Journal of Professional & Applied Psychology *Original Article*

Acceptance and Commitment Therapy (ACT) for the Treatment of Antenatal Depression and Anxiety in Pakistan: A Feasibility Study

Rimsha Maqsood[1*], Uzma Ilyas[2], Cerith Waters[3]

Abstract

Untreated antenatal depression and anxiety is a major public health concern due to its detrimental effects for mother's during pregnancy as well as children's longer-term health outcomes. Antenatal depression and anxiety have a significant adverse impact on mothers' postnatal mental health, maternal caregiving, mother-infant relationship quality, and children's longer-term developmental outcomes. These findings highlight the need to address antenatal mental distress by employing contemporary therapeutic interventions. The objective of the present study was to assess the feasibility and preliminary effectiveness of a culturally adapted Acceptance and Commitment Therapy (ACT) intervention for women presenting with antenatal depression and anxiety in Pakistan. The current study used an uncontrolled pilot study design and a purposive sampling strategy. Pregnant women (N = 10) were recruited from five different Gynecology or Psychiatric hospitals in Pakistan. Women completed the Hospital Anxiety and Depression Scale (HADS), the Patient Health Questionnaire-9 (PHQ-9), and the Multidimensional Psychological Flexibility Inventory (MPFI) at pre and post treatment. Participant's pre and post intervention scores on these three questionnaires were compared using a Wilcoxon signed-rank test. The intervention completion rate was 70% (7 in 10). For the 3 women who dropped out of the study the reason was childbirth. At post-treatment, participants who completed the intervention showed significant improvements in depression and anxiety symptoms and increased psychological flexibility. Our findings indicate that ACT is a potentially feasible and effective treatment for antenatal depression and anxiety in Pakistan.

Keywords: Acceptance and Commitment Therapy, Antenatal Anxiety, Antenatal Depression, Antenatal Mental Health Difficulties

Received: 09 November 2024; Revised Received: 29 December 2024; Accepted: 30 December 2024

[1*]Lecturer, Department of Psychology, International Institute of Science, Arts and Technology, Gujranwala, Pakistan.
[2]Assistant Professor, Department of Psychology, Forman Christian College (A Chartered University), Lahore, Pakistan.
[3]Senior Lecturer, School of Psychology, Cardiff University, Cardiff, UK.

***Corresponding Author Email:**
rimshamaqsoodahmed@gmail.com

Introduction

With a total population of approximately 200 million, the crude birth rate in Pakistan is 28 births per 1000 women, with 6,474, 360 live births in 2023 (Paricio-del-Castillo, 2024). This indicates that every year in Pakistan a large number of women experience motherhood and are susceptible to mental health difficulties (Khan et al., 2021). However, despite the increasing rates of prenatal mental health disorders in Lower Middle Income Countries (LMICs), mental healthcare for mothers is not prioritized and there is a large treatment gap (76-85%) for maternal mental health problems (Atif et al., 2023).

Maternal mental health can be defined as "a state of well-being in which a mother realizes her own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to her community" (Atif et al., 2015). Maternal mental health is determined by biopsychosocial factors, availability of the antenatal care of mothers, lack of acceptance of maternal mental illness and high degree of socioeconomic deprivation (Williams et al., 2017). Maternal behaviors such as poor sleep schedule, and unhealthy dietary habits may contribute to distress. The biological determinants of poor maternal mental health are hormonal, metabolic, biochemical imbalances etc. Poor nutritional quality and dietary habits may be potential risk factors for maternal mental distress since certain dietary components may alter the biochemical pathways linked to mental health. Moreover, women's personal resources such as personality traits, and coping styles in response to stressors of this crucial period may enhance their susceptibility to develop mental health distress during pregnancy. Social factors that contribute to maternal distress include sociocultural context, demographic characteristics and poor social relationships. In LMICs, women are highly susceptible to maternal mental distress with different predictors of maternal mental illness involving skimmed resources (such as financial constraints, no house helps etc.) relationship turbulence, lack of physical intimacy, discord with in-laws, intimate partner violence in different forms (physical, emotional or psychological) and anxiety associated with anticipation of the sex of the baby in patriarchal Asian countries (Bhamani et al., 2022). The period of pregnancy is a universal experience and often implies challenges for women and their abilities to function as it disturbs their existing lifestyles and routines (Erfina et al., 2019; Nomaguchi & Milkie, 2020). This transitional phase starting from the conception and lasting even the after birth brings along challenges as women experience different biological, mental, and emotional challenges changes as well as the social expectations and adjustments with their role as a mother. (Insan et al., 2022). Women in low- and middle-income countries (LMICs) experience higher percentages (1-37%) of psychopathological challenges and mental disorders with the mean prevalence of 15.6% during pregnancy only (Tamiru et al., 2022). The most commonly experienced challenges during antenatal period include mood disturbances, eating disorders, poor self-care, loss of pleasure in activities, sadness, anxiety and depression etc. (Waqas et al., 2020). Other challenges include fatigue, hypertension, leading to extremely grave consequences for mothers such self-harm and suicide during intense periods of mood disturbances (Kimmel, 2020). Suicide is also highlighted as one of the major causes of deaths (5-20%) in high-income/ developed countries (Howard & Khalifeh, 2020; Palladino et al., 2020). Pregnant women also experience preoccupations, intrusive thoughts, obsessions, ruminative thinking etc. leading to significant negative outcomes such as impaired coping, fear of childbirth, poor maternal-fetal attachment, obstetric complications (Chandra & Lotlikar, 2023). Depression and anxiety come out as the most pertinent and prevalent maternal mental health difficulties during the peripartum period (Cai et al., 2022; Urizar & Muñoz, 2021). "Antenatal anxiety is defined as excessive worries, concerns, and fears about pregnancy, childbirth and infant health, as well future parenting roles" Some common features of antenatal anxiety are worry, rumination, avoidant behaviors etc. "Antenatal Depression is characterized by symptoms such as irritable and depressive moods, lack of pleasure and interest, low self-

esteem, loss of interest, low concentration, feelings of worthlessness, poor appetite, and fatigue" (Bedaso et al., 2021). It is worth mentioning that anxiety and depression are frequently comorbid; research suggests that one woman in every 10 pregnant females experience mixed symptoms of anxiety and depression (Cena et al., 2021).

The management of psychiatric disorders during peripartum primarily focuses on psychotherapy along with pharmacology. However, due to extensive literature on the potential harm associated with psychotropic medications (Green et al., 2015), psychotherapeutic interventions are highly preferred by both the therapists and clients. Furthermore, despite an increase in the number of researches on psychopharmacological treatments in pregnancy in the past 10 years, there are still no definitive answers or guidelines regarding the important and complex decisions around the treatment for maternal mental health (Galbally et al., 2018). Therefore, evidence based therapeutic interventions for the treatment of antenatal difficulties requires further attention and expansion (Howard et al., 2014). Previously the effectiveness of Cognitive Behavioral Therapy (CBT) and Interpersonal Psychotherapy (IPT) for the treatment of antenatal depression and anxiety has been examined (Waters et al., 2017). However, these interventions are not without their limitations including a lack of culturally sensitive treatment modules, a significant number of treatment non-responders, and high rates of treatment non-completers. This warrants the implementation and evaluation of new psychotherapeutic interventions during the perinatal period.

In the last decade, ACT has emerged as a potential effective treatment for maternal mental difficulties particularly for mood and anxiety disorders. ACT is process based, third-wave therapeutic intervention which emphasizes on the process of accepting the internal events such as thoughts, emotions etc. without attempting change them. ACT defines mental health as "an ability to experience thoughts, sensations and emotions fully and consciously as they are while utilizing individuals' personal set of values to set meaningful goals and take actions which can foster their psychological flexibility" (Hayes et al., 2012). Psychological flexibility, the central component of ACT is characterized by "the ability to respond to internal and external stimuli/events in ways which are consistent with values". Psychological flexibility is comprised of six core processes; acceptance, mindfulness (present moment awareness/attention), cognitive defusion, self-as-context, values, and committed action. These core processes are interconnected and from an overall perspective, every process supports others to ensure psychological flexibility. ACT has grabbed attention as an appropriate treatment for meeting the needs and demands of women presenting perinatal anxiety or mood problems.

ACT is a transdiagnostic approach which utilizes its six core principles to help women in perinatal period to have a meaningful experience. The process of acceptance enables them to be able to acknowledge their experience without attempts to avoid dysfunctional thoughts, cognitive defusion facilitates them to effectively manage their intrusive thoughts, preoccupations and mindfulness or present moment awareness allows them to be present with awareness of their internal events. ACT also emphasizes on the identification of the values for women to be able segregate what is truly important to them and encourage them to perform behaviors consistent with their personal values instead of being under the pressures of societal expectations surrounding maternal mental health and distress. Through values and committed action, they establish flexible and smart goals and take values driven

actions to alleviate behavioral symptoms accompanying anxiety and depression (Bonacquisti et al., 2017). Large number of studies reviewed and summarized in systematic reviews and meta-analyses certify effectiveness of ACT for various mental health disorders such as anxiety, depression etc. (Gloster et al., 2020; Graham et al., 2016; Haller et al., 2021; Öst, 2014). These strengths put forward ACT as a potentially effective treatment for antenatal women. For this purpose, this study attempts to evaluate feasibility of third wave therapy ACT for mental health difficulties during antenatal period.

Rationale of the Study

Antenatal anxiety and depression are among the most commonly reported maternal mental health correlates. There is a high prevalence of prenatal anxiety and depressive symptoms affecting women in low/middle- income countries (LMICs). In Pakistan, during pregnancy the prevalence of anxiety is recorded as 49% and the prevalence of perinatal depression is suggested to be 37% during the antenatal period (Khan et al., 2021). Irrespective of the higher prevalence of the disorders, there is a large treatment gap for mental health (76%– 85%) (Atif et al., 2023). Therefore, there is a dire need urgent need to address prenatal anxiety in order for early prevention and management to minimize adverse effects on mother and child. However, despite the increasing prevalence and negative effects of these problems during pregnancy treatment of antenatal mental difficulties has received limited attention. Furthermore, a lack of literature on evidence-based therapeutic techniques on indigenous population and the shortcomings/ limitations of the existing interventions create gap to establish and assess latest therapeutic interventions such as ACT to alleviate antenatal mental health problems such as anxiety and depression.

Objectives of the Study

The main objective of the current study was to assess the feasibility and preliminary effectiveness of a culturally adapted version of an Acceptance and Commitment Therapy intervention for Perinatal Mental Health (ACT-for-PNMH) delivered to pregnant women in Pakistan.

Method

Research Design and Sampling

An uncontrolled pilot study design was used to assess the pre-liminary effectiveness of a culturally adapted Acceptance and Commitment Therapy intervention for pregnant women presenting with antenatal depression and anxiety in Pakistan. A purposive sampling method was used to recruit pregnant women with clinically significant depressive and anxiety symptoms from Gynecological and Psychiatric departments from five different hospitals in Lahore, Pakistan.

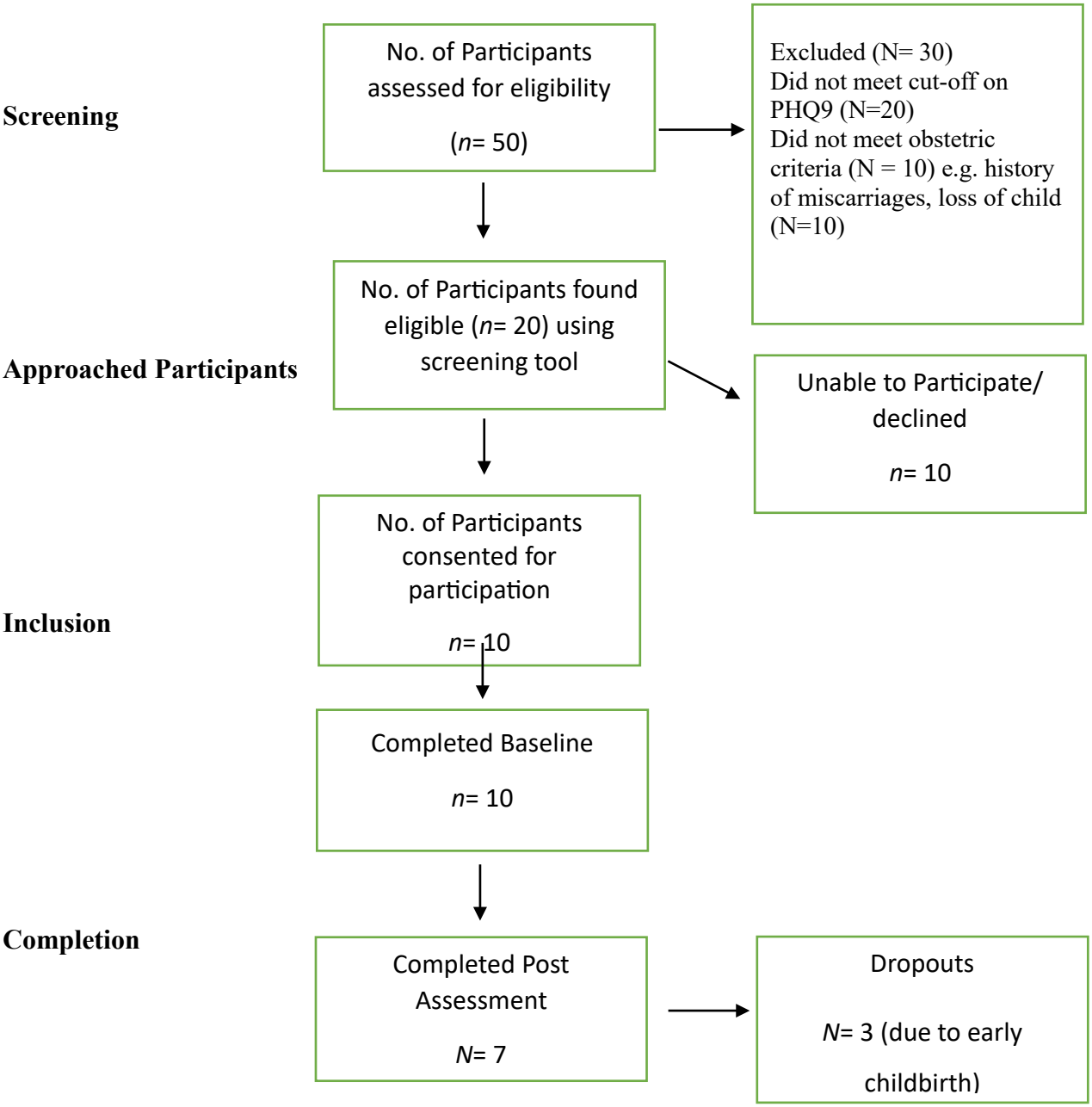
Participants

Women were screened for participation in the study based on the inclusion and exclusion criteria. Inclusion criteria were: women with intermediate level of education, age 20-35 years, first-time pregnant (primigravida), or multigravida with no history of antenatal anxiety and/or depression, and scores meeting the clinical cut-off on the PHQ-9 (a score of ≥9: Maselko et al., 2020). If women were prescribed psychotropic medication, then the dose was required to be stable for 2 months prior to the intervention starting. The exclusion criteria were: pre-existing psychological disorders other than anxiety and depression, current engagement in another psychological therapy, presence of psychosis, a learning disability, a history of conception difficulties or fetal loss, conception through artificial reproductive technology (e.g. invitro fertilization: IVF), and women experiencing severe physiological complications and/or maternal

morbidity indicators that require inpatient management.

Figure 1

The CONSORT Diagram provides the Flow of the Recruitment and Participation of Participants



Measures

Feasibility Outcomes

Feasibility outcomes included the number (%) of women eligible for the study, the number (%) who agreed to participate, and the number of women who completed the intervention. Reasons for dropping out of the

intervention were recorded as well as the average number of sessions attended. Fidelity to the ACT intervention was assessed using the Acceptance and Commitment Therapy—Feasibility Measure (ACT-FM: O'Neill et al., 2019). The therapist completed a session adherence checklist following each session.

Mental Health Outcomes

Depression and Anxiety was assessed using the Urdu versions of the Hospital Anxiety and Depression Scale (HADS: Lodhi et al., 2020), and the Patient Health Questionnaire-PHQ9 (Kroenke et al., 2001). The PHQ9 was used to screen for eligibility for the study and the HADS was used as the primary outcome measure for depression and anxiety. The Urdu versions of the PHQ-9 and HADS are well validated, reliable and widely used in healthcare settings (Ahmad et al., 2018; Lodhi et al., 2020; Mumford et al., 1991). Participants completed an Urdu translated version of the 'Multidimensional Personality Flexibility Inventory (MPFI)' to assess levels of psychological flexibility and inflexibility (Rolffs et al., 2016).

Therapeutic Intervention

An ACT based intervention manual developed by Waters et al. (2020) specifically for perinatal mental health conditions (ACT-for-PNMH) was translated and culturally adapted using the Bernal Framework (Bernal et al,.1995) for the Urdu speaking population in Pakistan. The ACT-for-PNMH intervention aimed to increase psychological flexibility through the practice of techniques and exercises that mapped onto the six ACT processes (acceptance, contact with the present moment, self as context, cognitive fusion, valued living, and committed action). The intervention included ACT techniques that were adapted for the perinatal period (e.g., cognitive defusion exercises that focused on the physical and psychological distress associated with pregnancy/childbirth). The ACT-for-PNMH manual included a module on self-compassion (Waters et al., 2020). Experiential methods (e.g., guided imagery, mindfulness practice) and the use of ACT metaphors facilitated learning.

Participants attended eight ACT-for-PNMH intervention sessions (excluding 2 sessions for pre and post treatment assessments) that were delivered twice a week over a one-month period. Each session was approximately 45 minutes in duration and was delivered to each participant on an individual basis. If the women were not able to attend in person sessions, the sessions were provided via video conferencing through the Zoom or Whatsapp platforms. Participants were provided with intervention materials (e.g. handouts, worksheets and audio recordings of mindfulness and cognitive fusion exercises) during each session to facilitate learning and homework practice between sessions. Homework exercises were reviewed at the beginning of each session and the benefits and barriers of completing ACT-for-PNMH skills practice was explored with the participants. The therapist was required to complete a 'session adherence checklist' after each session to ensure that the concepts and content for each session were covered. The therapist received supervision twice a week throughout the process of delivering the intervention provided by a Clinical Psychologist trained in ACT. The ACT fidelity measure (ACT-FM) was used during supervision to assess and enhance the therapist's adherence and fidelity to the ACT model. The supervisor formally rated all intervention sessions for one participant, and randomly selected sessions for other participants (N = 2) through recordings and post-session feedback. The recordings were obtained only from the participants who consented (N = 3).

Procedure

Public and private sector Gynecological and Psychiatric hospitals were approached regarding the recruitment of participants.

Written permissions were sought from the relevant authorities and departments of the hospitals before recruitment began. Consent and authorization was obtained from the original developers of the ACT-for-PNMH intervention and the psychometric questionnaires used in the current study. Clinicians working in the hospitals identified and referred participants to the study. A pre-intervention screening assessment that included the completion of the PHQ-9 was conducted by a researcher with prospective participants. Participants who met the inclusion criteria were invited to participate in the current study and informed consent was obtained during the pre-intervention assessment session. Participants were provided with information about the study including the aims of the intervention and the requirements of the pilot study. The participants completed all of the psychometric questionnaires at the pre-intervention baseline assessment and again at a post-intervention assessment session.

Ethical Guidelines

Ethical guidelines were followed throughout the process of this study. The participants were debriefed about the therapeutic intervention and informed consent was sought from them. They were educated regarding their right such as right to withdraw without any consequences, confidentiality and privacy and anonymity of the data etc.

Statistical Analysis

SPSS (Statistical Package for Social Science) version 26 was used to analyze the data. Descriptive statistics summarize participant demographics and feasibility outcomes. Wilcoxon signed-rank tests are used to compare participants pre and post intervention scores on the HADS, PHQ9 and MPFI. Statistical reliable and clinically significant change analyses were conducted according to the Jacobson and Traux (1984) guidance (Blampied, 2022; Jacobson & Truax, 1991).

Results

Sample Characteristics

Sample characteristics are presented in Table 1. Participants were on average 25.8 years of age, married, unemployed, and from a middle-class background. All of the participants were in the 3rd trimester of pregnancy and 50% were first-time mothers (primigravida). All participants (N = 10) scored in the clinical range for depression and anxiety at the baseline assessment. The sample baseline total score means = 21, SD = 5.9, HADS depression total mean = 10, SD = 2.45, HADS anxiety total mean = 9, SD = 3.63 All participants reported an exacerbation in anxiety and depressive symptoms from the first trimester to the third trimester. None of the participants were prescribed a psychotropic medication at the pre-intervention assessment or during the course of the ACT-for-PNMH intervention.

Feasibility Outcomes

Recruitment, Retention and Intervention Completion

Figure 1 depicts the CONSORT diagram. Eligibility assessments were conducted with a total number of N=50 participants, with N=30 assessed as not meeting the inclusion criteria and N=20 assessed as meeting the inclusion criteria. Of the N = 20 eligible participants, N=10 (50%) consented to take part in the intervention study and completed the baseline assessment. Of the 10 women who began the intervention, N= 3(30%) dropped out due to childbirth, while N = 7 (70%) completed the intervention and the post-treatment assessment. For the N = 7 women who completed the intervention, the average number of sessions attended was 7.7, median = 8. Reasons for missed sessions included other commitments i.e. emergency doctors' appointment. For the N = 3 women who gave birth and did not complete the intervention, the average number of sessions attended prior to childbirth was 3.3, median = 3.

Fidelity and Adherence

In order to monitor the therapist's fidelity to the ACT intervention, a random sample of intervention sessions were rated on the ACT-FM by the clinical supervisor. Overall, the therapist was rated as ACT consistent on all of the subscales; therapist stance, open response style, aware response style and engaged response style. Analysis of the session adherence checklists revealed that there were no deviations from the checklist for sessions that were observed and rated during the course of the study.

Data Analysis

Descriptive statistics were performed and paired sample t-test was carried out to obtain baseline demographics and compare the means of the scores of the participants at baseline and post assessment to evaluate the therapeutic intervention.

Table 1

Baseline Demographics of all Participants (N=10)

Characteristics	*F*	(%)	Characteristics	*F*	(%)
Age *M(SD)*	25.8 (2.5)		Relations with In-laws		
Level of education			Satisfactory	6	60
Intermediate	5	50	Good	4	40
Bachelors	3	30	Family System		
Masters	2	20	Joint	4	40
Job			Nuclear	6	60
Unemployed	7	70	First Pregnancy		
On Break	3	30	Yes	5	50
Socioeconomic status			No	5	
Middle	8	80	Trimester of Pregnancy		
Lower	2	50	Third	10	100
Years of Marriage			In Vitro Fertilization		
≤1	5	50	No	10	100
2 years	1	10	Physiological problems (in relevance to pregnancy)		
4 Years	1	10	No	10	100
5 Years	3	30	History of psychiatric illness		
Relationship with Husband			No	10	100
Non-satisfactory	1	10	Child's Disability		
Satisfactory	5	50	No	10	100
Good	4	40			

The Table 1 indicates the demographic characteristics of the participants.

Table 2

Participants Preliminary Effectiveness of the Impact of ACT-for-PNMH on Depression, Anxiety and Psychological Flexibility (N=7)

Variable	Baseline Md	Post Md	Md Diff	z	*p*
Depression (PHQ-9)	15	9	-6	-2.41	.016
HADS total	21	11	-10	-2.37	.018
Depression (HADS)	10	6	-4	-2.36	0.18
Anxiety (HADS)	9	5	-4	-2.39	.017
Psychological Flexibility	98	124	26	-2.36	.018
Psychological Inflexibility	104	73	-31	-2.37	.018

Note: N = number of paired observations. Md=median, z = z score. p = p value

Table 2 presents the descriptive and inferential statistics. At post-treatment, participants reported significantly decreased symptoms of anxiety and depression. Similarly, at post-treatment participants reported significant increases in psychological flexibility and decreased psychological inflexibility.

Table 3

Reliable and Clinically Significant Change Analyses for Depression and Anxiety (HADS) (N=7)

HADS Scale	Client Change	*N*	%
Depression	Recovered	3	42.9
	Improved	4	57.1
Anxiety	Recovered	4	57.1
	Improved	3	42.9

Note. HADS = Hospital Anxiety and Depression Scale

The Table 3 presents the number and percentage of the recovered and improved patients.

Discussion

The study highlights ACT as a potentially effective treatment for antenatal anxiety and depressive symptoms. The findings indicated that culturally adapted ACT based therapeutic intervention is feasible and effective in dealing with antenatal mental health difficulties as indicated by the improvement in the women's symptoms. Cultural factors play a significant role in the understanding and manifestations of the mental disorders. Different sociocultural groups express their mental health concerns based on their understanding of the particular physiological phenomena (ethnopsychology) or the social norms and structures (Hofmann & Hinton, 2014). Therefore, culturally sensitive adaptation of therapeutic interventions aimed at addressing contextual disparities between the initial design and the final setting in which it is implemented is crucial (Lundgren et al.,2011). The adapted

therapeutic interventions which are compatible with the particular population's sociocultural values and beliefs incorporate the cultural sensitive elements according to cultural context leading to enhanced effectiveness of the treatment module (Naeem et al., 2019).

Women during the antenatal period experience mixed symptoms of anxiety and depression such as intrusive thoughts, frustrations, reduced self-care, disappointment, self-judgments and negative emotions such as shame and guilt (Bonacquisti et al., 2017). The therapeutic manual of ACT utilizes its core processes (acceptance, present moment awareness, thought defusion etc.) and evidence-based techniques to provide an effective module for the management of symptoms and features of anxiety and depression within the unique context and needs of the antenatal period (Bonacquisti et al., 2017; Waters et al., 2020). The findings of the research are complementing the studies which determined the efficacy of ACT as an effective therapeutic treatment for disorders such as mood and anxiety disorders outside the antenatal period (A-Tjak et al., 2014; Hayes et al., 2011). The results of the study are also in line with the limited number of studies exploring the impact of ACT on maternal mental health and found it effective and beneficial for improving psychological well-being (Gloster et al., 2020; Hosseinian et al., 2021; Howard et al., 2022). In the light of this, the findings of the study indicate perinatal mental health professionals can use ACT-PNMH and other ACT based programs for treatment of common mental health disorders during peripartum in antenatal care settings. Acceptance and Commitment therapy is a process-based approach which focuses and addresses complex biopsychosocial factors contributing to mental health difficulties and emphasizes the contextualization and cultural acceptability of its principles (Hayes & Hofmann, 2017).

The findings of the current study indicate increased levels of psychological flexibility among participants leading to improved symptoms of anxiety and depression during pregnancy. Previous research has shown that while suffering and challenges are unavoidable, processes such as psychological flexibility can facilitate the management and coping of these different psychological challenges (Zhang et al., 2018). Psychological flexibility is the core principle of the ACT model and is defined "as the willingness to accept private thoughts, emotions, or sensations in the present moment without having to escape or avoid them, and the ability to adapt behavior as necessary to persist in values-based action" (García-Torres et al., 2022). ACT relies on changing the patient's relationship with their thoughts, without attempting to modify them completely to enhance psychological flexibility. Furthermore, reduction in the means of psychological inflexibility in the study leading to an alleviation of distress and dysfunction is also congruent with the results of the previously conducted feasibility and intervention studies to evaluate the effectiveness of ACT for perinatal women (Aghili et al., 2023). Research on psychological inflexibility indicates that that ACT reduces the rigid and inflexible responses to the stimuli by reducing the fusion and avoidance of thoughts, emotions and internal experiences that are uncomfortable (Daks et al., 2020). The analysis of the mediation of ACT treatment in anxiety and depression has also highlighted reduction in psychological inflexibility (Waters et al., 2017). The findings put forward new culturally relevant therapeutic approach for dealing with maternal mental health disorders to be implemented during antenatal care for early intervention and prevention of problems as

well as reduced occurrences of psychological difficulties during peripartum period such as postpartum depression, PTSD, psychosis etc. The intervention could improve the access to mental health services during routine antenatal visits or in community settings through training and implementation of culturally sensitive ACT techniques by healthcare workers and mental health professionals.

Limitations and Recommendations

The study presents one of the first attempts to evaluate the preliminary effectiveness and acceptability of an ACT intervention for women presenting with antenatal depression and anxiety in Pakistan. These positive findings need to be considered alongside the limitations of the study. The present study had a small sample size as it was a feasibility study and there was no control group. Due to the participants' unavailability in the months following childbirth, longer-term follow-up assessments of the impact of the intervention could not be conducted. Therefore, future research should utilize a controlled study design (e.g. a randomized control trial) with multiple follow-ups to capture the longer-term efficacy of the ACT-for-PNMH intervention in Pakistan. An individual mode of delivering therapeutic sessions was employed for reasons including challenges with travel, family commitments, and appointment clashes as women had multiple demands on their time. Future studies of the ACT-for-PNMH intervention in Pakistan could use a group mode of delivery in line with other studies of ACT in perinatal populations (Waters et al., 2020). The feasibility and efficacy of ACT for the treatment of perinatal depression and anxiety, particularly during the postnatal period, for women in Pakistan and LMICs more broadly is a promising area for future research.

Ethics Statement

All the ethical standards of APA were met. Informed consent was taken in written form from all the respondents to participate in this study.

Contribution of Authors

Rimsha Maqsood: Conceptualization, Investigation, Methodology, Data Curation, Formal Analysis, Writing – Original Draft

Uzma Ilyas: Methodology, Writing - Reviewing & Editing, Supervision

Cerith Waters: Methodology, Writing - Reviewing & Editing

Conflict of Interest

There is no conflict of interest declared by the authors.

Source of Funding

The authors declared no source of funding.

Data Availability Statement

The datasets of the current study are not available publicly due to ethical reasons but are available from the corresponding author [R.M.] upon the reasonable request.

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