21	1.31	33.09	27.19	23.46	4.74	100
Total	519,317	407,687	999,903	689,412	437,208	83,877	3,137,404
Percent	16.55	12.99	31.87	21.97	13.94	2.67	100

