

Responsibility beliefs, guilt, and self-esteem in postpartum psychosis

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Lay Summary

Systematic Review

Postpartum psychosis (PPP) is a severe mental health difficulty which begins suddenly in the weeks following childbirth. An experience of psychosis involves a loss of contact with reality. Features of postpartum psychosis include hallucinations (sensory experiences not considered to be based in reality), delusions (beliefs that are not considered to be based in reality), mood swings, and confusion. The mental health and well-being of the woman can get worse very quickly and postpartum psychosis should always be treated as a medical emergency. Usually, women are treated with medication and taken to the hospital for inpatient psychiatric care. This should be to a mother-and-baby unit (MBU), a specialist service where the mother and baby can remain together. Recovery can be a long and challenging journey and women have said that they experience difficulties with their mental health long after they leave the hospital.

At present, we have limited knowledge about the types of psychological interventions that are effective for postpartum psychosis. It is therefore important to develop a better understanding of how to support women along their recovery journey. To do this we wanted to conduct what is known as a systematic review, a method of gathering and summarising relevant research from online databases containing articles written by researchers from psychology and psychiatry backgrounds. We used articles that referred to recovery and whose participants included women with postpartum psychosis. The review aimed to use these articles to identify specific factors which were considered helpful for recovery.

In total, we found 14 relevant articles. Through carefully examining the data in these articles we identified the following factors as supportive of recovery:

- Recovery is a lengthy process – accepting this was important so that women did not put undue pressure on themselves and so that setbacks were considered a normal part of recovery.
- Specialist inpatient support in Mother and Baby Units– women felt their needs as new mothers and their mental health needs were best met in specialist services.
- Community support after leaving the hospital – women reported needing home-based related to caring responsibilities and ongoing input from professionals for emotional support and to provide information relevant to their ever-changing circumstances.
- Practical strategies – women identified different strategies including noticing the positives, creating timelines to help with remembering the events to better understand their experiences and re-establishing a sense of identity as helpful for recovery.
- Remaining with the infant – bonding and relationship building promoted recovery and motivated women. They also said distress was reduced when they were with the baby.
- Supportive relationships – partners and personal connections served an integral role in the recovery journey, women needed emotional and practical support from those in their network.

From the review, it was evident that women require specific support following PPP to aid in their recovery. There is potential usefulness in considering these in guidance and policy related to specialist care provision as well as in the design and implementation of interventions. In addition, PPP can be a frightening time not only for women but for their families. As partners and the family network are integral to women’s recovery, more thought needs to be given to the mental wellness of the entire family unit.

Lay Summary

Empirical Study

Postpartum psychosis (PPP) can have a significant impact on the lives of those it impacts. It is considered a relatively short illness, with many of the most severe features such as hallucinations and delusions subsiding within about twelve weeks. Despite this, we know that women who have had PPP are more likely to experience further mental health difficulties and are also more likely to have PPP again following future childbirth. It is therefore important that we develop a better understanding of characteristics that might be unique to women who experience PPP.

Using what we know about psychosis more generally can help us to make some guesses or hypotheses about what might be happening in PPP. One way that we can understand the distress in psychosis is by considering how people make sense of the unusual experiences they have. For example, if an individual experiences a delusion (an unusual thought that is not based in reality) as personally meaningful or a sign of threat then they are more likely to experience greater distress. This distress can then impact their behaviours. This is known as the cognitive model of psychosis. These ways of thinking have been linked to psychosis both in the presence and absence of acute features such as delusions and hallucinations.

Drawing on this way of understanding psychosis, in the present study we wanted to explore whether women with PPP tended to adopt particular ways of thinking or have particular emotional experiences. We set out to explore responsibility beliefs, self-esteem, and guilt in women after the severe features of psychosis had passed. These three factors were chosen as they have been linked to both psychosis and motherhood in previous research. We also wanted to understand whether these factors affected overall well-being.

We recruited 67 women who had given birth in the previous two years. Twenty of these women had an experience of PPP during this time, 26 women had an experience of postnatal depression (PND) and 21 did not experience a postpartum mental illness. We wanted to compare women with PPP to these two other groups so that we could determine whether the thinking styles and emotional experiences were specific to PPP. All women completed an online survey which included questions about responsibility, guilt, self-esteem, and well-being as well as some questions about their experiences of mental health and childbirth.

We analysed their responses and found that women who had PPP and PND had higher responsibility beliefs, greater feelings of guilt and poorer self-esteem compared to women who did not have postpartum mental health difficulties. There were no differences between women with PPP and women with PND on any of the three factors. Therefore, we cannot say that these ways of thinking and feeling are specific to PPP. We also found that higher responsibility beliefs, greater guilt and lower self-esteem were linked to poorer overall wellbeing. It was apparent that these links to wellbeing were independent of whether a woman had PPP, PND or no postpartum mental health difficulty.

The results of this study need to be considered with caution as the number of women who participated in the study was small. Small numbers of participants can make it more difficult to find differences between groups. Although responsibility beliefs, guilt and self-esteem were not specific to women with PPP, we can consider their role in postpartum mental health more broadly. We also found that well-being was significantly poorer in women with PPP, even though the psychosis had passed. This is similar to previous research which has found that women with PPP experience difficulties for quite some time after features of psychosis pass. More research is needed to better understand thinking patterns and emotional

experiences that may be linked to PPP so that support and intervention can be better tailored to women experiencing these difficulties.

Women's perspectives of factors promoting recovery following an episode of postpartum psychosis: a systematic review

Abstract

Objective: Postpartum psychosis occurs in approximately 1-2 in 1000 births and is characterised by severe fluctuations in mood, marked behavioural disturbances, delusions, and hallucinations. Clinical recovery is typically considered when these symptoms have remitted, and the acute phase of the illness is relatively short in duration. However, qualitative reports from women suggest that difficulties exist beyond the acute phase of illness. This review aimed to assess evidence exploring recovery from postpartum psychosis and identify factors promoting recovery.

Methods: A systematic search of four online databases (Pubmed, Web of Science, APA PsychInfo and CINAHL) was conducted. Qualitative and quantitative studies with women who had postpartum psychosis and examined aspects of recovery were included in the review. A total of fourteen studies were selected for inclusion and methodological quality was assessed. A narrative synthesis was used to summarise and explain the findings.

Results: The review indicated that recovery is a unique process. The single quantitative study included revealed a positive outlook in terms of functional recovery, however, experiences of depression and anxiety extend beyond the remission of acute illness. Qualitative reports identified recovery as an ongoing process which is promoted by specialist inpatient and community care, strategies specific to PPP (including acknowledging positives, creating timelines and rebuilding identity), maintaining the union of mother and infant and nurturing family and peer relationships.

Conclusion: Recovery from PPP requires specialist and tailored support that extends beyond the acute period of illness. Women do not always receive the specialist care that is indicated in the clinical guidelines which may impact their recovery. There is evidence for the need to explore the efficacy of PPP-specific interventions and to extend care and support to partners and families. The review encompasses only Western ideas of recovery and so future research would benefit from exploring research in more diverse populations.

Introduction

Severe Postpartum Psychiatric Disorders

Severe postpartum psychiatric disorders are an important clinical and public health concern. Postpartum psychiatric disorders can include postpartum depression, anxiety disorders, post-traumatic stress disorder (PTSD; often owing to traumatic childbirth experiences but not always) and postpartum psychosis (PPP). The postpartum period is a time of particularly high risk for first-onset episodes or the exacerbation of existing psychiatric disorders, particularly in the three first three months following childbirth (Munk-Olsen et al., 2006; Meltzer-Brody et al., 2018). A history of adverse life events, poverty, limited access to healthcare and inadequate social support have been found to increase this risk (Guintivano et al., 2017; Perry et al., 2016). Untreated postpartum mental illnesses can have significant adverse consequences for both mother and infant. Suicidal ideation is common amongst women with postpartum mood disorders (Pope et al., 2013) and maternal suicide has been found as a leading cause of maternal mortality in the postpartum period (Johannsen et al., 2016). Women experiencing postpartum mental illness also report poorer quality of life and greater difficulties in both social and romantic relationships (Slomian et al., 2019; Engqvist & Nilsson, 2011). Furthermore, there are implications for mother-infant bonding and attachment which can impact the social, emotional, and behavioural development of the infant (Le Bas et al., 2020). Disruptions in the early relationship building can be due to both symptomatology as well as possible separation if inpatient care is required and cannot be facilitated in a mother and baby unit (MBU). A seminal population-based study in the UK found the risk of psychiatric admission for a psychotic or mood disorder to be 22 times greater in the first month following childbirth compared to before pregnancy (Kendell et al., 1987). More recently, similar findings of increased risk of hospitalisation in the early postpartum period have been reported with the most common diagnosis requiring admission being postpartum

psychosis (Martin et al., 2015). PPP is typically considered the most severe postpartum mental illness.

Postpartum Psychosis

Postpartum psychosis affects approximately 1 to 2 per 1000 women following childbirth (Vanderkruik et al., 2017; Jones et al., 2009) and is always considered a psychiatric emergency. While the term postpartum psychosis is widely used its classification is disputed. In the fifth edition of the Diagnostic and Statistical Manual (DSM-V; American Psychiatric Association, 2013), PPP is considered a brief psychotic disorder with the specifier of postpartum onset occurring within four weeks of delivery. As it is not considered a distinct clinical entity there is some debate that childbirth is merely a trigger for pre-existing vulnerability to psychosis (McGrath et al., 2013). This is supported by a large body of literature which shows a strong relationship between PPP and bipolar disorder, with figures suggesting approximately one in five women with bipolar disorder experience a postpartum episode of psychosis or mania (Wesseloo et al., 2016). However, there is evidence to support the contrary as a pre-existing psychiatric illness is not apparent in all cases with studies showing that more than 40% of women affected by PPP have had no prior mental health diagnoses (Gilden et al., 2020; Langan-Martin et al., 2016).

Despite the lack of consensus regarding the classification of PPP, the description of clinical characteristics is consistent across the literature. PPP is characterised by lability of mood, marked behavioural disturbances, insomnia, confusion, and perplexity (Perry et al., 2020; Meltzer-Brody et al., 21 Monzon et al., 2014). Symptomatology also includes the core feature of psychosis, delusions, and hallucinations. Delusional ideation is typically related to the infant which can lead to protective behaviours or in some cases increases the risk of

avoidance of the infant, neglect, or abuse (Chandra et al., 2006). There is evidence to suggest that visual hallucinations are reported more frequently in postpartum psychosis than episodes of psychosis or mania unrelated to childbirth (Ganjekar, Desai & Chandra, 2013). Women with PPP are also at greater risk of self-harm and suicide. In recent years, suicide related to postpartum mood disorders has been identified as a leading cause of maternal mortality (Knight et al., 2021; Johannsen et al., 2016). Johannsen and colleagues (2016) reported that those with a severe psychiatric diagnosis in the postpartum period had significantly increased mortality rates when compared with mothers without psychiatric diagnoses and mothers with mood disorders that had an onset outside of the postpartum period. Symptom onset in PPP is typically sudden and deteriorating in mental state is rapid usually necessitating inpatient care (Heron et al., 2008)

Clinical Guidance & Interventions

The National Institute for Health and Care Excellence (NICE, 2014) recommends an immediate referral to secondary mental health services for assessment if a woman presents with a sudden onset of symptoms indicative of PPP. It is advised that this assessment takes place in a specialist perinatal mental health service within four hours of referral where possible (NICE, 2014). For women who require inpatient care, this should be offered in a mother and baby unit (NICE, 2014). Mother and baby units (MBU) allow for inpatient psychiatric care where mother and infant can remain together to promote and protect bonding and attachment relationships (Howard, 2000). Joint admission also allows for ongoing risk assessment as well as the provision of practical support and guidance with caregiving responsibilities. Qualitative research has highlighted the value of MBUs as women with PPP have reported that separation from the infant is detrimental to recovery (Glover et al., 2014; Doucet et al., 2012). In a national study across 42 health service providers in England and

Wales, service satisfaction was significantly higher for women who received treatment in MBUs compared to those treated in general psychiatry units and at home by crisis resolution teams (Howard et al., 2022). This is in line with qualitative studies reporting significant levels of anger and frustration experienced by women who are admitted to general units as they strongly feel non-specialist services cannot meet their needs as new mothers (Robertson & Lyons, 2003).

Intervention recommendations include offering antipsychotic medication in the first instance (NICE, 2014). In a systematic review by Doucet and colleagues (2011) seventeen studies exploring the treatment of PPP were identified, all of which examined either ECT or pharmacological interventions. Many of the studies included in the review were single-patient case reports with the remaining having small sample sizes of less than ten (Doucet et al., 2011). One retrospective study with 114 women found those with postpartum psychosis to have greater improvements following ECT when compared to a group with psychosis not related to the postpartum period (Reed et al, 1999). The review also found beneficial outcomes in pharmacological studies utilising lithium (Lichtenberg et al. 1988; Silbermann et al. 1975; Targum et al. 1979). More recently, a cohort study of 64 women found lithium to be highly efficacious for treatment during the acute phase of PPP when administered in a specific sequential regimen alongside short-term benzodiazepines and antipsychotics (Bergink et al. 2015).

In terms of psychological intervention for postpartum psychosis, the guidance recommends using the interventions outlined in the recommendations for psychosis and schizophrenia in adults, which includes cognitive behavioural therapy and family intervention (NICE, 2014). There is no evidence to date exploring the effectiveness of psychological interventions in PPP

populations specifically. There is no evidence to date examining psychological processes involved in recovery in women with PPP. A qualitative study by Forde and colleagues (2019) explored the needs and preferences for psychological intervention in thirteen women who had postpartum psychosis. The findings highlighted the importance of family support suggesting a role for family intervention so to enhance the internal resources of the system and reduce stress. There was also an emphasis on the need for psychological support to cope with the loss as well as the rebuilding of identity and sense of self (Forde et al., 2019).

A Recovery Framework

There is not an agreed definition of recovery across the mental health literature and so its conceptualisation has for many years been the subject of ongoing debates. In general terms, researchers and clinicians have referred to two main areas: (i) clinical recovery, defined on objective measures of symptom remission and functional status; and (ii) personal recovery, considered a unique and individual process of living a fulfilling life following a period of ill-health in the presence or absence of symptoms (Davidson & Roe, 2007).

Despite the lack of consensus on a single definition of recovery, one framework has been widely and fruitfully used to explore the processes associated with this experience: the CHIME Framework of Personal Recovery. Leamy and colleagues (2011) conducted a systematic review which included 97 studies, of which the majority included samples with severe mental illnesses. Through narrative synthesis, the researchers identified three superordinate themes characteristics of the recovery journey, recovery processes and recovery stages (Leamy et al., 2011). The recovery processes were categorised into connectedness, hope for the future, identity, meaning in life, and empowerment, giving the CHIME acronym (Leamy et al., 2011). The framework has been represented in Figure 1. The

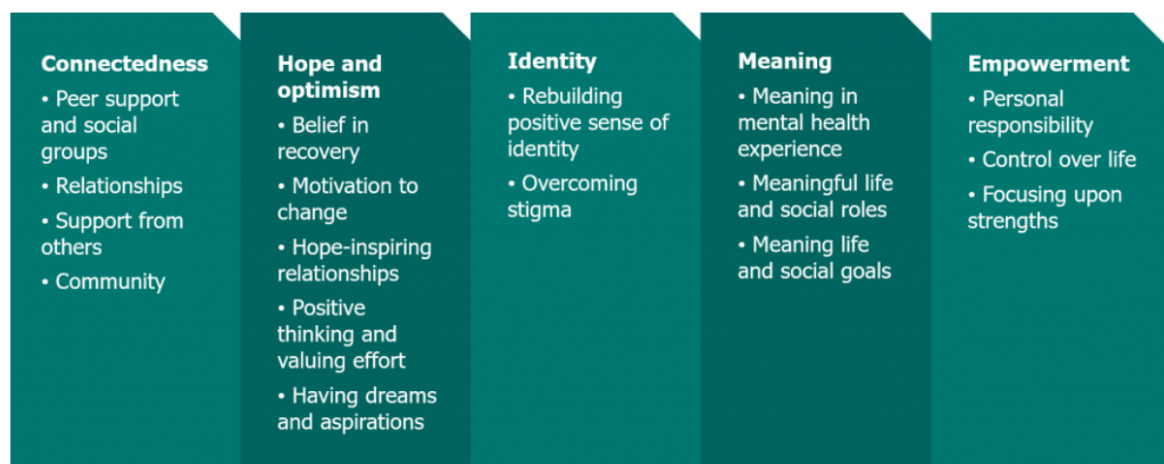
category of connectedness refers to relationships, support from others and belonging to a community. Hope for the future encompasses holding beliefs that recovery is possible, motivation to change, holding hope-inspiring relationships, positive thinking and having aspirations. The category of identity includes considering different dimensions of identity, rebuilding and redefining one's sense of identity and overcoming stigma. Meaning in life speaks to individuals' meaning-making of their illness experiences, the meaning of social roles held and social goals, as well as spirituality, quality of life and the idea of rebuilding a life. Finally, empowerment focuses on strengths and captures the idea that one holds a personal responsibility and control over their recovery (Leamy et al., 2011). The framework creates a guide through which individuals can connect to the uniqueness of their journey of recovery whilst promoting a sense of agency which requires the individual to become an active participant in recovery rather than being a passive recipient (Leamy et al., 2011). The researchers also concluded that the framework could be used as a guide for clinical provision as well as research focused on recovery-oriented interventions (Leamy et al., 2011).

A scoping review of systematic reviews and meta-analyses which included 25 studies found the CHIME framework to be widely endorsed in research focusing on recovery (van Weeghel et al., 2019). The review indicated that themes of personal recovery in varying populations, including individuals with psychosis & schizophrenia, were consistent with those represented by the CHIME approach (van Weeghal et al., 2019). A study by Slade and colleagues (2012) suggested some shortcomings of the framework, particularly related to possible cultural bias. Despite having a person-centred orientation, the reviewers noted that the ideas of recovery which have been drawn on in the conceptualisation and construction of CHIME are based predominantly on western perspectives (vanWeeghal et al., 2019; Slade et al., 2012) and omit cultural considerations from its themes (Ellison et al., 2018). In addition, it has been criticised

for its lack of consideration of the impact of trauma (Ellison et al., 2018). Many individuals who have experienced serious mental illness have endured traumatic experiences predisposing them to mental ill health. Furthermore, episodes of mental illness can in and of themselves be experienced as traumatic, particularly for those experiencing symptoms of psychosis or where involuntary hospitalisation occurs (Paksarian et al., 2014; Tarrier et al., 2007). As such, trauma is often inherent to recovery.

Figure 1

The Chime Framework for Personal Recovery



(Leamy et al., 2011)

This framework, built on the construct of personal recovery has in recent years informed policies and strategic commitments in mental health services across the National Health Service (NHS England, 2019). Embedded in the NHS Long Term Plan (NHS England, 2019), what is now known as a ‘recovery-oriented approach’, has stemmed from service-user contributions to research and service development and offers a more collaborative approach to supporting individuals with mental illnesses (Roberts & Boardman, 2013). This approach allows for the consideration of the diversity of progress towards improved well-being,

acknowledging that challenges may arise but that a meaningful life can be attained regardless of symptomatic experiences (Hamm et al., 2018).

Recovery from Postpartum Psychosis

Across the literature, recovery from postpartum psychosis has been investigated both in terms of clinical recovery and personal recovery. As postpartum psychosis has been described as an illness with a relatively short duration, clinical recovery is typically considered when psychotic symptoms have remitted (Bergink et al., 2015). Bergink and colleagues (2015) conducted a study focused on treatment response to a four-step treatment algorithm in 64 women with postpartum psychosis. Treatment involved the sequential administration of medications including benzodiazepines, antipsychotics, and lithium (Bergink et al., 2015). Remission was considered to have been achieved when women's symptoms of psychosis, mania and depression were absent for a minimum of seven days (Bergink et al., 2015). The researchers found that the median duration of illness from symptom onset to remission was 40 days when the treatment described above was provided (Bergink et al., 2015). Despite the relatively positive prognosis reported by Bergink and colleagues (2015), there is evidence to suggest that women who have had an experience of PPP remain at increased risk of subsequent postpartum and non-postpartum affective episodes. Robertson and colleagues (2005) examined the risk of subsequent psychiatric illness in a sample of 103 women who had postpartum psychosis. They found that 57% of women who had a subsequent birth experienced PPP again and 62% of the entire sample experienced a subsequent affective episode outside of the postpartum period (Robertson et al., 2005). Comparing this to other postpartum mental health difficulties such as postpartum depression and postpartum OCD, reports on duration of illness has been variable across the literature. In some cases PND has been reported to spontaneously resolve within weeks after onset, however, approximately

20% of women still experience symptoms at one year following delivery and 13% after two years (Goodman, 2004). Reports also suggest approximately 40% of women who have PND will have a relapse following subsequent childbirth (Goodman, 2004). Further research on clinical recovery from PPP reported that 74% of women achieved what was considered functional recovery or a return of the ability to engage in tasks of daily living (Burgerhout et al., 2017). This study examined functioning in the domains of work, interpersonal relations, global satisfaction, and recreation in 78 women at nine-months postpartum (Burgerhout et al., 2017). Despite improvements in these measures, when compared with the general population, the women who experienced PPP experienced a greater burden of depression and anxiety suggesting lasting psychological difficulties beyond acute illness (Burgerhout et al., 2017).

Qualitative studies describe women's experiences of personal recovery from PPP as a non-linear, dynamic, and complex process which is unique to each individual (Forde et al., 2020). A systematic review by Forde and colleagues (2020) examined 15 studies documenting the experiences of 103 women who had experienced PPP. Using a thematic synthesis, the reviewers proposed a conceptual model integrating both women's and family members' experiences of PPP which suggested various stages of recovery including experiencing the unspeakable, loss and realigning of the old and new self (Forde et al., 2020). Interviews with women and family members revealed that women move backwards and forwards through these stages, all of which are influenced by the wider social context in which they found themselves (Forde et al., 2020). The current review extends beyond this in it will aim to refine the understanding of recovery through identifying specific factors involved in promoting recovery and supporting women along this journey.

Women with PPP have also reported the need for active participation in recovery (McGrath et al., 2013). McGrath and colleagues (2013) reported that women had to first negotiate a period of immobilisation before recognising a starting point for their recovery to begin which involved the focusing of attention on small changes in day-to-day experiences. Women felt as though it was necessary to regularly reflect on and evaluate their position within the recovery process, however, this was often met with feelings of uncertainty (McGrath et al., 2013). For some leaving the hospital following an acute episode of psychosis may be considered a marker of recovery, however, for many women, this was when significant difficulties began (Doucet et al., 2012; Heron et al., 2012). It is evident from the literature that the process of recovery is highly individualised and is seen by those who have had experiences of PPP as a lengthy process extending beyond the remission of acute symptoms.

Aims & Objectives of The Current Study

Previous reviews have largely focused on the experiences of women who have had postpartum psychosis or those of their family members. Although the acute phase of the illness is typically brief and the length of hospitalisation is usually short (Bergink et al., 2015), research has found that long-term recovery can be a more complex process. Qualitative reports suggest support needs extend beyond the period of hospitalisation and quantitative data has found long-term effects on emotional wellbeing (Bergerhout et al., 2017). Women also remain at increased risk of subsequent episodes with and without psychotic features (Robertson et al., 2005). To date, there are no studies which identify factors that promote recovery for women with postpartum psychosis.

This review aims to systematically review the existing literature on recovery from postpartum psychosis with the focus being on the women who have experienced the illness. It is hoped

that this will guide future research and provide information on the needs of women following what is a deeply distressing time by answering the following question: *What factors promote recovery from postpartum psychosis?* It is hoped that this will guide future research and provide information on the needs of women following what is a deeply distressing time, and factors that can be targeted to enhance their recovery.

Method

The systematic review was conducted and reported in line with The Preferred Reporting Items for Systematic Reviews and Meta-analyses guidelines (PRISMA, Moher et al., 2009). A protocol was developed in advance which outlined the aims and methods to ensure best practice, transparency, and consistency throughout the review (Moher et al., 2015). A search on the international prospective register of systematic reviews (PROSPERO) was conducted prior to the study being undertaken.

Eligibility Criteria

Studies were included when they met the following criteria:

- (1) peer-reviewed journal articles and unpublished dissertations where the full text was available,
- (2) research written in the English language,
- (3) research published from 1992 to include DSM-IV (1994) and ICD-10 (1992) diagnostic changes for postpartum psychosis,
- (4) samples of women with a self-reported diagnosis or postpartum psychosis or based on DSM-IV or ICD-10 classification systems, studies were also considered if the sample included family members or health professionals where the experiences of women with postpartum psychosis could be objectively extracted,

- (5) research outcomes relating to recovery from postpartum psychosis or focus on the recovery period (for example, overcoming acute symptoms, long-term effects of illness, functional recovery, wellbeing),
- (6) both quantitative and qualitative designs.

Studies were excluded where they:

- (1) explored perinatal mental health disorders that do not include psychotic experiences (for example, postnatal depression, postpartum obsessive-compulsive disorder, postnatal anxiety etc.),
- (2) explored schizophrenia or other diagnoses pertaining to psychotic experiences that do not arise in the postpartum period,
- (3) did not stipulate the diagnosis (for example, severe postpartum mental health difficulties), (4) only investigated prevalence or prevention,
- (5) explored only family or health professionals' experiences and
- (6) the full text was not available.

Information Sources and Search Strategy

A systematic search was conducted on four electronic databases including Pubmed, Web of Science, APA PsychInfo and CINAHL on 1st December 2021. These databases were chosen as they were considered primary sources for literature in psychology, human medicine, psychiatry, and adjunct fields. Pre-specified search terms were applied to all fields with a date range from 1992 to the present. The start date was set to include the specifiers of symptoms being associated with the puerperium period and with postpartum onset added to the ICD-10 (1992) and DSM-IV (1994) respectively.

The following search terms were used for all databases:

1. Terms relating to diagnosis: “postpartum psychosis” OR “puerperal psychosis” OR “postnatal psychosis” OR “psychosis after childbirth” OR “postnatal period” AND “psychosis”
2. Terms related to the construct being explored: “recovery” OR “recovered” OR “recover” OR “recov*” OR “rehabilitation” OR “rehabilitated” OR “rehab*” OR “post-illness” OR “post-acute”)

The titles and abstracts of all studies were reviewed against the inclusion criteria. The reference lists of articles determined to meet inclusion criteria and existing reviews and meta-synthesis/meta-analyses relating to postpartum psychosis recovery were reviewed by hand. A forward and backward search strategy was implemented, there is evidence to support this strategy as a means for identifying additional research for inclusion, particularly where there are difficulties locating information (Horsley et al., 2011), which was considered in the case of this review due to the limited research in the area. Alternative databases were also screened, including Google Scholar, to search for articles that may have been missed in the initial database search. All searches were re-run prior to the completion of the review to check for recent publications, no additional articles were found. All identified texts were obtained as electronic copies.

Study Selection

PRISMA guidelines (Moher et al., 2009) were followed during the study selection process which is illustrated in Figure 2. The initial search of all four databases yielded 387 unique studies; this was reduced to 325 once duplicates were removed. The title, keywords and abstracts of all studies were reviewed by the lead author (EM) following the inclusion and

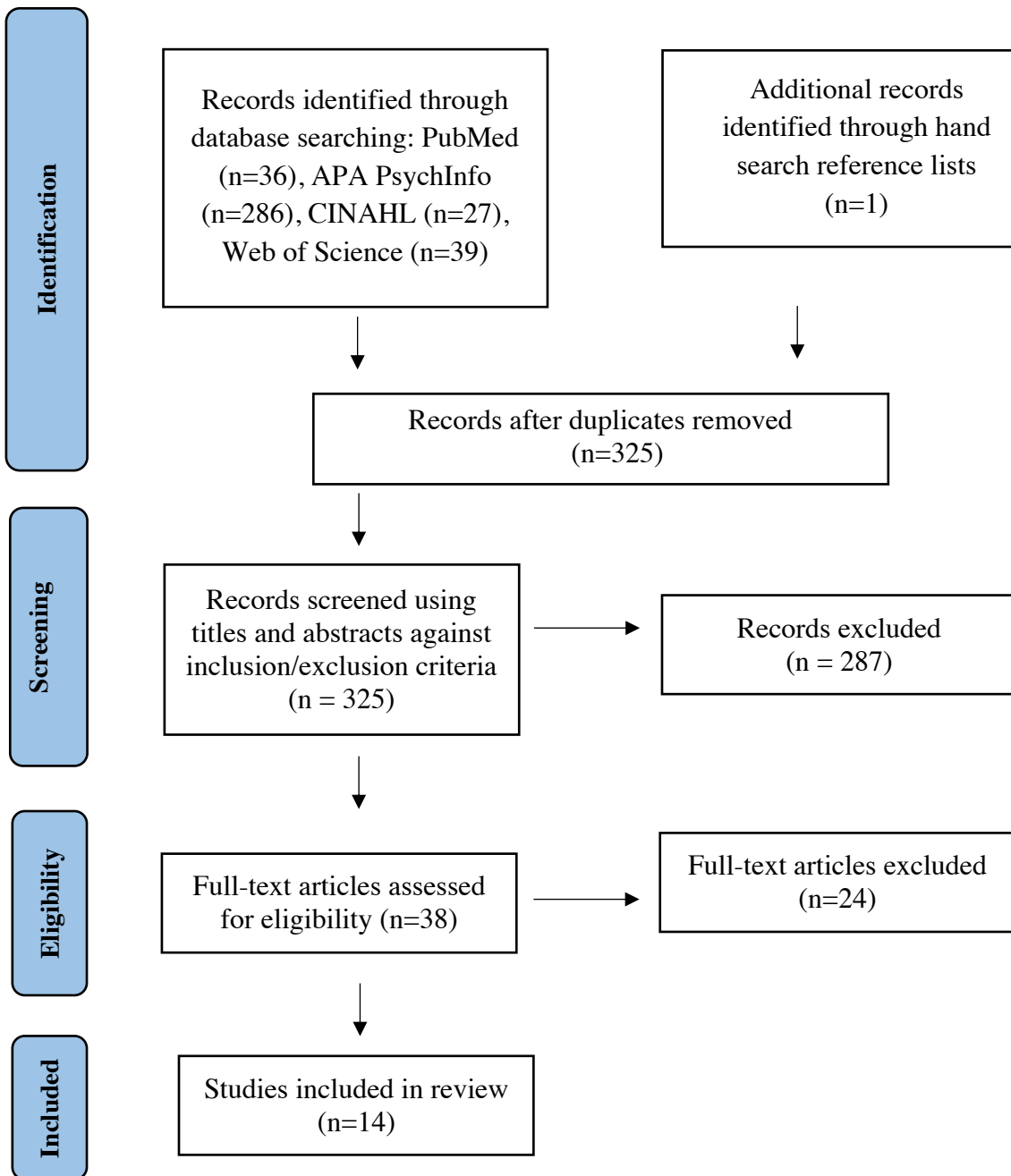
exclusion criteria to determine eligibility; 280 studies were excluded. To ensure the reliability of decision-making a random 10% of studies were reviewed by an independent rater, a peer doctorate student (ZM). This equated to 32 studies in total. Where there was a disagreement over eligibility both parties discussed the article in full, carefully considering the eligibility criteria until a decision was agreed upon. A discussion arose for three articles with the reasons for disagreement being related to psychiatric diagnosis and stage of illness. The second reviewer considered two studies for inclusion where the diagnosis of the study sample was not specifically PPP but rather a psychiatric illness that required hospitalisation (Rapinesi et al., 2015; Reardon et al., 2003), however, the author of the review argued that the diagnosis of PPP was important for consistency and continuity in the research question. Both studies were excluded. The third paper where disagreement arose focused on women's experiences in the first days of postpartum psychosis (Engqvist et al., 2013). The author of the review believed data could be extracted related to recovery however, the second reviewer argued that it was not possible for the reviewer to clearly distinguish recovery-related factors as the time frame women reported on in the study was during the acute phase of illness. This study was also excluded from the review. Following discussion consensus was reached on all three articles. Considering the relatively small yield of articles, it is worth noting the rate of disagreement in those randomly selected by the second reviewer, equating to approximately 10%. Projecting this figure over the sample of articles as a whole would suggest that 30 studies would have potentially been disputed. This is the same figure as those reviewed by the second rater and suggests that there may have been a lack of clarity in the inclusion and exclusion criteria.

The second stage was to review the full text of the 45 articles which were considered potentially relevant to the research question. These 45 articles were examined in line with the

inclusion criteria; 13 articles were considered to meet the inclusion criteria and one additional article was identified from the reference lists. In general, reasons to omit articles included: the study participants not having a diagnosis of postpartum psychosis but instead serious mental illness requiring hospitalisation, the study focused on healthcare professionals or family members where data specific to the woman's recovery could not be extracted, or data not being specific to recovery. Two studies were excluded as they were not available in English.

Figure 2

PRISMA Flow-Chart for Study Selection



Data Extraction

Firstly, a textual narrative was written for each study, as recommended in the guidance for conducting a narrative synthesis as outlined by Popay and colleagues (2006). The textual summaries included information about the study aims, sample characteristics including details of diagnosis, sample size, time since onset of PPP, hospitalisation at the time of illness, age and ethnicity; study design, recruitment settings, methods of data collection and analysis, measures of recovery where relevant, identified themes and recovery-related outcomes. The information from the textual descriptions was tabulated under the same headings as above with the addition of authors, year of publication and the country where the study was conducted (see Table 1).

Quality Assessment

The methodological quality of the studies meeting inclusion criteria was critically appraised using The Quality Tool for Studies with Diverse Designs (QATSDD; Sirriyeh, Lawton, Gardner & Armitage, 2012). The QATSDD was developed for use in systematic reviews inclusive of qualitative, quantitative, mixed methods and multi-methods designs, primarily in the field of psychology. The tool facilitates the critical appraisal of the quality of methodology, the quality of evidence and the quality of reporting in studies (Sirriyeh et al., 2012). The QATSDD was chosen for the current study due to its applicability to both qualitative and quantitative research and its reliability. Through feedback from health-researchers face validity for the QATSDD was established and good inter-rater reliability ($k=71.5\%$) and test-retest reliability has been found (Sirriyeh et al., 2012). The QATSDD employs a flexible sixteen-item checklist that allows for an iterative process to be undertaken so that different types of quantitative and qualitative approaches can be addressed (Sirriyeh et al., 2012). Each item is scored from zero to three and has specific instructions as to how each

score would be met. Fourteen of these criteria apply to qualitative studies and 14 apply to quantitative studies. In articles lacking the level of detail required to make a judgement for any given item, a score of zero should be awarded. The maximum possible score is 42 and all studies are given a percentage which can be considered to indicate 'high', 'good', 'moderate' or 'poor' quality.

Synthesis of Results

A narrative synthesis was used to summarise and explain the findings of the included studies. As both qualitative and quantitative designs were included in the review, a narrative synthesis was chosen as the emphasis is on an interpretative synthesis of words and text rather than statistical data. In this review, the guidelines set out by Popay and colleagues (2006) were followed which sets out a systematic method of synthesising research findings. The process suggested in this guidance includes four steps: developing a theory of why and whom for, developing a preliminary synthesis of findings of included studies, exploring relationships within and across the data and assessing the robustness of the synthesis itself (Popay et al., 2006). The guidance does not require these steps to be followed linearly and allows for the reviewer to move between these steps and omit steps where relevant.

Results

Study Characteristics

A total of 14 studies met the inclusion criteria for this review. Study characteristics, grouped by study design (qualitative and quantitative) are shown in Tables 1 and 2 and are presented in order of year published. The studies included in the review were published from 2003 to 2021 and were conducted in the United Kingdom (UK, n=9), Sweden (n=2), Australia (n=1), the Netherlands (n=1) and Canada (n=1). The number of participants across all studies with a

diagnosis of postpartum psychosis ranged from five to 78, capturing a total of 197 women (median=9.5, IQR=4.25).

All studies recruited women who had a diagnosis of postpartum psychosis. Only one study conducted an assessment to confirm a diagnosis, using the Structured Clinical Interview for DSM Disorders (SCID) (Burgerhout et al., 2017). Two studies stated that diagnoses of PPP had been confirmed at the time of onset by a physician (Jefferies et al., 2021; Doucet et al., 2012). Time since onset of PPP ranged from 6 months to 37 years across twelve of the studies; the studies collecting online narratives could not confirm the time since onset or diagnosis, however, researchers compared experiences described with diagnostic features (Beck, 2020; Engqvist et al., 2011). Only six studies reported ethnicity data for their samples; these studies had predominantly White participants. Four studies also included family members, partners or significant others of women with PPP in their sample (Forde et al., 2019; Wyatt et al., 2015; Engqvist & Nilsson, 2014; Doucet et al., 2012), however, the findings were presented so that data could be extracted that was specific to the women's recovery.

Three of the studies recruited exclusively from healthcare settings including both inpatient and community perinatal services, four studies recruited from healthcare settings and through websites and online forums, four studies recruited exclusively from online forums and two studies included narratives posted on the internet where women were not directly recruited. One study was advertised on a radio channel and the author was contacted by one individual interested in partaking, who then introduced the authors to a patient support network. Action on Postpartum Psychosis (APP), a national charity supporting women and families affected

by PPP, was named most frequently in those studies that utilised online forums for recruitment., as a significant source of advertising.

Table 1

Qualitative Designs – Summary of Study Characteristics

	Author, Year, Location	Study Aims	Sample Description	Method	Data Collection	Method of Analysis	Overview of Themes
1	Robertson & Lyons (2003) UK	To explore women's experiences of PPP and gain an understanding about living with PPP following illness	n=10 PPP diagnosed in accordance with DSM-IV Time since onset: 6mths–10yrs (m=4yrs) Age at participation: 28- 44yrs (m= 34yrs) Subsequent births: n=3 (all unaffected by PPP)	Newsletter sent to women who had previously participated in a clinical & genetic study	Semi- structured interviews Face-to-face and in the participant's home. Four main topic points identified	Grounded Theory (Glaser & Straus, 1967)	Three main themes: Postpartum psychosis identified as a separate form of mental illness A sense of loss felt following the episode of PPP Changes in relationships since PPP Two higher-order themes: Living with emotions Regaining and changing self
2	Engqvist et al. (2011) Sweden	To explore women's experiences of PPP from narratives on the internet	n=10 Narratives on the internet from women with PPP Narratives checked against diagnostic criteria of DSM-III & DSM-IV- TR	Internet Search Engines (Google, Alta-Vista & Yahoo)	Search using terms: <i>postpartum</i> <i>psychosis</i> , <i>puerperal</i> <i>psychosis</i> ,	Cross-case analysis (Miles & Huberman, 1994) and Content	Four main themes: Unfulfilled dreams: disappointment with delivery, caretaking inabilities, pervasive paranoia & guilt

					<i>postnatal psychosis, narratives and postpartum psychosis sites</i>	analysis (Krippendorff, 2004)	Enveloped by darkness: fear, an unreal world, feeling controlled, disorganised thinking Disabling symptoms: feeling ill at east, lack of sleep, self-destructive behaviour & poor concentration Feeling abandoned: mistrust, detachment from baby & world, dissatisfaction with care
3	Doucet, Letourneau & Blackmore (2012) Canada	To explore support needs & preferences, accessibility to resources and barriers to support in women with PPP	n=9 women with PPP n= 8 fathers recruited Diagnosed by physician in line with DSM-IV Time since onset: 6mths-6yrs Age at time of participation: m=34 yrs Hospitalised at time of illness: n=9 History of mental illness: n=4 Ethnicity White (n=7)	Purposive sampling: community and hospital services providing PPP support	Semi-structured interviews Face-to-face and telephone Mothers & fathers interviewed separately	Inductive thematic analysis (Braun & Clark, 2006)	Four main themes Support needs: parenting, mental health & informational Support preferences: information, emotional & affirmational, support from informal networks Availability & accessibility to support: non-existence of specialised support, limited availability, family provision. Barriers to support: health service & lack of knowledge about PPP

		Other ethnic group (n=2)					
4	Heron et al (2012) UK	To explore women's experiences of the process of recovery and beliefs about services needed to support recovery	n=5 women recovered from PPP Time since onset: 3yrs–20yrs (M=9.2yrs) Hospitalisation at time of illness: n=5 History of mental illness: n=1 Ethnicity: White British (n=4) & White European (n-1)	APP Service users who had previously expressed interest in research were contacted	Semi-structured interviews designed and conducted by service user researchers	Inductive Grounded Analysis (Silverman, 2006)	Six main themes: Ruminating and Rationalising Rebuilding social confidence Gaining appropriate health service support Facilitation of family functioning Obtaining appropriate information Giving recovery time
5	McGrath et al. (2013) UK	To develop a theoretical understanding of recovery from psychosis following childbirth	n=12 women who had PPP No formal assessment but medical records checked where available Time since onset= 4mths-23yrs Age at participation: 26yrs-45yrs (M=35.6)	MBU in Northwest England. Website forums Newsletters for women with	Semi-structured interviews Face-to-face & telephone Questioning responsive to women's comments	Constructivist grounded theory (Charmaz, 2006)	Four main themes: Recovery as a process: from initial immobilisation to maintaining recovery Evolving an understanding of PPP Strategies for recovery: crisis management, concealing illness, sharing experiences & help-seeking

			History of mental illness: n=3 Ethnicity: White British (n=12)	postpartum illness,			Sociocultural context of recovery
6	Engqvist & Nilsson (2014) Sweden	To explore the recovery process after discharge	n=7 women who had PPP n=6 next of Kin Time since onset = 7yrs–32yrs Age at illness= 24–32yrs Age at participation = 44–62yrs Hospitalised at time of illness: n=6 Length of hospital admission: 0-21 days (M=9)	Radio advert Swedish patient association network of women with PPP	Semi-structured interviews face-to-face	Inductive content analysis (Graneheim & Lundman, 2004)	Two main themes and six subthemes: The recovery consisted of the turning point, personal recovery, and social recovery Supporting circumstances included relatives and friends support, professional support, and support through medication
7	Glover et al. (2014) UK	To gain further insight into women’s individual experiences of PPP and the context in	n=7 women with PPP Diagnosed in the previous 10 years Age at participation: 25–45yrs Hospitalised at time of illness: n=7	Specialist Psychiatry Service for Mothers & Babies in the North of England	Semi-structured interviews Face-to-face	Thematic analysis (Braun & Clark, 2006)	Four main themes: The path to PPP and it’s development Experiencing unspeakable thoughts and an unacceptable self Expectations to “snap out of it” & experiences of support

		which they make sense of it					Women's perceptions of causes of PPP
8	Wyatt et al. (2015) UK	To explore how women and their partners make sense of PPP, their relationship and the mutual influence of PPP and the relationship	n=7 dyads women with PPP and their significant others Age at participation: 28– 33yrs Time since onset: 5mths–4yrs Hospitalisation at time of illness: n=7 History of mental illness: n=0	NHS services & Online recruitment (Twitter, Facebook & APP)	Semi- structured interviews Face-to-face	Interpretative Phenomeno- logical Analysis (Smith, Flowers & Larkin, 2009)	Four main themes: “She wasn't herself” - threatened relationships Invalidation & Isolation – experiences of seeking & receiving support “The worst life can throw at us” – perceptions of trust and respect following PPP “A double-edged sword” – the negative & positive influence of relationships on PPP experience
9	Plunkett et al (2017) UK	To explore the role of the baby in recovery from PPP	n=12 Women who had PPP Time since onset: 2mnth-26yrs (M=6yrs) Hospitalisation at time of illness: n=9 History of mental illness: n=1	MBU & Website forums	Semi- structured interviews face-to-face & telephone	Thematic analysis (Braun & Clark, 2006)	Three main themes: The baby has a role in recovery – a motivating factor towards recovery The baby as a barrier to recovery – increasing emotional distress

			Age at participation: 23–54yrs (M= 39.5) Ethnicity: White British n=10 Mixed Race n=1 Latin America n=1				and hindering help-seeking and self-care The baby facilitates recovery – reducing emotional distress, helpfulness of positive interactions, increasing self-efficacy.
10	Roberts et al. (2018) UK	To explore how a PPP storyline and increase in public awareness were received by women recovered from PPP	n=9 Time since onset: 3yrs–37yrs (M=16yrs) Age at participation: 28–65yrs (M=45yrs) Ethnicity: White British n=9	APP Purposive sampling	Semi-structured interviews Telephone and face-to-face	Inductive thematic analysis (Braun & Clark, 2006)	Five main themes: Public education – hidden illness, perceived public influence of tv programme Stigma – heightened as a postpartum illness Disclosure – difficulties and increasing ease of sharing Reassurance – in recovery and programme providing reassurance Family relationships – the impact of PPP on others
11	Forde, Peters,	To explore and understand the	n=13 women with PPP	MBU & community	Semi-structured interviews	Thematic analysis	Three main themes & 12 subthemes:

	Wittkowski (2019) UK	psychological needs of women with PPP	n=8 family members of women with PPP Time since onset: 3mnth–23yrs Age at participation: 25 – 44yrs Hospitalisation at time of illness: n=11 History of mental illness: n=8 Ethnicity: White British n=13	perinatal team APP forum	Telephone and face-to-face	(Braun & Clark, 2006)	Seeking safety and containment – unexpected and extreme distress Recognising and responding to the psychological impact of PPP – the mechanisms involved in recovery Planning for the future – long-term impact of PPP and maintaining progress
12	Beck (2020) UK	To conduct a narrative analysis of women’s stories of PPP	n=8 narratives from women who had PPP No additional demographic information due to	APP website	Narrative inquiry of narratives posted on the APP website	Narrative Analysis (Burke, 1996) Dramatistic Pentad)	Problematic areas identified included: Conflict between mother and hallucinations or delusions Tension between mother and the psychiatric ward, entering ECT or at night-time.

		nature of data collection					
13	Jefferies et al (2021) Australia	To gain an understanding of women's experiences of PPP	n=10 women with PPP Diagnosis confirmed by psychiatrist at time of treatment Time since onset: in previous 10yrs Age at time of illness: 28 – 35yrs	Peri-natal website	Semi-structured interviews Face-to-face or audio-visual	Thematic analysis (Clark & Braun, 2006)	Five main themes: Family history or pre-existing mental illness after a previous pregnancy Childbirth and the early postpartum period Subtle changes in thoughts and behaviours Frank symptoms of psychosis Recovery – back to 'normal', fear of return & managing recovery

Table 2

Quantitative Design – Summary of Study Characteristics

Author, Year, Location	Study aims	Sample Description	Design Analysis	Intervention & Measures	Results
1 Burgerhout et al (2017) The Netherlands	To prospectively assess recovery 9 months postpartum in women requiring hospitalisation for PPP	n=78 Women with PPP with onset within 6 weeks of birth – SCID ax in line DSM-IV Recruited from MBU Age at participation: M=32.1yrs Duration of acute illness: 40.5 days (median) History of mental illness: n=32 Ethnicity: Dutch=89.7%	Cross-sectional Mann-Whitney U for continuous variables and Pearson X ² and Fisher exact test for categorical variables	Pharmacological treatment in line with structured algorithm (Bergink et al., 2015). Longitudinal Interval Follow-up Evaluation-Range of Impaired Functioning Tool (LIFE-RIFT, Leon, 1999) Brief Symptom Inventory (BSI, Derogatis & Melisaratos, 1983)	74% of women reported good functioning 88% resumed premorbid employment Higher burden of depression and anxiety than general population Patients experiencing relapse (18%) had considerable functional impairments.

Quality Ratings

The instructions for using the QATSDD as outlined by Sirriyeh and colleagues (2011) were followed for all included studies. Each article was scored 0 (not at all), 1 (very slightly), 2 (moderately) or 3 (complete). For each article, the sum of the 14 relevant criteria was expressed as a percentage of 42, the maximum possible score. The scoring for all studies is presented in Table 3. Additionally, an overall quality score was calculated for all studies. Scores on the included articles ranged from 47.6% to 64.3% with a mean of 57.8% (Table 3), suggesting an overall selection of good quality articles included in the review. Only one study scored in the ‘moderate quality’ range (Doucet et al., 2012) with the remaining considered as ‘good quality’. The included studies scored higher on criteria relating to the aims and objectives of the study, description of the research setting, description of procedure of data collection and fit between research question and method of analysis. The lowest scoring criteria across all studies included having an explicit theoretical framework, evidenced sample size considerations in terms of analysis and evidencing service user involvement in study design. The quality varied amongst the included studies and therefore some caution must be taken when interpreting their findings. To increase confidence in the quality appraisal ratings, the thesis supervisor was consulted. The primary application of the quality appraisal was to summarise the current state of the research in this field rather than as a guide for the conceptual synthesis.

Table 3
QATSSD Scoring

QATSDD Scoring														
Criteria	Roberts on & Lyons (2003)	Engqvist et al. (2011)	Doucet et al. (2012)	Heron et al. (2012)	McGrath et al. (2013)	Engqvist & Nilsson (2014)	Glover et al. (2014)	Wyatt et al. (2015)	Plunkett et al. (2017)	Roberts et al. (2018)	Ford et al. (2019)	Beck (2020)	Jefferys et al. (2021)	Burger et al. (2017)
1. Explicit theoretical framework	0	0	1	0	0	1	2	0	1	0	0	2	0	0
2. Statement of aims/objectives	3	3	3	3	3	3	3	3	3	3	3	3	3	3
3. Clear description of research setting	2	3	2	3	3	2	3	3	2	2	3	3	2	3
4. Evidence of sample size considered in terms of analysis	0	0	0	0	0	0	1	0	0	0	0	0	0	0
5. Representative sample of target group	1	1	1	1	1	0	0	1	1	0	1	0	2	2

6. Description of procedure for data collection	3	3	2	3	3	3	3	2	2	2	3	1	3	3
7. Rationale for choice of data collection tool(s)	2	3	0	0	1	2	2	0	1	1	2	2	1	2
8. Detailed recruitment data	3	2	3	2	2	2	3	1	2	3	2	1	2	3
9. Statistical assessment of reliability and validity of measurement tools (Quant)	-	-	-	-	-	-	-	-	-	-	-	-	-	1
10. Fit between stated research question and method of data collection (Quant)	-	-	-	-	-	-	-	-	-	-	-	-	-	2
11. Fit between	3	3	3	3	3	3	3	3	3	2	2	2	3	-

stated research question and format and content of data (Qual)															
12. Fit between research question and method of analysis	3	3	3	2	3	3	3	2	3	3	3	3	3	3	
13. Good justification for analytic method selected	3	1	1	0	1	0	0	3	3	0	3	3	1	1	
14. Assessment of reliability of analytic process (Qual)	1	3	0	3	3	0	3	2	3	3	3	2	3	-	
15. Evidence of service user involvement in design	0	0	0	3	0	0	0	0	0	3	0	0	0	0	
16. Strengths and limitations	1	1	1	2	2	2	1	2	2	2	3	1	1	2	

discuss critically														
Total Score	25	25	20	25	25	21	27	22	26	25	29	24	24	25
Quality Score	59.5%	59.5%	47.6%	59.5%	59.5%	50%	64.3%	52.4%	61.9%	57.1%	66.7%	54.7%	57.1%	59.5%

75% - 100% High Quality

50% - 75% Good Quality

25% - 50% Moderate Quality

0 - 25% Poor Quality

Quantitative Findings

Of the 14 studies included in the review, only one implemented quantitative methodology. Bergerhout and colleagues (2017) designed a prospective longitudinal study, using a cross-sectional design, to assess functional recovery and psychological distress at nine months postpartum in women admitted to an MBU and diagnosed with PPP. The findings showed that most women with PPP achieved what was considered by the authors to be a sustained remission, where there was no relapse in symptomatology at nine-months postpartum (Bergerhout et al., 2017). The authors also found that nearly three-quarters of women with PPP experienced a substantial or complete functional recovery at nine month follow-up. Despite this, functioning was significantly impaired in those women who had experienced a relapse in symptoms when compared with those who did not (Bergerhout et al., 2017). It was also reported that the duration of the acute episode was significantly associated with the level of functional impairment experienced by women (Bergerhour et al., 2017). When compared with a population-based matched control group women with PPP scored significantly higher on measures of psychological distress in the domains of depression and anxiety (Bergerhout et al., 2017). This suggest that despite what may be considered clinical recovery or the remittance of symptoms of psychosis, difficulties can persist. Whilst the authors of the study concluded that the prognosis for women with PPP is generally optimistic and there is a return to pre-morbid levels of daily functioning there is a lasting impact on the psychological well-being of women who experience PPP (Bergerhout et al., 2017). The women in this study were all recruited from the same MBU which presents a possible limitation as many women with PPP find themselves in general psychiatric wards and so the findings may not be generalisable to those who do not experience specialised care (Bergerhout et al., 2017).

Measures of Recovery

Burgerhout and colleagues (2017), measured psychosocial functioning using an observer-rated tool, the Longitudinal Interval Follow-up Evaluation-Range of Impaired Functioning Tool (LIFE-RIFT; Leon et al., 1999) which examines impairment in work, relationships, global satisfaction, and recreation. Participants were asked to specify to what degree their work and interpersonal relationships had been impaired as a result of their experience of PPP (Burgerhout et al., 2017). In the domain of satisfaction, participants were required to rate their overall level of satisfaction and to what extent they were engaged with recreational activities and the level of enjoyment they experienced (Burgerhout et al., 2017). The LIFE-RIFT measure has been found to have good reliability and validity (Leon et al., 2000).

The Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983) was used to assess psychological distress. The BSI is a self-report questionnaire examining different areas of psychological well-being, including depression and anxiety. This measure has been found to have good test-retest reliability and internal consistency (Derogatis & Melisaratos, 1983). In the study by Burgerhout et al (2017), women were asked to complete the questionnaire and return it to the researchers by mail. It was found that women with PPP had significantly higher scores on the depression and anxiety subscales, however, data was unavailable for 27% of the PPP cohort which the authors posited may represent a selection bias amongst the data that was gathered.

The quantitative study highlighted the lasting burden of anxiety and depression beyond clinical recovery or the remission of symptoms of psychosis. This suggests the need to consider residual psychological difficulties following remission and discharge from hospital so that personal recovery in women with PPP can be supported.

Qualitative Findings

Thirteen studies included in the review used qualitative methodology; 11 of these used semi-structured interviews and two examined narratives from the internet (Beck, 2020; Engqvist et al., 2011). Broadly, the studies focused on women's experiences of PPP from onset to recovery (Jefferies et al., 2021; Beck, 2020; Glover et al., 2014; Engqvist et al., 2011; Robertson & Lyons, 2003) support needs and intervention preferences during recovery from PPP (Doucet et al., 2012; Heron et al., 2013), recovery as a process (McGrath et al., 2013; Engqvist & Nilsson, 2014; Plunkett et al., 2015) and the role of relationships in recovery (Wyatt et al., 2015; Plunkett et al., 2017). One study was designed in collaboration with service users who participated as both interviewers and interviewees during the data collection (Heron et al., 2012).

Narrative Themes

Allowing Time for Recovery

Across qualitative findings, recovery was represented as a unique journey through which women encountered complex emotions and experiences. Women interviewed in the study by Heron and colleagues (2012) anticipated recovery following discharge from inpatient care would be linear and progressive, however, periods of mood disturbances and anxiety persisted beyond the acute phase of illness. Persistent difficulties were experienced as “a blow” to women who were not expecting this following the remission of psychotic symptoms (Heron et al., 2012). Persistent difficulties were also evidenced in the quantitative study as women's psychological distress was greater than controls following symptom remission (Burgerhout et al., 2017). McGrath et al (2013) identified recovery as a process; using grounded theory methodology the authors proposed a model of recovery which required

women to navigate a sense of immobilisation and feelings of loss before being able to implement strategies which allowed for the maintenance of recovery. The reports from women in this study highlighted the uncertainty inherent to recovery with periods of improvement being followed by a worsening of symptoms (McGrath et al., 2013). It was seen as important to accept that recovery takes time which in turn reduced feelings of stress and pressure (McGrath et al., 2013; Heron et al., 2012).

Women identified the importance of taking an active role in their recovery, recognising “turning points”, evaluating their position in the recovery process and finding positives or learning points in their experiences (McGrath et al., 2013). The idea of being an active agent in recovery from PPP was echoed in the explorative qualitative study conducted by Engqvist and Nilsson (2014). Women spoke about having to make the decision to return to their lives and to take part in recovery. It was evident that the temporal element of recovery differed between and within studies. Beck’s (2020) analysis of narratives from the internet found that one participant identified a specific point of recovery at nine months postpartum. Jefferies and colleagues (2021) also reported one participant to feel recovered six weeks after the remission of acute symptomatology, however, this was not the case for other women in the study who remained feeling unwell for over a year following an episode of PPP. Promoting recovery, therefore, involved women moving through different stages at their own pace and required letting go of certain expectations (Forde et al., 2019).

The Need for Specialist Support

Women identified PPP as being significantly different from other mental health difficulties and required specialised treatment (Roberts et al., 2018; Plunkett et al., 2015; Glover et al.,

2014; Heron et al., 2012; Doucet et al., 2012; Robertson & Lyons, 2003). Women felt that inpatient treatment should take place in MBUs so that the specific needs of new mothers and the critical timing in the relationships with their infants could be privileged; this was considered beneficial for recovery (Heron et al., 2012). Heron and colleagues (2012) highlighted in their findings women's anger towards treatment in general psychiatric units, as their needs could not be met and being without their infant increased distress. This was a common thread in other studies as both Plunkett et al (2015) and Doucet et al (2012), through interviews captured a sense of mother-infant separation being detrimental to recovery not only causing distress but also impacting confidence in mothering responsibilities on discharge. It was also found that interactions with infants that signified bonding was helpful for women's sense of feeling they were recovering (Doucet et al., 2012). This highlighted the importance of maintaining a mother-infant union in the early stages of care to promote hope and recovery (Doucet et al., 2012). Women who were able to establish a strong bond with their infants perceived a quicker journey towards recovery (Doucet et al., 2012). It is evident that the journey of recovery begins during the acute phase of illness and therefore promoting a safe space to develop mother-infant relationships during this time is beneficial for wellbeing and recovery (Heron et al; 2013; Doucet et al., 2012; Robertson & Lyons, 2003).

Throughout the qualitative studies, women also recognised the need for specialist and tailored support beyond acute illness and following discharge from inpatient services. Doucet and colleagues (2012) identified four categories of support needs. Women expressed the need for instrumental support in caring for the infant and caring for their own physical needs particularly on returning home from hospital (Doucet et al., 2012). Heron and colleagues (2012) also found that women identified the need for home-based support following discharge specifically regarding caring responsibilities. Women also identified the

importance of receiving appropriate information as they embarked on their recovery journey (Doucet et al., 2012). Informational support allowed them to make sense of their experience, to better understand PPP and enable sharing of their experience with those in their network (Doucet et al., 2012). It was identified that information should be provided by professionals and be repeated often and adjusted depending on the context and phase of illness and recovery (Doucet et al., 2012). Thirdly, women needed emotional support. Initially, this was preferred at a one-to-one level with a professional and later support through peer groups (Doucet et al., 2012). Finally, affirmational support was required for recovery; women preferred to receive this from family members, however, certain barriers to this existed where family members lacked knowledge of PPP (Doucet et al., 2012).

In this study women reported that medication was vital for their recovery, however, medication was also considered as taking a passive role in recovery and the sedating effects impeded their sense of competence (Heron et al., 2012). Similarly, Engqvist and Nilsson (2014) found that medication contributed to recovery overall although some women considered medication as a limitation to their recovery. Women suggested that greater support was needed to aid women's understanding of medication and that healthcare professionals should promote choice and collaboration in care as each recovery experience is different and multifaceted (Heron et al., 2012; Engqvist & Nilsson, 2014). Women felt that professionals did not always involve them in decisions about their treatment and both the lack of clear information around medication as well as postpartum psychosis more generally, they lacked agency and a sense of control in the treatment they were receiving (Heron et al., 2012). Therefore, to support a positive recovery experience it was evident that a collaborative approach to medication management was beneficial (Heron et al., 2012; Engqvist & Nilsson, 2014).

Strategies Supporting Recovery

Across the studies, various strategies for recovery were documented. McGrath et al (2013) reported that a strategy supporting the process of recovery in the initial stages involved focusing of attention on changes in experiences so that women were enabled to notice indicators of recovery. Women found helpfulness in noticing any positives in their experience and appreciating positive aspects of everyday life (McGrath et al., 2013). Women also reported the importance of avoiding stress (McGrath et al., 2013) and focusing on making time for things that were enjoyable (Heron et al., 2012).

Forde and colleagues (2019) explored women's psychological interventions from the perspective of women who had an experience of PPP. They found that an important strategy for women was to create a timeline of events and fill in gaps in their memory so that they could process and consolidate their experience of PPP (Forde et al., 2019). This was achieved through conversations with family members and reviewing medical notes (Forde et al., 2019). Their ability to develop a narrative of events facilitated recovery and their ability to cope, as women reported experiences of relief when both they and others could make better sense of their experience of PPP (Forde et al., 2019). This strategy was practised by participants in other studies also; women reported using timelines to integrate their experiences and information from others into a cohesive story (Heron et al., 2012) Wyatt et al (2018) also found that women benefited from constructing a shared conceptualisation with their significant others of the period of illness, which was described as cathartic.

Active attempts to regain a sense of self and re-establish personal identity were named across several studies as helpful in recovery. In one study women reported that the behaviours and experiences during their episode of PPP signified a distinct departure from their sense of self

(Forde et al., 2019). During the process of recovery, it was important for women to redefine their identity incorporating what it meant to be both a parent and a survivor of a serious mental illness (Forde et al., 2019). Therapy was considered a space which provided an opportunity for women to explore their experiences and rebuild their sense of identity (Engqvist & Nilsson, 2014).

Women also engaged in strategies they believed would protect them from further harm. Women reported utilising strategies to conceal possible indicators of illness (McGrath et al., 2014; Robertson & Lyons, 2003). McGrath et al (2014) found women minimised their experience when sharing with professionals as well as people in their personal networks; women believed such strategies would protect them from judgement as well as fear of re-hospitalisation and the possibility of custody loss. A second study also documented women using strategies to suppress natural emotional responses so to avoid judgement from others and being overly pathologised (Robertson & Lyons, 2003). Concealing and minimising difficulties may to some extent contribute to subsequent episodes as help-seeking is inhibited when early warning signs may show, and as such, impact on long-term recovery both clinically and personally. To avoid further episodes of PPP, many women decided to not have any more children (Jefferies et al., 2012; Forde et al., 2019; McGrath et al., 2013).

The Role of The Infant in Promoting Recovery

One study explored the role of the infant in recovery. Plunkett and colleagues (2015) identified the baby as intrinsic to recovery based on interviews with mothers who had PPP. Maintaining the union of mother and infant was considered vital and being with the infant was reported to improve overall emotional wellbeing (Plunkett et al., 2015). Interactions with the infant were found to improve women's sense of confidence and self-efficacy and

recognition of bonding signified being in a place of recovery (Plunkett et al., 2015). Women thought that separation would have been detrimental to their recovery and would have increased emotional distress (Plunkett et al., 2015). Although the infant was considered to promote recovery by almost all women in this study, there were also some barriers to recovery that were linked to the infant (Plunkett et al., 2015). This theme links with the previous theme of the importance of specialist support, particularly regarding the provision of MBUs as allowing for this union to stay intact was vital for aspects of recovery in terms of emotional well-being and functional capabilities. At times, however, the baby was seen to increase emotional distress as women feared they were not good enough mothers, and challenges with meeting the infants' needs negatively impacted women's views of themselves (Plunkett et al., 2015). Being with the infant also meant less time for self-care and the pressure felt to appear to be coping led to a reduction in help-seeking by some of the women (Plunkett et al., 2015). In another study, women feared hurting the baby and were distressed by their perceived inability to meet the baby's needs (Engqvist et al., 2011). Some women also experienced increased anxiety at the possible effects their illness would have on the infant's development, however, this was somewhat alleviated over time (McGrath et al., 2013). This links to other studies that emphasised the need for practical support so that distress related to caregiving can be mediated and allow for the mother instead to benefit from the developing relationship with the infant (Doucet et al., 2012; Robertson & Lyons, 2003).

Relationships as Supportive to Recovery

Robertson and Lyons (2003) reported that women struggled to confide in others as they did not want to upset or burden their loved ones. They also documented that several women experienced relationship breakdowns due to the stress brought about by PPP (Robertson &

Lyons, 2003). This was also a finding of Engqvist and colleagues (2011); women experienced a sense of guilt for the distress experienced by the family during her illness.

Despite this, relationships were considered a significant facilitator of the recovery process. Personal networks were frequently cited as integral to recovery by providing both practical and emotional support (Forde et al., 2019; Doucet et al., 2012). Wyatt and colleagues (2018) conducted interviews with dyads of women and their significant others. They found that recovery was mirrored in the recapturing of relationship fundamentals and that coming together strengthened relationship values of trust and respect (Wyatt et al., 2018). Women experienced a sense of security and containment from their close relationships which allowed them to focus on getting better (Wyatt et al., 2018). Women also recognised the emotional toll PPP took on their partners and noticed they too needed support so that they could maintain the ability to facilitate the women's recovery needs (Wyatt et al., 2018). Women suggested that partners should be included in therapy following PPP (Wyatt et al., 2018), this sentiment of care being extended to family members was echoed in other studies (Roberts et al., 2018; Heron et al., 2012).

Social relationships were also a significant indicator of recovery. Women felt that actively seeking out relationships and building their networks was helpful to gain both practical advice and emotional support (Heron et al., 2012). Socialising was also considered a marker of recovery as women noticed a movement from isolation toward reengaging with others (Engqvist & Nilsson, 2014). It felt important for women to be able to connect with other mothers (Engqvist & Nilsson, 2014), however, most women spoke of the value of meeting others who had similar experiences (Roberts et al., 2018; Heron et al., 2012; Robertson & Lyons, 2003). This allowed women to normalise their experience and reduce feelings of

isolation that were exacerbated by societal stigma and the expectations placed on mothers (Forde et al., 2019). Women throughout the studies described peer support as integral to overcoming the residual feelings of guilt and shame following PPP (Glover et al., 2014; Heron et al., 2013). In a study by Roberts and colleagues (2018), women reported the desire to share their experiences with others and the “light bulb moments” that are experienced when similar stories are shared. This reassurance and witnessing of the possibility of recovery gave a sense of hope to these women (Roberts et al., 2018); a sentiment also reported by other authors (Jefferies et al., 2021; Doucet et al., 2012; Robertson & Lyons, 2003).

Discussion

This review set out to synthesise qualitative and quantitative research conducted with women who had experienced PPP so as to identify factors involved in promoting recovery. The findings demonstrate a unique element of recovery in PPP and highlight aspects that could be considered in the provision of health care and support to women during this challenging time.

Overview of Findings

Quantitative research on recovery from PPP is limited to one study in this review, weakening conclusions on objective measures of recovery. Burgerhout and colleagues (2017) found that women with PPP attain what is considered the recovery of daily functioning within nine months postpartum. However, functioning is more severely impaired for those women who experience a relapse (Burgerhout et al., 2017) and research in the field has found that the risk of relapse remains high for a number of years following an episode of PPP (Nager et al., 2012). In addition, women with PPP are significantly more likely to have a greater burden of psychological distress and experiences of depression and anxiety compared to population-matched controls (Bergink et al., 2017). Although this evidence has not been supported in

other research it presents an initial cause to consider the importance of focusing on bolstering women's emotional wellbeing in an attempt to mediate lasting psychological difficulties particularly due to the increased risk of subsequent episodes.

Recovery was seen as a complex recovery process through which women had ever-evolving needs. It was considered important that women allowed time for recovery, as expectations that all difficulties would be resolved following the remission of the acute episode led to feelings of disappointment (Heron et al., 2012). Accepting that recovery was a movement between steps forward and setbacks and tolerating the uncertainty of the process were considered beneficial (McGrath et al., 2013). These ideas of non-linearity in recovery are not novel to this study. Research has highlighted dynamic interactions between person, disorder, and environment impact recovery processes (Davidson et al., 2010). The journey towards recovery required women to take an active role (Engqvist & Nilsson, 2014; McGrath et al., 2013). This personal agency has been found to be a core mechanism in driving recovery in individuals with first-episode psychosis (Bjornestad et al., 2016) and relates to the principle of empowerment and personal responsibility in the CHIME framework (Leamy et al., 2011).

In the early stages of recovery, specialised care through an MBU was considered imperative. Research investigating outcomes in MBUs report positive effects on maternal mental health and the mother-infant relationship (Stephenson et al., 2018; Gillham & Wittkowski, 2015). The NICE guidance (2014) recommends that women who experience severe postpartum mental illness should be treated in MBUs, however, it is apparent from the evidence that these recommendations are not being consistently implemented. The findings of the review highlighted women's dissatisfaction with being admitted to general psychiatric units and the detrimental impact this can have on their mental health. This may be due to the disparities in

service provision and insufficient MBU capacity and availability (Hill et al., 2019). England has 19 MBUs with varying bed capacities; there are currently no MBUs in North Wales or Northern Ireland (Maternal Mental Health Alliance, 2019). The discrepancies in provision across the UK is likely to inhibit the needs of mothers and families impacted by perinatal mental health difficulties, specifically PPP, from being met. There is therefore a need to provide healthcare staff in general psychiatry units with specialised training in PPP so they are equipped to provide the best support possible in the case where MBUs are not accessible (Dolman et al., 2013). In addition to MBU provision, post-discharge specialist care was considered vital to recovery. Although current guidance (NICE, 2014) recommends that inpatient care should be followed by integration into community-based mental health services ensuring continuity of care, there are no specific recommendations for women with PPP whose difficulties are likely to be more severe.

The findings of the review identified various strategies as important to recovery. Firstly, noticing positives and appreciating turning points that signified progress was considered beneficial for recovery (McGrath et al., 2013; Heron et al., 2012). This fits with the CHIME (Leamy et al., 2011) personal recovery framework linking to principles of holding onto hope and optimism, particularly the concepts of valuing personal efforts and holding a belief in recovery. Implementing such frameworks may provide a scaffold to support women through recovery. Secondly, strategies that involved creating timelines and narratives of one's experience were considered to facilitate recovery, allowing women to make sense of their experience of PPP and to communicate this with others (Forde et al., 2019), characteristic of an 'integration' recovery style. This is a one type of recovery approach that has been investigated in populations of individuals with psychosis and psychotic disorders. Individuals who 'integrate' tend to acknowledge the significance of their experience and attempt to take

an active approach to manage difficulties (McGlashan et al., 1987; Drayton et al., 1998). This recovery style has been associated with good functional outcomes following psychosis more generally (Zizolfi et al., 2019). Finally, strategies that involved re-establishing a sense of personal identity were considered helpful for recovery (Forde et al., 2019; Engqvist & Nilsson, 2014). It has been found that personal recovery from mental health difficulties in mothers generally is facilitated through the creation of positive and diverse identities that encompass various aspects of self, needs and roles (Hine et al., 2018).

Both mother-infant relationships and family relationships were considered integral to recovery. The findings suggest that the infant plays an important role in recovery; the maintenance of mother-infant union was considered to reduce distress and positive interactions were seen as motivational for recovery (Plunkett et al., 2015; Doucet et al., 2012; Engqvist et al., 2011; Robertson & Lyons, 2003). Allowing the baby to play a role in recovery is also facilitated by MBU availability and so service provision is important in this regard. Undertaking caregiving responsibilities and bonding interactions with the infant were considered to increase the mother's sense of self-efficacy, which is an important element in personal recovery as it represents a meaningful life role and encourages mothers to focus on strengths (Leamy et al., 2011). These interactions are also vital for infant development and long-term health outcomes (Johnson, 2013).

Lastly, family and social support were perceived as central to recovery (Forde et al., 2019; Wyatt et al., 2018; Engqvist et al., 2011, Robertson and Lyons, 2003). Women required both practical and emotional support from those in their personal network (Forde et al., 2019; Doucet et al., 2012) and reassurance and normalising from peers with similar experiences (Roberts et al., 2018; Heron et al., 2012; Robertson & Lyons, 2003). Ruffell and colleagues

(2019) published similar findings for women with postnatal mental health difficulties more broadly and reported that the influence of relationships resulted in greater resilience and confidence. These findings suggest the need to extend support offerings to the personal network of women with PPP so that they too can be supported during this difficult time.

Limitations

The findings of this review should be interpreted in light of the limitations of the studies as well as the process of the review itself. The studies' specific research question did not capture all aspects of recovery and only reported on aspects relevant to factors promoting recovery. It is important to also consider those elements of recovery which were unhelpful as this may provide a more rounded and comprehensive understanding. This may also provide a better basis to suggest recommendations for best practice guidance. In addition, the search terms could have been broadened to capture a greater breadth of the literature, for example including terms related to 'discharge' and 'therapy' or 'intervention'. Reference list searching produced one additional study not captured by the original search terms further suggesting the need for these to be refined. Furthermore, related to study selection, the rate of disagreement between the author and second rater on the initial review of the included studies suggests a need for greater clarity in the inclusion and exclusion criteria for both reliability and replicability.

The included studies were predominantly from the UK, USA, Canada, and Australia and comprised largely of white participants. This raises two potential concerns. Firstly, the findings are Eurocentric and ideas of recovery and factors involved in recovery are exclusively from Western perspectives. Therefore, the findings are centred on one such view

of recovery which is unlikely to apply cross-culturally. Secondly, the lack of diversity in the samples of each of the studies questions the generalisability of the findings.

None of the included studies were considered to be of high quality. Most of the studies did not provide an explicit theoretical framework, therefore limiting the possibility of developing theoretical implications centred on recovery from PPP. There is also a possible responder bias across all of the studies as participants were self-selecting or were approached specifically to partake due to affiliations with the APP experts-by-experience research panel. Those recruited through such means demonstrate an action-oriented approach and therefore this is unlikely to represent all women with PPP, as some may have had more difficult experiences which may get in the way of such involvement or support services are not as accessible to them.

Clinical Implications

In light of the findings as a whole, it is evident that support for women with PPP should include specialist and tailored care plans which consider the potential for long-term difficulties and extend beyond the acute phase of illness. The NHS Long Term Plan (2019) has suggested the extension of perinatal mental health services from one year to two years postpartum. This is a positive step towards continued support for women with PPP due to the long-term nature of difficulties and the risk of subsequent episodes.

For many women, PPP is experienced as a traumatic event indicating the importance of a trauma-informed approach to care. As women are likely to be admitted to inpatient services involuntarily, it is important to consider the impact this might have on their relationship with healthcare professionals and help-seeking. Considering the specific strategies of noticing

positives, creating timelines and re-establishing identity, women may benefit from a Narrative approach to interventions. Narrative therapy allows for the externalising of the problem story, providing distance from feelings of shame that may be linked to the experience and considers multiple stories and perspectives which allows for the identification of a rounded and balanced sense of self (White & Epston, 1990). It also centres the individual as the expert which aims to promote empowerment, an important part of recovery.

In addition, the importance placed on family and personal support highlights the need for both an availability and offering of family interventions but also individual support for partners. Family therapy is already indicated in the clinical guidance (NICE, 2014), however, individual support targeted at partners is not included. Empirical research has found a strong correlation between maternal mental health difficulties postpartum and depression in fathers as well as difficulties for family health and well-being (Goodman, 2003). It is therefore imperative that the mental health needs of partners are also considered in clinical practice, so they are in a better position to support the women with PPP and for overall family functioning.

Future Research

There are several possibilities for future research. Based on the lack of evidence for interventions for PPP, there is potential benefit from research focusing on the efficacy of interventions and care plans tailored to PPP. It is evident from the qualitative literature that women with PPP have specific ideas as to what their needs are and what is useful during recovery and so randomised trials implementing tailored interventions may be able to build our knowledge and influence clinical practice. Such research may be difficult to conduct during acute illness due to the possible ethical dilemmas that arise during severe acute

episodes, however, there is value in conducting intervention-based studies following acute symptom remission as it is evident that difficulties persist.

Future research would also benefit from exploring recovery needs in more diverse populations. All studies included in this review were conducted within Western populations that were predominantly white. This leaves a significant gap in our knowledge of different views and experiences of recovery which may be influenced by the intersectionality of various protected characteristics. Finally, future research could explore healthcare professionals' perspectives of recovery following PPP, particularly those who provide continued care to women following the onset of PPP. Gaining an insight into the changes witnessed by professionals and what is facilitating these changes and steps towards recovery may add to conceptualisations of the recovery process.

Conclusion

The aim of this review was to synthesise the research on recovery from PPP in studies including women affected and identify specific factors involved in recovery. The review shows that recovery is a longitudinal process requiring careful care planning to meet the needs of women, infants, and families at this difficult time. It is apparent that despite clinical guidelines, the recommendations for care are not always met in clinical practice and care provisions. The research included in the review was not representative of multi-cultural experiences of recovery from PPP and so the findings are not entirely generalisable. Future research would benefit from conducting research with more diverse groups of women as well as considering interventions and support plans specific to women with PPP.

Postpartum Psychosis: the role of responsibility beliefs, self-esteem and guilt following an acute episode

Abstract

Background: Postpartum psychosis (PPP) is a severe psychiatric disorder characterised by a sudden onset usually in the first few weeks after childbirth. Symptoms development is rapid and can have significant consequences for the safety of mother and infant. Typically, the acute psychotic episode is relatively short in duration, however, the literature reports that difficulties persist beyond this time. Research on PPP is underdeveloped and so the psychological mechanisms underlying such experiences are yet to be understood. Cognitive and affective factors including responsibility appraisals, guilt and self-esteem have been linked to psychosis and postpartum mental health difficulties more broadly and may apply to PPP.

Objective: This study aimed to establish whether responsibility beliefs, self-esteem and guilt are linked to PPP following illness compared to clinical and non-clinical postpartum control groups and to what extent these cognitive and affective factors impact on wellbeing.

Method: In a cross-sectional design, 67 women who had experienced PPP, postnatal depression (PND) and no postpartum-related mental health difficulties were recruited via online platforms. They completed an online survey which included measures of responsibility, guilt, self-esteem, and wellbeing.

Results: As hypothesised, results indicated that both PPP and clinical controls experienced elevated responsibility appraisals and guilt and lower self-esteem compared to non-clinical controls. There were no significant differences between PPP and clinical controls on these

factors, however, the PPP group experienced significantly poorer wellbeing. Elevated responsibility and guilt and lower self-esteem were related to lower well-being overall, these associations were predicted by group membership only in the case of the PPP group.

Conclusion: Responsibility appraisals, guilt and self-esteem were not found to be specific to women who had experienced PPP, however, all factors were significantly different from controls indicating a potential role for these processes in postpartum mental health. Caution must be taken when interpreting the findings due to the limited sample size. Further research is required to identify psychological mechanisms specific to PPP so that theoretical understanding and clinical supports can be improved.

Introduction

Postpartum Mental Illness

The postpartum period, defined as the 12 months following childbirth, is a time of significant change for women from both a physiological and psychosocial perspective. This time frame is a period of increased vulnerability and risk of the onset or exacerbation of existing mental health difficulties (Meltzet-Brodt et al., 2018). Studies have found that 10-20% of women experience mental ill health during the perinatal period (O'Hara & Wisner, 2013; Centre for Mental Health, 2014). The aetiology of postpartum mental ill health is a dynamic and complex interaction of psychological, biological, social, and environmental factors (Misra et al., 2003). Historical adverse life events and trauma are also more prevalent in women who go on to develop postpartum mental ill health compared with women who experience similar difficulties outside of the postpartum period (Guintivano et al., 2018). Postpartum mental illness can have adverse implications for the mother, infant and the family network. The confidential enquiry into maternal deaths reported suicide as the second leading cause of deaths occurring within a year after childbirth in the United Kingdom (MBRRACE-UK, 2019). Women experiencing postpartum depression and postpartum psychosis are at higher risk of suicidal ideation and suicide attempts (Orsolini et al., 2016). It is therefore imperative that a better understanding is developed of women's mental health experiences during the postpartum period so that adequate support for mother, baby and family welfare can be provided.

Postpartum Psychosis

Postpartum psychosis (PPP) affects between 1 to 2 women in every 1000 births (Vanderkruik et al., 2017) with an estimated 1400 women in the UK being affected each year. It is

considered the most severe mental health problem following childbirth (DiFlorio et al., 2013). The psychiatric nosology of PPP has been disputed and it is not currently classified as a distinct clinical entity. Instead, PPP is considered under the diagnosis of a brief psychotic disorder with the specifier 'with postpartum onset' (APA, 2013). There is substantial research showing a strong link between PPP and bipolar; 20-30% of women with an existing diagnosis of bipolar disorder experience PPP (Wesseloo et al., 2016 Sit, Rothschild & Wisner, 2006). This evidence has been used to support the argument against PPP is less a stand-alone illness but rather a manifestation of pre-existing vulnerability to psychosis that has been triggered by childbirth (McGrath et al., 2013). However, 40% of women affected by PPP have no history of mental health difficulties (Gilden et al., 2020). Despite the diagnostic debate, descriptions of symptom presentation are consistent across the literature. PPP is characterised by a sudden onset and rapid deterioration in mental state with clinical features including elated, dysphoric, or labile mood, disorganised thought processes, loss of insight and marked confusion (Brockington, 2004; Monzon et al., 2014; Meltzer-Brody et al., 2018). Those affected also experience delusions and hallucinations which have a significant impact on the affective state and can lead to significant behavioural disturbances. Research has found that the nature of delusional content has a significant impact on mother-infant interactions and mothers who experience delusions that the infant is ill-fated or not belonged to them exhibit more abusive behaviours toward the baby (Chandra et al., 2006). PPP also poses safety concerns for the mother due to the increased risk of suicide (VanderKruik et al., 2017). It is almost always considered a psychiatric emergency requiring a period of inpatient care (DiFlorio et al., 2013).

Clinical guidelines recommend immediate referral to secondary mental health services for assessment and if hospitalisation is required this should be within a specialist Mother and

Baby Unit (National Institute for Health and Care Excellence [NICE], 2020). Immediate initiation of pharmacological intervention is recommended (NICE, 2020), however, pharmacological treatments specific to this population are limited due to the ethical difficulty of randomizing women during a psychiatric emergency (Osborne, 2018). Bergink and colleagues (2015) developed a treatment algorithm for the sequential administration of benzodiazepine, antipsychotics and lithium which resulted in 80% of women experiencing remission at 9 months postpartum. Beyond pharmacological intervention, there is little PPP-specific treatment guidance for psychological intervention. The NICE guidance recommends considering psychological interventions as described for psychosis more generally which includes cognitive behavioural therapy (CBT) and family intervention (NICE, 2014). To date, there have been no randomised studies investigating psychological interventions specific to or adapted to PPP.

Postpartum Psychosis Prognosis & Recovery

In a pharmacological treatment study, it was found that the median duration of acute illness in PPP was 40 days (Bergink et al., 2015). Remission was considered when women no longer showed symptoms of psychosis, mania, or severe depression for at least one week (Bergink et al., 2015). Despite the relatively short duration of the acute episodes, there is evidence to suggest that difficulties persist beyond this period. Women remain at increased risk of subsequent post-partum and non-postpartum mood disorders (Roberston et al., 2005; Gilden et al., 2020). Robertson and colleagues (2005) found that following the initial episode of PPP, over half of their sample experienced a subsequent non-puerperal affective episode and half of those who had subsequent deliveries experienced another episode of PPP. These rates of subsequent illness were considerably higher than those previously reported for women with bipolar affective disorder in general (Jones & Craddock, 2001). Similarly, Gilden and

colleagues (2020), in a meta-analysis of six studies with a combined total of 645 patients, found that approximately 40% of women had a single isolated episode of PPP leaving a greater proportion to have subsequent non-puerperal psychiatric episodes. The risk of non-puerperal episodes, however, has been found to gradually decrease over time (Nager et al., 2012). In a sample of 78 women who had an episode of PPP, good functional recovery was reported by 74% at 9 months follow-up and 88% had resumed their premorbid vocational responsibilities (Burgerhout et al., 2017). It was reported in this same sample, however, that there was a higher burden of depression and anxiety in those who had experienced PPP when compared with the general population (Burgerhout et al., 2017). Despite a relatively good prognosis, it is apparent that difficulties related to mental and emotional well-being can last beyond the acute phase of illness.

Qualitative reports from women who have experienced PPP describe recovery as a complex and complicated process. A systematic review of qualitative research, which captured the experiences of 103 women from 15 studies concluded that recovery extends beyond acute symptom remission and is lengthy and non-linear in that women moved back and forth between different phases of recovery (Forde et al., 2020). Using a thematic synthesis, the researchers developed a conceptual model of recovery depicting a dynamic movement between unspeakable experiences, loss, and integration of the experience, all of which are influenced by the wider social context of personal relationships, healthcare interactions and societal expectations (Forde et al., 2020) Women with PPP have described periods of apparent recovery being followed by a worsening of mental health often resulting in a return to hospital for further inpatient care (McGrath et al., 2013). Through interviews with women following an episode of PPP, it was reported that there is a need for women to first negotiate a period of immobilisation which often follows discharge from hospital before then

embarking on what was considered a journey towards recovery (McGrath et al., 2013). Similarly, experiences of increased confusion and disorientation have been reported following discharge (Doucet et al., 2011) and feelings of helplessness around caretaking responsibilities has been a trigger for significant distress (Heron et al., 2012).

A study designed in collaboration with experts by experience investigating support needs during recovery from postpartum psychosis described PPP as “a life-changing experience” that posed challenges to women’s sense of identity (Heron et al., 2012). Using a grounded analytic approach, themes were organised around ruminating, rebuilding confidence, gaining professional support, facilitation of family functioning and accepting recovery as a timely process (Heron et al., 2012). Recovery was conceptualised as multi-faceted wherein the reduction in symptoms of psychosis was only the first step followed by personal and social recovery through building self-esteem, developing mothering confidence, and revisiting relationships with others (Heron et al., 2012). The findings also detailed a level of dissatisfaction with the support received (Heron et al., 2012); this is consistent with other research in this area (Howard et al., 2022; Doucet et al., 2011; Robertson & Lyons, 2003).

PPP has been positioned by women with lived experience as distinctly different to other psychiatric diagnoses and combined with their needs as new mothers, require specialised care (Robertson & Lyons, 2002). Research shows significant frustration and anger experienced by women when treatment for PPP is provided in general psychiatric units (Heron et al., 2012). Such non-specialised care has been experienced as detrimental to long-term recovery and separation from the infant has resulted in increased agitation and distress for mothers with PPP (Chandra et al., 2006). As indicated in the clinical guidance, treatment should where possible be facilitated in an MBU (NICE, 2014). A maintained union between mother and

infant allows for professional support with caregiving responsibilities and supports the development of important attachment relationships (Wan et al., 2007). Protecting and promoting bonding and attachment in the weeks directly after childbirth has positive outcomes for infant development (Leadsom et al., 2013). A qualitative interview study by Plunkett and colleagues (2016) reported on women's experiences of the baby having a positive role in recovery. In this sample of 12 women, it was reported that interactions with the infant promoted self-confidence, and emotional connection with the infant motivated women to take an active role in their recovery (Plunkett et al., 2016).

Research has also highlighted the influence of the wider social context on recovery and the experience of illness (Forde et al., 2020; Plunkett et al., 2015; McGrath et al., 2013). Fears of possible negative consequences and perceived societal stigma and expectations have been reported as a barrier to seeking support (Forde et al., 2020). Women have reported the need to resist urges to engage in behaviours they believed to be indicative of illness (McGrath et al., 2013). Motivation to conceal illness was driven by fears of re-hospitalisation, custody loss and perceived stigmatization. Similar findings have been shared in research exploring other mental health difficulties in the postpartum period, where women report reaching a crisis point before seeking help (Megnin-Viggars et al., 2015). This delayed help-seeking behaviour may have consequences for women's experiences of illness, their recovery and the safety of mother and infant. Many qualitative reports described feelings of shame when unable to meet societal expectations as new mothers as well as a sense of powerlessness in relation to the mental health and care systems (McGrath et al, 2013; Plunkett et al., 2015). Despite substantial reports that professional support is essential to recovery and overcoming the challenges posed by postpartum mental health difficulties, accessing this is not always straightforward.

A Theoretical Model of Psychosis

At present, there is no psychological model or theoretical framework specific to postpartum psychosis. Therefore, theories of psychosis more generally have been drawn on to inform the current study. One of the most widely used and empirically supported is the cognitive model of psychosis. The cognitive model incorporates the idea that symptomatology exists on a continuum from no psychotic experiences to experiences meeting diagnostic classification (Johns & van Os, 2001). The model proposes the central influence on the distress experienced is the negative interpretation or appraisal of anomalous experiences such as delusions and hallucinations (Garety et al., 2001). Maladaptive appraisals are characterised by threat-based perceptions of symptoms as being externally caused and personally significant (Garety et al., 2007). These threat-based appraisals are thought to be shaped by reasoning, attentional and attributional biases (Garety & Freeman, 2013). One such example is the jumping to conclusions (JTC) bias. Research has consistently found that individuals with a diagnosis of psychosis typically make decisions or accept hypotheses without considering all (Dudley et al., 2016). Researchers have concluded that this tendency to JTC contributes to positive symptoms of psychosis and the level of distress experienced (Peters and Garety, 2006). The JTC bias has been reported in individuals with acute psychosis as well as individuals whose symptoms have remitted (Peters & Garety, 2006). Distress, as a result of the presence of hallucinations, has also been linked to negative appraisals, particularly appraisals of malevolence, over and above the content or form of the hallucinations (Birchwood et al., 2004). The appraisals given to symptoms of psychosis have a direct impact on affect and emotional processes (Garety et al., 2001; Birchwood, 2003). Positive symptoms of psychosis are associated with negative evaluations of self, resulting in low self-esteem (Smith et al., 2006; Barrowclough et al., 2003). In recent years, there have been meaningful findings

contributing to psychological models and interventions for psychosis, however, this has not yet been extended to research on PPP. Research has drawn attention to the role of cognitive and emotional processes in psychosis including responsibility beliefs, self-esteem, and guilt which will now be reviewed.

Responsibility Beliefs

In recent years, research has shown that inflated responsibility beliefs are likely to be transdiagnostic (Tolin et al., 2006; Luzon et al., 2009; Pugh et al., 2018). Originally linked to cognitive models of anxiety, particularly those describing obsessive-compulsive disorder (OCD) (Salkovskis, 1985; Salkovskis et al., 1996), it was posited that interpretations of intrusive thoughts linked to personal responsibility for potentially harmful or dangerous consequences contributed to and maintained symptomatology (Salkovskis, 1985). Such appraisals and attitudes were thought to influence behaviours through which individuals attempt to reduce the sense of responsibility and possibilities of harm, resulting in increased threat perception and the maintenance of intrusions (Salkovskis, 1985; Salkovskis et al., 1996). . These inflated responsibility appraisals have also been found in individuals who have had an experience of psychosis. Luzon and colleagues (2009) found that individuals in both acute and stable periods of illness had significantly higher responsibility appraisals compared to both non-clinical and anxiety disorder controls. This study suggested that inflated responsibility beliefs may be both a vulnerability factor in psychosis as well as being exacerbated as a state factor in acute periods (Luzon et al., 2009). This is in line with the cognitive model of psychosis which postulate that maladaptive appraisals, which may include responsibility interpretation, play a central role in the maintenance and severity of positive symptoms (Garety et al., 2001). Subsequent research found responsibility beliefs to be a

prominent feature in individuals who presented with persecutory delusions (Pugh et al., 2018) further evidencing their presence across many different diagnoses.

Exploring responsibility beliefs in PPP is thought to be relevant for a number of reasons.

Firstly, and as mentioned previously, responsibility beliefs are transdiagnostic and have been found to be inflated in psychosis more broadly. The symptom profile and diagnostic features of PPP, with the exception of time of onset, are the same as that of other psychotic disorders and so clinically there are no specific differences that would question their relevance in PPP also. Secondly, a role for inflated responsibility appraisals in PPP is thought to be relevant as women's inability to undertake mothering responsibilities, due the disruption caused by psychotic symptoms, has been reported to contributed to increased distress. Women have reported to experience significant distress when they cannot fulfil the caring role they had expected to undertake (Forde et al., 2020). In this instance, their interpretations of this and the attribution of personal responsibility may be relevant and so contributes to our hypothesised presence in PPP. Thirdly, existing research investigating responsibility interpretations in the perinatal period more broadly has found that women in the postpartum period experience significantly higher responsibility appraisals compared to women in the antenatal period and non-childbearing women (Barrett et al., 2016). Increased responsibility in this study was linked specifically to situations concerning harm to the baby (Barrett et al., 2016). This has influenced the decision to explore responsibility beliefs in the current study as the most common intrusions reported in PPP are related to the infant (Jefferies et al., 2021). It is possibly therefore that responsibility appraisals have a role in the maintenance of such intrusions in PPP and as a consequence the distress experienced. Finally, with limited quantitative research in this area, qualitative research must be drawn on to inform psychological constructs of relevance in this population. Qualitative findings have reported

that women experience a sense of personal responsibility regarding their illness and question whether they have had a role in illness onset (Forde et al., 2020). Women are also reported to believe they have a responsibility to prevent remittance or a re-experiencing of PPP and consequently choose to not have subsequent pregnancies (Forde et al., 2020). This suggests that responsibility appraisals are playing a role in decision-making processes and behaviours in PPP.

The current study aims to explore responsibility beliefs beyond the acute episode of PPP. This is supported by the findings of Luzon and colleagues (2009) as inflated responsibility appraisals were present during both acute and stable periods. Additionally, at a time where there is increased responsibility by virtue of having a baby and the disruptions that may be caused to undertaking these responsibilities, it is possibly that related appraisals will be impacted and so gives relevance to exploring this construct in women who have had PPP in the recent past as mothering and caring responsibilities will still be present.

Guilt

In addition to responsibility beliefs, this study will explore the role of guilt in PPP. The emotional experience of guilt has been suggested to have an evolutionary origin and is related to motivation and harm avoidance (Gilbert, 1998, Gilbert 2002). Some studies suggest that interpretations of responsibility for negative outcomes give rise to guilt (Taylor, 1996; Ferguson et al., 1997) whilst others have argued that guilt evokes perceptions of responsibility (Berndsen & Manstead, 2007; Baumeister et al., 1994). Although the directionality of the relationship between these two constructs is disputed it has been suggested that those who have greater guilt sensitivity have a greater propensity for responsibility for harm appraisals when compared to other appraisals categories (Melli et al.,

2017). The temporal dynamics of guilt as it relates to responsibility is beyond the scope of the current research as both will be measured at one single time point, however, better understanding their presence in PPP may inform future research as well as clinical interventions. Additionally, guilt has been found to be elevated in individuals who experience psychosis, particularly state guilt which has been correlated with both positive and negative symptomatology (Britmann et al., 2012). This supports the measure of guilt in the current study, in a population who have experienced psychosis, but also supports the focus on state guilt.

Defined as a moral and self-conscious emotion related to comparing oneself to important standards (Tangney & Fischer, 1995), the concept of guilt has also been researched extensively in the context of parenthood and more specifically motherhood. Western ideologies promote the expectation that women transition into parenthood with a sense of joy and happiness (Dunford & Granger, 2017). When these expectations are perceived as not being met and where women experience this transition as challenging, particularly due to mental health difficulties, experiences of guilt and shame are frequently reported (Caldwell et al., 2021). In the context of PPP, due to the disruptive nature and severity of symptomatology, women are often unable to participate fully in caring for their infants (McGrath et al., 2013). Women with PPP have reported feelings of guilt in relation to perceived unmet societal expectations and not fulfilling their role as mothers (McGrath et al., 2013; Robertson & Lyons, 2003) as well as in relation to experiences of negative thoughts and intrusions about harming or not wanting the infant (Engqvist & Nilsson, 2013). Guilt has also been reported in the context of bonding, relationship building and appropriately responding to an infant's cues (Engqvist et al., 2011; Plunkett et al., 2015). In a qualitative study with ten women, the experience of guilt was mentioned consistently across all

interviews (Robertson & Lyons, 2003). Qualitative reports document women's feelings of guilt related to their infants first being spent in psychiatric units, and they expressed concerns about the potential impact this might have on the infant's development and emotional well-being (Robertson & Lyons, 2003). Moreover, guilt has been reported in the context of other relationships, the burden their illness put on others and the level of support they required (Robertson & Lyons, 2003; Heron et al. 2012). Experiences of guilt because of unmet expectations, particularly related to mothering and relationship roles for women with PPP can result in self-stigmatisation. The internalising of perceived failures to meet expectations can persist for many years beyond acute illness (Forde et al., 2020). Internalising stigma in mental health research has been linked to shame, guilt and reduced self-esteem (Vass et al., 2015), however, this has not been measured quantitatively in PPP populations.

The guilt reported qualitatively in PPP, guilt as an experience more proudly in motherhood and the propensity for individuals with psychosis to experience greater state guilt give reason to explore this construct in the current study. Guilt has not yet been measured quantitatively in the target population and understanding this more may support with the types of supports, interventions and approaches that are offered to women following PPP.

Self-Esteem

The third psychological construct of interest in the current study is that of self-esteem. Self-esteem encompasses appraisals of self-worth as well as anticipation of evaluation from others (Kernis et al., 1989; Kernis, 2005) and can be negatively impacted by experiences of serious mental illness (Shapira et al., 1999; Young & Ensing, 1999). Fluctuations in self-esteem have been implicated in the development and maintenance of symptomatology in individuals with psychosis, (Freeman et al., 2002). Cognitive models of psychosis suggest that self-esteem can

be impacted on by an individual's interpretation of their symptoms and events surrounding an illness experience (Garety et al., 2001). It has also been found that lower self-esteem and greater negative self-evaluation predicts severity of delusions and more negative content of hallucinations (Smith et al., 2006). Qualitative reports from women who have experienced PPP describe delusions and hallucinations often with highly negative content related to the infant (Glover et al., 2014). Women have described a significant impact on their self-esteem in the aftermath of these experiences affecting their confidence in the ability to fulfil mothering duties (Glover et al., 2014). Self-esteem has therefore been identified as a construct of interest for the present study supported by a theoretical framework in terms of its role in psychosis more generally but also in response to qualitative reports from women with PPP.

In addition to the context of psychosis, low self-esteem has frequently been reported in the context of stigmatization and self-stigmatization in those who experience mental ill health more generally (Link et al., 2001). In 179 individuals with severe and enduring mental illnesses, it was found that self-esteem mediated the relationship between internalized stigma and hope for their future which was predictive of quality of life (Mashiach-Eizenberg et al., 2013). This study indicated the role of self-esteem in individuals' experiences of themselves in relation to the mental illness they were experiencing. It has been evidenced that PPP can challenge women's sense of self and personal identity and when the latter has been experienced as lost, there are implications for self-esteem and self-worth (Forde et al., 2020). Women frequently report ideas around the failure to meet societal, family and personal expectations of motherhood and caregiving (Forde et al., 2020). These incongruencies with how they envisioned themselves in the mothering role have been reported to impact self-efficacy and self-esteem, particularly in the context of mothering independently on discharge

from hospital (Heron et al., 2012). It is evident that self-esteem is therefore impacted beyond the acute phase of illness and in line with the non-linear process of recovery, fluctuations in self-esteem may occur during this time. It has been reported however that growing confidence, self-efficacy and self-esteem have been recognised by women as markers of recovery (Plunkett et al., 2015). Furthermore, such improvements in self-esteem are related to spending more time with the infant and taking over more caregiving responsibility (Plunkett et al., 2015). This suggests a possible important role of self-esteem following an experience of PPP not only for maternal mental wellbeing but also for relationship building with the infant. In addition to its theoretical basis in cognitive models for psychosis, self-esteem has been identified as an important factor in mental health difficulties more widely, particularly as it pertains to stigma. It is known that the postpartum period is a time where women are often held to societal standards, and not meeting these often comes with certain stigmatisation. It has been evidenced that the implications of such stigma include a lack of help-seeking and poor treatment uptake (Givens et al., 2007). . In relation to psychological constructs previously mentioned, there is no known research investigating self-esteem in relation to responsibility beliefs or guilt specifically. However, it has been found that lower self-esteem correlates with greater severity of symptoms in OCD (Toledano et al., 2020) and it is well established that responsibility beliefs play an instrumental role in the development and maintenance of OCD symptomatology suggesting a potential link between these constructs.

The cognitive and emotional factors described above have been investigated in those who experience psychosis both in acute and remittance periods, however, there is no known research focused specifically on postpartum psychosis. Women who have experienced an episode of PPP are at an increased likelihood of further postpartum and non-postpartum

affective episodes, however, little is known about cognitive or emotional processes that may be specific to this group. Despite the relatively short nature of acute psychosis in PPP, there are both quantitative and qualitative studies evidencing that difficulties can remain beyond the acute phase, however, cognitive, and emotional processes related to such difficulties have not been measured.

The Current Study

This study aimed to investigate the role of responsibility beliefs, self-esteem and guilt in women following an acute episode of PPP. The study employed a quantitative methodology recruiting three groups: women who had experienced PPP, a clinical control group of women who had experienced postnatal depression and a non-clinical control group of women in the postpartum period who did not identify as having experienced a postpartum-related mental health difficulty. The purpose of including a clinical control group was to determine the specificity of the link between PPP and the target cognitive and emotional factors from postpartum difficulties more broadly. A second aim was to examine the extent to which responsibility beliefs, guilt and self-esteem were related to a lower sense of wellbeing in women in the postpartum period and whether group membership predicts this association. The findings of this study will contribute towards an increased understanding of relevant cognitive and emotional processes related to PPP, with the hope of informing support needs and therapeutic provision at this time. Based on the empirical evidence previously discussed the following hypotheses were formulated:

- 1) Women who have had an experience of PPP will experience higher responsibility appraisals, higher measures of guilt and lower self-esteem when compared to clinical and non-clinical controls.

- 2) Women who have higher responsibility beliefs, higher guilt and lower self-esteem will have poorer well-being.
- 3) The relationship between responsibility beliefs, guilt and self-esteem will be predicted by group.

Methods

Design

This study used a quantitative cross-sectional, between-subjects design, and was conducted using an online survey.

Ethics

Ethical approval was granted by the Royal Holloway University of London Ethics Committee (REC ID: 2707). Professional guidelines were adhered to throughout the study as laid out by the British Psychological Society (2014) and Health and Care Professionals Council (2016) for conduct and ethics as well as those ethical guidelines set out for internet-mediated research (BPS, 2013). A risk management protocol was developed which outlined steps to take should risk concerns emerge. Informed consent was obtained from each participant at the beginning of the online questionnaire. Participants were informed of the confidentiality agreement and their right to withdraw. The primary researcher's and project supervisor's contact details were shared so that participants could ask questions, share concerns or request their data to be removed from the study. The information sheet contained information about the potential emotive nature of the questionnaires included in the study as so to forewarn participants who may be particularly vulnerable due to recent difficult experiences regarding their mental health. Screening questions were also included at the beginning of the survey asking participants to confirm they were over 18 years of age and not currently receiving

inpatient care or experiencing acute symptoms of psychosis. The questionnaire battery was also piloted with two women who had previously experienced PPP for feedback on content and possible challenges participation might pose.

Participants

Participants were recruited through advertisements on online forums and social media platforms between December 2021 and March 2022 using both convenience and snowball sampling. Advocacy and support groups for perinatal mental health as well as more general parenting and postpartum groups were targeted for recruitment. National organisations and charities were also contacted via email with information about the study and were invited to share it on their platforms. Action on Postpartum Psychosis (APPP), a national charity for women with PPP that provide support and facilitate PPP research, agreed to share the details of the study with their consortium of experts by experience as well as through their newsletter. Several organisations contacted to share the study were unable to do so due to policies regarding non-formalised research affiliations and the volume of requests they receive.

The inclusion criteria required women to be 1) over 18 years of age, 2) proficient in English reading and comprehension (as regrettably, it was not possible to provide alternative language versions of the survey), 3) had given birth in the previous 24 months and 4) who perceived themselves to have received a diagnosis of postpartum-psychosis or postpartum-depression specific to the period following the birth of their most recent child. Diagnoses were based on self-reports and no formal retrospective assessment of symptoms was conducted. Women who had given birth in the same time frame but who had not experienced

a postpartum-related mental health difficulty during following their most recent pregnancy were also invited to participate to act as a non-clinical control group.

Participants were excluded if they were currently receiving inpatient care for postpartum mental health difficulties as the aim of the study is focused on the period following acute illness. Participants were also excluded if they had only experienced an affective illness in relation to or as a result of alcohol or substance misuse.

Power Analysis

A-priori sample size was calculated based on the analytic strategy of analysis of variance to test the primary research hypotheses. No quantitative studies examining the constructs specific to the current study in the target population yet exist. To estimate effect size, it was necessary to draw on studies with comparable methodologies and comparable constructs of interest. A study (Barrett et al., 2016) investigating responsibility beliefs in antenatal, postpartum and non-childbearing women using a comparable methodology found a medium effect size whilst a study (Burgerhout et al., 2017) comparing women with PPP to those in the general population on measures of psychological distress found a small effect. Therefore, a conservative estimation was made of a small to medium effect size. Cohen's power tables were reviewed (Cohen, 1992) and a power analysis calculated via G*Power indicated, for a desired medium effect size (Cohen's $d=0.3$), required a total sample size of 158 ($1-\beta = 0.8$, $p < 0.5$) or 53 participants per group.

Measures

Demographic and obstetric information

Demographic information was collected including age, ethnicity, employment status, marital status and lifetime history of mental health difficulties. Obstetric information including the number of children, time since giving birth, previous experiences of pregnancy and lifetime history of perinatal mental health difficulties were also included on the demographic questionnaire. Women were asked to self-report on postpartum mental health experience following the most recent childbirth, whether a professional diagnosis was obtained and from whom as well as support received and details regarding hospitalisation. Self-reports of PPP were made more reliable by the indication of hospitalisation.

Responsibility Attitudes Scale (RAS, Salkovskis et al., 2000)

The RAS is a 26-item self-report measure designed to assess general attitudes and beliefs related to responsibility and harm concerns. Each item is rated on a 7-point scale from 'totally agree' to 'totally disagree'. Total scores range from 26 to 182 with higher scores indicating higher responsibility beliefs. The RAS has high reported internal consistency (Cronbach's alpha, $\alpha=0.92$) and test-retest reliability ($r=0.94$) (Salkovskis et al., 2000). In the current study, Cronbach's alpha for the scale was 0.96, indicating a high level of internal consistency.

Rosenberg Self-Esteem Scale (RSES, Rosenberg, 1965)

The RSES is a 10-item questionnaire, which measures trait self-esteem. Items are rated from 'strongly agree' to 'strongly disagree'. Total scores range from 10 to 40, with higher scores indicating higher levels of self-esteem. The RSES is one of the most widely used measures of self-esteem (Sinclair et al., 2010) and addresses two facets of self-esteem, self-competence and self-liking. The RSE demonstrates good internal consistency with a Guttman scale

coefficient of reproducibility of .92 and test-retest reliability over time shows correlations of .85 and .88 indicating stability (Sinclair et al., 2010). The RSE has also been found to have concurrent, predictive and construct validity as it correlates significantly with other measures of self-esteem and correlates in the predicted direction with measures of depression and anxiety (Sinclair et al., 2010). In the current study, Cronbach's alpha for the scale was 0.52, indicating an acceptable level of reliability due to the small size of the scale.

The Guilt Inventory – State Guilt Subscale (GI; Kugler & Jones, 1992; Jones et al., 2000)

The Guilt Inventory (GI) is a 45-item self-report questionnaire partitioning guilt-related responses into three domains including trait guilt, state guilt and moral standards. For the purpose of this study, only the state guilt subscale will be used as this examines current affect as it relates to guilt. Each item is rated on a 5-point Likert scale, anchored in verbal descriptions of (1) strongly agree, (2) agree, (3) undecided, (4) disagree and (5) strongly disagree. Scores are coded such that higher numbers reflect greater guilt. Studies have shown good internal consistency with alpha scores of 0.91 (Cougler et al., 2011) and 0.88 (Barr, 2010). The scale is strongly related to alternative scales within the same domain demonstrating its validity (Kugler & Jones, 1992). In the current study, Cronbach's alpha for the scale was 0.91, indicating a high level of internal consistency.

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS, Tennant et al., 2007)

The WEMWBS is a 14-item self-report measure with five response categories summed to provide a single score. The items are all worded positively and cover both feeling and functioning aspects of mental well-being, thereby making the concept more accessible. The scale has been widely used for monitoring symptomatology, evaluating projects and programmes and investigating the determinants of mental well-being. The scale has been used frequently

in perinatal (Beckham et al., 2013; Mannion & Slade, 2014; Farewell et al., 2020) and captures affective, cognitive, and functional aspects of well-being. A Cronbach's alpha score of 0.89 in a student sample and 0.91 in a population sample have been reported (Tennant et al., 2007; Stewart-Brown et al., 2011). It has also been found to have a high correlation with other mental health and well-being scales. There was good test-retest reliability at one week (0.83) and social desirability bias was lower or similar to that of other comparable scales (Stewart-Brown et al., 2011). In the current study, Cronbach's alpha for the scale was 0.96, indicating a high level of internal consistency.

Procedure

The demographic questionnaire and all measures were compiled into a single survey using Qualtrics a digital software platform, compatible with mobile phone devices and personal computers. A link and QR code was shared across social media platforms and advocacy group webpages through which women who met the inclusion criteria could access the survey. On the landing page, participants were met with the participant information sheet (Appendix C), after which women could choose to consent to participate in the study (Appendix D). In the case where participants did not meet the inclusion criteria or on completion of all measures participants were provided with a debrief sheet (Appendix X) which provided more information about the study and plans for dissemination. Contact details for both the primary researcher and supervising research were provided at the beginning and end of the survey so that women could ask any questions regarding the study, voice any concerns or seek further details about the study. Participants were given the option to share their email addresses if they were interested in being sent the results of the study. Participants were provided with information on support services and contacts for urgent support.

Piloting

The test battery was piloted with one woman who had previously had an experience of PPP and three women in the postpartum period without a mental health difficulty. This allowed for troubleshooting and obtaining feedback on survey length, presentation, user-friendliness and ease of completion. The average completion time of the survey in the pilot group was 18 minutes. Recommended amendments included spelling and grammar errors, the formatting of measures, and information on progress and measures remaining. One participant suggested that the information regarding support and crisis contacts should be on a separate landing page so that they could be screen-captured by participants if required. Amendments were made based on this feedback. Recommendations were also made to shorten the participant information sheet. As the information sheet had to meet pre-defined criteria as set out by the ethics committee, it was not possible to omit any of the information included.

Analysis

Treatment of Data

Statistical analyses were carried out using the Statistical Package for the Social Sciences (SPSS; version 25). A statistician was consulted on the statistical analysis to ensure errors were not committed in the interpretation of data and to support the identification of limitations in the analysis. All data was downloaded from Qualtrics into SPSS and screened for errors, missing data, and to check that variables were within expected ranges.

Questionnaire responses were scored in line with the respective guidance and reverse scoring was applied on RSE and GI items where appropriate. Cronbach's alpha was calculated for each measure to assess internal consistency and reliability.

Descriptive statistics were computed for categorical data, including demographic, obstetric and clinical variables. Comparisons were made between the groups using chi-squared tests. Fisher's exact tests were used when the cell counts for categorical variables were less than 5 (Field, 2018). T-tests were used to examine group differences on clinical variables.

Data for continuous variables was screened for normality and outliers were assessed. For both ANOVA and regression analysis (required for hypothesis testing) it is assumed that residuals are normally distributed (Field, 2018). As recommended, the distributions of residuals for each of the continuous variables (RAS, RSE, GI & WEMWBS) were examined by group (PPP, PND, Control) (Field, 2018). The first step was to compute the residuals; the value of the residual equates to the original value of the data point minus the predicted value of the data point. Histograms and Q-Q plots of residuals for each variable were inspected visually and assessed by Shapiro-Wilk's tests. There was a normal distribution for scores on the RAS ($W=0.048$, $p=0.962$). Shapiro-Wilks tests showed residual scores for RSE ($W=0.947$, $p=0.007$), GI ($W=0.969$, $p=0.094$) and WEMWBS ($W=0.911$, $p<0.001$) deviated significantly from a normal distribution.

Outliers or data points deviating from the mean by three standard deviations or more (Field, 2018) were identified using boxplots. Outliers were checked for each variable in each group. There were no outliers on the RAS in any of the three groups. On the RSE measure, there was one outlier in the PND group three standard deviations below the mean and one outlier above the mean in the control group. For the GI measure, there was one outlier in both the PPP and PND groups and for the WEMWBS there were two outliers in both PPP and PND groups. The outliers were not removed as there was no pattern or evidence to suggest that these data points did not belong to the datasets (Field, 2018).

To remedy non-normal distribution and extreme outliers in the dataset square root transformations were computed for the relevant datasets. These transformations failed to achieve normality and therefore bootstrapping was applied to allow for analysis using parametric tests. Bootstrapping is considered a robust method of analysis which can allow for both non-normal distributions and outliers (Field, 2018). Bootstrapping is a procedure used to resample a data set creating many simulated samples and is frequently used when sample sizes are small, or studies are underpowered. In this study, bootstrapping was employed using the recommended number of 1,000 bootstrapped samples. Confidence intervals were set at 95% with statistical significance set at the $p < 0.05$ level.

To investigate group differences on RAS, RSE and GI measures, a one-way analysis of variance (ANOVA) was conducted, and both p-values and Bootstrapped 95% confidence intervals were reported. Post-hoc tests were conducted to identify which group means differed from one another and Holm-Bonferroni corrections (Holm, 1979) were used for multiple comparisons and to control for the family-wise error rate (Aickin & Gensler, 1996). The Holm-Bonferroni correction is considered uniformly more powerful than the Bonferroni correction, p-values are ordered from smallest to greatest and the smallest p-value is multiplied by the number of comparisons, the next p-value is multiplied by the number of comparisons minus one and so on, this reduces the risk of rejecting a false null hypothesis (Aicken & Genslet, 1996).

A standard multiple regression with bootstrapping was conducted to investigate the relationship between RAS, RSE and GI with wellbeing across groups. In the first instance the groups were collapsed and the variables relationship to well-being was examined to

understand whether a relationship existed independent of group. Subsequently, to determine whether these differences were owing to individual differences or group differences, the categorical group variable was also entered into the regression. To do this two the group variable was transformed using dummy codes, as the group variable had three levels two dummy variables were created for PPP and PND groups. The control group was the category to which the other categories were compared to identify the effect of being in one group over the other on the dependent variable (WEMWBS) (Field, 2018).

Results

Descriptive Statistics

The study information sheet was accessed by 115 potential participants. Eighty-nine consented to participate, however, only 74 responded to the screening items. One participant indicated they were currently receiving inpatient care and so were unable to proceed to the questionnaires. Two participants completed less than 50% of the test battery and four participants responded only to the demographic items and were subsequently excluded. The total sample, therefore, consisted of 67 participants. There was no missing data on the measures included, this may have been due to the survey settings prompting participants to revisit any missed responses before proceeding.

Participant demographic information is presented in Table 4. Participants were divided by the researcher into PPP, PND and control groups based on the information provided by the regarding postpartum mental health difficulties related to the most recent child-birth experience. The majority of the sample was White British, married or in civil partnerships and employed with an average age of 33.8 years. Over half of the sample reported no

religious affiliation. No significant differences were found between the groups in age, ethnicity, occupation, relationship status or religious beliefs.

Table 4

Demographic Information

	PPP (n=20)	PND (n=26)	Control (n=21)
Age, years			
Mean (SD)	35 (3.87)	32.6 (4.7)	33.9 (4.1)
Range	27-43	24-43	27-42
Ethnicity			
○ White British	N=13	N=14	N=17
○ Other White	N=4	N=7	N=2
○ Mixed Ethnicity	N=1		N=1
○ Black African/ Caribbean	N=1	N=2	
○ Indian			
○ Other Ethnicity	N=1		
		N=3	N=1
Marital Status			
○ Single	N=1	N=1	N=2
○ Co-habiting	N=2	N=5	N=4
○ Married/Civil Partnership	N=17	N=19	N=15

Employment Status			
○ Full-time	N=4	N=12	N=13
○ Part-time	N=10	N=9	N=6
○ Homemaker	N=4	N=4	N=1
○ Self-employed	N=2	N=1	N=1
Religion			
○ Christian	N=7	N=9	N=10
○ No Religion	N=12	N=14	N=11
○ Prefer not to say	N=1	N=3	

Obstetric and clinical information is presented in Table 5. Over 60% of the sample were primiparous and the average time since childbirth across the sample was 13 months. There were no significant differences in the number of children participants had between groups. Sixty-five per cent of the total sample reported a lifetime history of a mental health difficulty independent of the perinatal period; the most common difficulties reported included depression and anxiety. Women in the PPP and PND groups reported a greater incidence of lifetime mental health difficulties than the non-clinical group. A chi-square test showed a significant group difference on lifetime history of mental health difficulties ($X^2(2)=7.3$, $p=0.03$). Participants in PPP and PND groups combined had a significantly greater incidence of lifetime mental health difficulties when compared to the control group ($X^2(1)=7.06$, $p=0.008$).

Over three-quarters of the PPP groups stated previous mental health difficulties, namely depression ($n=6$), anxiety ($n=7$) and bipolar disorder ($n=3$). The presence of women with pre-

existing diagnoses of bipolar disorder is not unusual. Bipolar disorder is frequently associated with PPP, and PPP has been considered an overt presentation of bipolar disorder which is brought about by the hormonal shifts following childbirth (Sit et al., 2006). Similarly, in the PND group, almost three-quarters of participants stated pre-existing mental health difficulties, predominantly anxiety (n=10) and depression (n=8) as well as one case of PTSD. No participants reported a previous experience of obsessive-compulsive disorder, this may be due to a number of reasons, including but not limited to, the targeted recruitment from support groups specific to PPP and PND, and possibly if OCD or OCD-like traits were secondary, individuals may not have reported this.

Table 5

Obstetric and Clinical Information

	PPP (n=20)	PND (n=26)	Control (n=21)
Time since birth, months (SD)	16.1 (6.95)	10.3 (6.8)	13.3 (7.16)
Time since illness onset Mean (SD)	16.1 (6.95)	9.88 (6.7)	-
Primiparous	N=13	N=17	N=11
Total n (%)	(65%)	(65%)	(52%)
No. of children	1.5	1.46	1.48
	1-5	1-3	1-2
Pregnant	N=0	N=3	N=3
Professional diagnosis for most recent episode	N=20	N=15	-
○ GP	N=4	N=9	

○ Psychiatrist	N=15	N=1	
○ Psychologist		N=3	
○ Other	N=1	N=2	
Hospital admission, Total N (%)	N=14 (70%)	N=1 (3.8%)	-
○ General Unit	N=8	N=1	-
○ MBU	N=6		-
Length of admission			-
Mean, days	31	1	
Previous non-perinatal mental health difficulty (%)	N=16 (80%)	N=19 (73%)	N=9 (43%)
○ Depression	N=6	N=8	N=3
○ Anxiety	N=7	N=10	N=5
○ Bipolar	N=3	-	
○ PTSD	-	N=1	
○ Eating Disorder			N=1

Seventy per cent of the PPP group received inpatient care with an average admission of 31 days. Only one participant in the PND group reported admission to hospital for one day. All participants in the PPP group reported having received a professional diagnosis and over 50% of the PND group received a diagnosis from a healthcare professional. All women in the PPP and PND groups reported symptoms in line with diagnostic criteria as outlined by the DSM-V. An independent t-test was used to compare the time since illness onset in the PPP and

PND groups: the PPP group reported a significantly longer time since illness onset compared to the PND group ($t(44)=3.05, p=0.004$).

Mean scores for the groups on all questionnaires are presented in Table 6. Responsibility beliefs in both PPP and PND groups were comparable to normative means reported for clinical groups with obsessive-compulsive disorder ($M=4.69, SD=1.01$) which were significantly higher than anxiety controls and non-clinical controls (Salkovskis et al., 2000) and control group scores were comparative to scores obtained in a non-clinical postpartum sample ($M=113$) (Barrett, Wroe & Challacombe, 2016). RSE scores for the PND group and control group were considered to be within the normal range, whereas mean PPP scores indicate low self-esteem (Rosenberg, 1965). PPP ($M=36.35, SD=10.10$) and PND ($M=33.04, SD=5.57$) scores on the state guilt subscale of the GI were greater than normative values in a female population ($M=26.05, SD=7.17$) (Jones et al., 2000), indicating greater experiences of guilt. Interpretation guidelines of the WEMWBS suggest scores below 41 to be indicative of clinically significant difficulties, both PPP ($M=29.75, SD=12.48$) and PND ($M=37.85, SD=11.13$) groups scored below this cut-off.

Table 6

Questionnaire Descriptive Data

	PPP (n=20)	PND (n=26)	Control (n=21)
	Mean (SD)		
Responsibility Attitudes Scale (RAS)			
<i>Higher scores = stronger responsibility beliefs</i>	5.1 (1.2)	4.65 (0.92)	4.05 (1.01)
Rosenberg Self-Esteem Questionnaire (RSE)	14.35 (3.51)	15.38 (2.45)	17.33 (2.33)
<i>Higher scores = greater self-esteem</i>			
Guilt Inventory (GI)	36.35 (10.1)	33.04 (5.57)	26.24 (7.7)
<i>higher scores = greater experience of guilt</i>			
Warwick Edinburgh Mental Wellbeing Scale (WEMWBS)	29.75 (12.48)	37.85 (11.13)	48.81 (6.4)
<i>Higher scores = better wellbeing</i>			

Hypothesis Testing

Hypothesis 1: Participants who have had an experience of PPP will have higher responsibility appraisals, greater guilt and lower self-esteem when compared to clinical (PND) and non-clinical controls.

A one-way ANOVA with bootstrapping for 1,000 samples at the 95% confidence interval was run to investigate whether participants with PPP differed from clinical (PND) and non-

clinical controls on RAS, RSE and GI measures. As expected, the three groups differed significantly on responsibility attitudes ($F(2,64)=5.297$, $p=0.007$), self-esteem ($F(2,64)=6.17$, $p=0.004$) and guilt ($F(2,64)=9.05$, $p<0.001$). The bias-corrected and accelerated (BCa) bootstrap confidence intervals are presented in Table 7, none of which cross zero indicating a reliable effect.

Table 7

BCa 95% Confidence Intervals for ANOVA

	PPP	PND	Control
	Lower, Upper		
RAS	4.53, 5.64	4.29, 5.03	3.58, 4.45
RSE	12.79, 15.9	14.47, 16.31	16.5, 18.4
GI	31.86, 40.4	30.85, 35.15	23.04, 29.56

To explore the differences in means as identified in the ANOVA, Fisher’s protected t-tests were used to make comparisons between the individual groups on each of the target variables. Bootstrap results do not provide a t-value and so this was calculated by dividing the mean difference by the standard error for each of the tests (Jung et al., 2019).

Independent samples t-test showed that the PPP group ($t(39)=3.07$, $p=0.009$, BCa 95% CI [0.35, 1.75]) and PND group ($t(45)=-2.14$, $p=0.043$, BCa [0.91, 1.22]) scored significantly higher than the control group on the RAS, indicating greater responsibility beliefs. The difference between the PND group and the control group was no longer significant ($p=0.08$) when the Holm-Bonferroni correction to control for multiple comparisons was applied. The

difference between the PPP group and the control group remained after the Holm-Bonferroni correction was applied.

T-tests showed that the PPP group ($t(33)=3.19$, $p=0.003$, BCa 95% CI [-4.89, -1.25]) and PND group ($t(45)=-2.84$, $p=0.022$, BCa 95% CI [-3.44, -0.57]) scored significantly lower than the control group on the RSE; lower scores indicate poorer self-esteem. These differences remained significant after Holm-Bonferroni corrections were applied for both PPP ($p=0.009$) and PND ($p=0.026$) comparisons.

T-tests showed a that the PPP group ($t(39)=-3.78$, $p=0.004$, BCa CI 95% [4.48, 15.18]) and PND group ($t(45)=-3.5$, $p=0.005$, BCa CI 95% [2.92, 10.55]) scored significantly higher on the GI compared to the control group; indicating greater state guilt. These differences remained significant after Holm-Bonferroni corrections were applied for both PPP ($p=0.012$) and PND ($p=0.012$) comparisons.

There were no significant differences between PPP and PND groups on any of the target variables. Although differences were evident between PPP and control groups on all variables findings in this sample suggest variables are not specific to PPP. Guilt and self-esteem may be related to postpartum mental health difficulties more widely as differences remained between PND and non-clinical controls on each of these measures.

This hypothesis was partially supported as clinical groups had greater responsibility beliefs, greater guilt and lower self-esteem than the non-clinical control group, however, there were no significant differences between PPP and PND groups.

Hypothesis 2: Participants with greater responsibility beliefs, greater experiences of guilt and lower self-esteem will have poorer well-being.

A standard multiple regression with bootstrapping was performed with WEMWBS as the dependent variable and RAS, RSE and GI as independent variables. All three independent variables accounted for a significant amount of variance in wellbeing scores ($R^2=0.83$, adjusted $R^2=0.69$; $F(3,63)=46.13$, $p<0.001$). The partial regression coefficients showed that RAS had a significant unique negative relationship to wellbeing ($B=-2.85$, $\beta=-0.25$, $t(64)=-2.45$, $p=0.013$, BCa 95% CI [-5.23, -0.66]), a negative relationship, in this case, indicates that higher responsibility attitudes are related to poorer wellbeing. RSE had a significant unique positive relationship to wellbeing ($B=1.19$, $\beta=0.25$, $t(64)=3.77$, $p=0.003$, BCa 95% CI [0.46, 1.86]), indicating higher self-esteem is related to greater wellbeing. Finally, GI had a significant unique negative relationship to wellbeing ($B=-0.94$, $\beta=-0.49$, $t(64)=-4.82$, $p=0.001$, BCa 95% CI [-0.99, -0.40]), indicating a greater state guilt is related to poorer wellbeing.

Based on these results we can reject the null hypothesis as all variables have a significant relationship to well-being in the hypothesised directions.

Hypothesis 3: The relationship between responsibility beliefs, guilt and self-esteem and well-being will be predicted by group membership.

Dummy codes were used to transform the categorical group variable so that group membership could be entered into the regression (Field, 2018). As there were three levels to the group variable, two dummy codes were created. The multiple regression showed a

significant relationship between the independent variables and well-being was maintained indicating the contribution of RAS, RSE and GI to wellbeing is independent of group membership. The PPP group had a significant relationship to wellbeing ($B=-3.35$, $\beta=-0.26$, $t(62)=-2.82$, $p=0.028$, BCa 95% CI [-14.46, -1.96]). These results show that the relationship between responsibility beliefs, guilt and self-esteem to well-being is not predicted by group membership.

The hypothesis was not supported as the relationship between responsibility beliefs, guilt and self-esteem to well-being was not predicted by group membership.

Discussion

This study set out to test the role of responsibility beliefs, guilt, and self-esteem in PPP by comparing women with PPP to a clinical (PND) and non-clinical control groups. Despite all possible efforts to maximise recruitment both in the study design and recruitment strategy, the study fell short of the target sample size. Therefore, analyses were conservative and tentative. Employing the use of bootstrapping, it was possible to carry out parametric analyses. The results indicate that the primary hypothesis was partially supported. Hypothesis two was supported but not hypothesis three. The discussion will consider the clinical, theoretical, and empirical implications of the findings as well as the limitations of the current study.

The primary hypothesis that women who have had a recent episode of PPP have higher responsibility beliefs, greater guilt and lower self-esteem was partly supported when compared to non-clinical controls, however, did not extend to comparisons between women with PPP and PND This suggests that higher responsibility, guilt and lower self-esteem are

not specific to PPP. The second hypothesis that higher responsibility beliefs, greater guilt and lower self-esteem would predict poorer well-being was supported by all variables having unique significant relationships to wellbeing. The third hypothesis explored the idea that these relationships would be predicted by group. This hypothesis was not supported indicating that responsibility beliefs, guilt and self-esteem predict well-being scores based on individual scores independent of group membership.

Results in the Context of Previous Findings

Whilst caution must be taken as to how much can be inferred from the findings of this study due to the small sample and other shortcomings which will be discussed below, several reflections are worth highlighting.

Inflated responsibility beliefs have been linked to psychosis both during acute and stable periods (Luzon et al., 2009). The current study supports the presence of inflated responsibility beliefs in PPP following acute illness when compared to non-clinical controls during the same postpartum timeframe. Although responsibility appraisals in PPP were not significantly different to those with PND, scores in both groups were comparable to norms found in individuals with obsessive-compulsive disorder; a group wherein responsibility beliefs have been established as being significantly higher than non-clinical controls (Salkovskis et al., 2000). In addition, responsibility beliefs have been found to be transdiagnostic in nature (Tolin et al., 2006; Inozu et al., 2022).. Due to the relatively small sample size it may be worth exploring the potential role of responsibility appraisals in postpartum mental health difficulties more broadly. While developing and conducting this research, it was found that responsibility appraisals have been linked to women with a higher risk of postpartum mental health difficulties (Fonseca & Canacarro, 2020). A Portuguese study comprising 441

postpartum women found that women scoring higher on both measures of risk for postpartum mental health difficulties and measures of postnatal depression exhibited more dysfunctional attitudes related to maternal responsibility (Fonseca & Canavarro, 2020). The results of the current study do entirely support this evidence as PND and control groups did not differ significantly on responsibility appraisals after corrections for multiple comparisons were made, however, the differences between PPP and non-clinical controls supports a possible role for responsibility appraisals in postpartum mental well-being. Barrett and colleagues (2016) have also reported increased responsibility interpretations in postpartum women without mental health difficulties when compared to antenatal and non-pregnant controls, however, this was specifically related to intrusions focused on potential harm to the infant and was predictive of distress. This may support the role of responsibility appraisals in PPP as there is evidence to suggest experiences of both intrusions and delusions relation to infant harm (McGrath et al., 2013; Glover et al., 2014).

Responsibility appraisals have also been linked to guilt in both clinical and non-clinical samples (Melli et al., 2017; Berndsen & Manstead, 2007). Women with PPP in the current study experienced increased guilt compared to non-clinical controls, which was also true in the case of responsibility appraisals, however, their relationship to one another was not measured and so no conclusions can be drawn regarding this. In addition to previous research indicating a relationship between guilt and responsibility appraisals, guilt has been linked to delusional ideation as frequently experienced in psychosis (Picardi et al., 2018). This may be relevant for women with PPP as qualitative reports suggest long-standing feelings of guilt related to the content of thoughts experienced during acute periods of illness (Engqvist & Nilsson, 2013). In the present study women with PND also experienced significantly higher guilt than non-clinical controls; this supports previous findings wherein

women experiencing psychological distress within 12 weeks following childbirth are more likely to score higher on feelings of guilt and self-blame (Seimyr et al., 2013). Guilt in PND has been linked to similar experiences as those reported for PPP, particularly regarding unmet expectations and intrusive thoughts related to the infant (Beck, 2002). There may be potential value in considering the role of guilt in postpartum mental health difficulties which may be perpetuated by both dysfunctional appraisals as well as the wider societal and sociocultural context.

The findings in this study support previous reports that difficulties in PPP can persist beyond the acute phase of illness (Forde et al., 2019; Burgerhout et al., 2017). Burgerhout and colleagues found that despite functional recovery women who have experienced PPP present with long-term psychological distress in the form of depression and anxiety. In the current study, women with PPP did not perceive themselves to be acutely unwell, however, their scores on wellbeing measures were greater than those without a postpartum mental health difficulty and mean group scores were comparable to those above the threshold of clinically significant difficulties. In addition, scores on measures of self-esteem were significantly poorer in women who had experienced PPP compared to non-clinical controls and it is known that poorer self-esteem is linked to a greater burden of depression and anxiety (Sowislo & Orth, 2013). Women with PND also scored lower on measures of self-esteem which has been reported in previous studies (Wisner et al., 2006), however, it has also been found that PND is not associated with lower self-esteem over and above its association with depression in non-parous women (Jones et al., 2010). While self-esteem is associated with vulnerability to affective mental health difficulties more generally, the link to postpartum episodes as found in the present study is less specific.

Clinical and Theoretical Implications

As mental health and wellbeing are impacted beyond acute PPP it is important that support provision extends beyond inpatient care and remission of acute symptomatology. The NICE guidance (NICE, 2014) must be followed carefully regarding the continuity of care for women with PPP transitioning from hospital to home. This is not always apparent across the literature (Doucet et al., 2011; Forde et al., 2019) and so it would be beneficial for healthcare professionals to advocate on behalf of women with PPP to ensure joint-up continuous care. With regard to psychological intervention, although responsibility appraisals, guilt and self-esteem have not been found to be specific to PPP, the result of the current study suggest they are significant when compared to women without mental health difficulties postpartum. Addressing responsibility beliefs, guilt and self-esteem in interventions may be have clinical relevance following PPP particularly in relation to the wellbeing of women as all factors had a relationship to wellbeing.. Cognitive behavioural therapy approaches have been effective in OCD populations where responsibility appraisals are elevated (McKay et al., 2015), it may be therefore possible to adapt such approaches in the presence of inflated responsibility in postpartum mental health. Recent research has also outlined the utility of CBT in addressing guilt in individuals who have experienced traumatic events which can be extended to individuals who may not meet a diagnosis of PTSD but who experience guilt in relation to the trauma (Young et al., 2021). PPP is often described as a traumatic event and so adaptations to such trauma-focused interventions may be of benefit. There may also be a potential benefit in considering third-wave approaches; compassion-focused therapy for example has been found effective in improving self-esteem and reducing the burden of anxiety and depression in group therapy (Anderson *Rasmussen, 2017). This may be particularly useful in the treatment of PPP as women have reported across the qualitative literature on the usefulness of peer therapeutic spaces and support (Heron et al., 2012; McGrath et al., 2013).

Although the psychological processes investigated in the current study were not found to be specific to PPP, their difference from non-clinical controls suggests a potential role for them nonetheless. The findings somewhat fit with existing cognitive models of psychosis more broadly in that, cognitive appraisals such as inflated responsibility and low self-esteem contribute to emotional distress which in this case is related to guilt and in turn impacting on overall emotional wellbeing (Garety et al., 2001). However, the presence of these psychological processes, particularly guilt and self-esteem, in PND raises questions about their contribution to a theoretical understanding of PPP. It could be possible that because the study was underpowered, differences were not visible between the groups, however, the findings also suggest that these specific factors included were not specific to PPP and so further research is needed to investigate cognitive and emotional processes that may better explain the development and maintenance of distress for women with PPP. As the mean scores were higher for responsibility beliefs and guilt and lower for self-esteem in PPP compared to PND, these factors may exist on a continuum in postpartum mental health difficulties. The idea of a continuum is referenced widely in mental health research and symptomatology in depression and psychosis have been found to exist along a continuum of severity (van Os et al., 1999). This has implications for the understanding of postpartum mental health more broadly and the possibility of transdiagnostic features underlying presentations. This presents possibilities for future research toward better understanding of psychological processes in postpartum mental health.

Limitations

The findings of the present study should be interpreted in the context of its limitations.

Firstly, the sample size was small and did not meet the recommended numbers as calculated

in the a priori power calculations. Therefore, this study was not sufficiently powered to detect a difference between the groups. Recruitment of this population proved challenging. Some potential reasons may include the limited time women with young children have, the recency of challenging mental health difficulties, and the difficulty in reaching women who have experienced PPP. In addition, approximately 40% of those who clicked on the survey link did not proceed beyond the information sheet and screening questions, which raises questions regarding the length, clarity and accessibility of the information provided about the study in the information sheet and advertisement.

Selection bias may have also affected the results of the study. The sample was a self-selecting group recruited online through social media platforms and online support and advocacy groups. A significant increase in recruitment occurred following the advertisement of the study through the Action on Postpartum Psychosis (APP) service user network. Individuals who participate and seek out involvement in such groups have been found to have more integrative recovery styles which are associated with improved outcomes and social functioning (Tait et al., 2003). Those recruited are therefore unlikely to be representative of PPP populations more broadly. In addition, the sample lacked diversity and was predominantly white. Women from Black, Asian and Minority Ethnic backgrounds are disproportionately affected by poor mental health in the perinatal period which is not represented in this study (Womersley et al., 2021). This limits the generalisability of the results.

It was not possible to verify the diagnosis of PPP or PND with participants due to the online nature of the study. Women were asked however to provide information regarding their diagnosis, specifically who gave them this and how soon after childbirth it was received with

all of the PPP group and over half of the PND group reported a diagnosis had been received by a healthcare professional. In addition, the demographic questionnaire failed to ascertain where women perceived themselves to be in terms of recovery. Although an exclusion criterion was women who were currently acutely unwell and/or receiving inpatient treatment, however, this relied on self-report and beyond this perceived positioning of self in recovery was not ascertained.

Along with these limitations, the study had a number of strengths. Conservative statistics and corrections for multiple testing were employed so to control for family-wise error. The study also included expert by experience involvement and piloting, which allowed for adjustments to be made to ensure greater accessibility of the study.

Future Research

PPP remains an under-researched area of study. Future research would benefit from utilising analytic approaches which work toward developing theoretical models specifically for PPP. This would provide a helpful basis for both subsequent research as well as clinical guidance. The current study used a cross-sectional design that does not allow for inferences about the temporal sequencing of cognitive and emotional processes nor the possible fluctuations across time. Future research may benefit from investigating such process longitudinally to both understand the role of psychological process over time and also to support with a larger sample size. The current study also investigated limited aspects of cognitive and emotional processes. Other factors that may be associated with PPP should be investigated in future research for example attachment styles and cognitive appraisals specifically linked to postpartum mental health and motherhood. Future research may also benefit from recruiting samples through the National Health Service (NHS) in both inpatient, outpatient and

community teams in different regions so to capture a more representative sample and range of care experiences.

Conclusion

Postpartum psychosis is a serious psychiatric disorder which has potential long-standing implications for maternal wellbeing. The current study did not identify cognitive and emotional processes specific to PPP over and above PND, however, it is possible that these processes are relevant to postpartum mental health more widely and larger samples may identify greater differences between illness presentations. The findings in the current study are also consistent with transdiagnostic approaches to mental health difficulties, where responsibility appraisals, guilt and self-esteem contribute to the development and maintenance of various presentations. The presence of transdiagnostic processes across postpartum mental health more specifically may benefit from further exploration. In addition, the psychological processes examined were limited and it may be that other cognitive and emotional factors yet to be investigated are more strongly linked with PPP. As there are no theoretical models specific to PPP it is important that research continues towards developing a better understanding of psychological mechanisms underlying both acute and recovery phases of illness so that support and intervention can be tailored for women with such experiences.

Integration, Impact and Dissemination

The following section will detail the process through which the systematic review and empirical study were developed. Despite being stand-alone pieces of work an explanation will be offered as to how they are linked and mutually informed. An overview of the potential academic impact and real-world implications of the research will be described considering various possible stakeholders including women with postpartum psychosis (PPP) and their personal networks, as well as healthcare professionals and service providers. Finally, a description of plans and efforts to disseminate the findings of both the systematic review and empirical paper will be offered.

Integration

Interest in the Research Topic

My interest in conducting an empirical study on PPP stemmed from my previous experience of working clinically in a perinatal mental health team. In my therapeutic work, the focus often became two-fold; one side being the management of symptoms and the other confronting a sense of shame or disappointment often felt due to experiencing a postpartum mental health difficulty and the meaning-making that surrounded this. The latter often persisted for some time. In the first instance, to learn more about postpartum psychosis I read narratives on the internet from women with lived experiences through the Action on Postpartum Psychosis (APP) website. I was struck by the traumatic nature of the illness; most women described it as ‘out of the blue’ and unexpected, many of whom had not previously experienced mental health difficulties. Women’s stories also highlighted the lack of awareness about PPP. I understood that, diagnostically, postpartum psychosis was considered a brief psychotic disorder and when treated with medication, symptoms of psychosis typically

subside within a relatively short period of time. However, I was curious about the possible longer-term implications of experiencing such a severe mental health difficulty, particularly at a time that is often expected to be filled with joy. I was interested in better understanding the underlying psychological mechanisms that may be specific to postpartum psychosis.

Development of the Empirical Study

Developing the research question and designing the empirical study was facilitated through discussions with my thesis supervisor, reflecting on existing models of psychosis and reviewing the literature on postpartum psychosis. During initial literature searches, qualitative designs described persistent difficulties for many years after the acute episode of psychosis (Forde et al., 2020; Forde et al., 2019, McGrath et al., 2013; Doucet et al., 2012) and quantitative studies showed a higher risk of subsequent postpartum and non-postpartum psychotic and affective episodes (Wesseloo et al., 2016; Blackmore et al., 2013). therefore, it was thought that there may be underlying psychological mechanisms contributing to these ongoing difficulties and subsequent episodes. The literature also demonstrated a need for the development of psychological interventions for PPP. This, however, would first require a better understanding of the psychological processes specific to PPP. Only one study to my knowledge had previously investigated a limited number of personality, cognitive and affective factors in PPP, however, this was in a sample of women who also had an existing diagnosis of bipolar affective disorder (Perry et al., 2019). Using the cognitive model of psychosis as a theoretical basis, and considering cognitive appraisals related to both psychosis and motherhood it was decided that responsibility beliefs would be worth exploring in PPP. Responsibility beliefs traditionally have been linked to obsessive-compulsive disorder (Salkovskis et al., 1999), however, in more recent years they have been found to be elevated in individuals during both acute psychosis and in stable periods when symptoms

have remitted (Luzon et al., 2009). Inflated responsibility attitudes have also been linked to the perinatal period more broadly (Wroe et al., 2016). Additionally, the thesis supervisor had conducted research on responsibility beliefs in psychosis and found evidence for their transdiagnostic nature which was encouraging for further exploration in other presentations. Second, low self-esteem is associated with psychotic disorders more broadly (Freeman et al., 1998) and has been implicated in the formation of delusional ideation (Bentall & Kaney, 1996). In addition, low self-esteem has been viewed as a product of an individual's experience of psychosis due to societal stigma around hospitalisation and loss of social role (Birchwood et al., 2000). This was considered particularly important in the context of PPP due to the mental health aspect but also the impact it can have on mothering abilities and meeting societal and personal expectations of motherhood. Finally, guilt was included due to its inextricable link with responsibility beliefs as well as it being widely reported in the qualitative literature by women who had experienced PPP.

It was decided that these cognitive and emotional factors would be examined following acute illness. This decision took into consideration the severity of PPP and the potentially unethical access to women as research participants during the acute phase of illness. Moreover, as the research was designed at the beginning of the COVID-19 pandemic it was pre-empted that access to patients through NHS inpatient services would be difficult. Recruiting following acute illness was also supported by the fact that women are known to have ongoing difficulties and are at higher risk of subsequent affective and psychotic episodes. A two-year threshold was set as postpartum mental health difficulties can be diagnosed up to one year postpartum therefore recovery is likely to extend beyond this time. In addition, the two-year threshold was influenced by the provision of perinatal mental health care being extended to two years postpartum. It felt important to have a set time period to also control for extraneous

variables for example the development of subsequent mental health difficulties and previous studies in this population cited variance in the time since illness as a possible limitation (Plunkett et al., 2017).

Development of the Systematic Review

For the systematic review, my aim was to identify a subject matter that could complement the empirical study. This, however, proved difficult in the initial stages. Due to the relatively limited body of literature on postpartum psychosis, identifying a review question that would allow for the collation of a substantial amount of data to contribute to the knowledge base was challenging. Some initial ideas included, reviewing the effectiveness of psychological interventions for postpartum psychosis and help-seeking in postpartum psychosis, however, preliminary searches of relevant databases yielded very low numbers of articles. It was therefore thought to have a broader question so as to capture existing data in PPP populations. Since it was decided that the empirical paper would recruit women following an episode of postpartum psychosis who were no longer acutely unwell, it felt sensible to focus on recovery from PPP. In addition, there is limited empirical research conducted with women during acute illness, due to the severity and ethical concerns for participation in research at this time. As existing treatment guidelines for psychological support for PPP are based on those set out for psychosis more generally, it was my hope that the data from the review could inform more tailored approaches to supporting women with PPP. Previous reviews have focused on recovery experiences more broadly, so I thought there was a potential benefit to focus on factors that promoted recovery following PPP.

Relationship between Systematic Review and Empirical Study

The systematic review and empirical study were developed individually and underwent independent planning processes. However, the overarching aim of the thesis as a whole was to contribute to the understanding of experiences specific to PPP. Factors limiting comparability of the findings are mostly due to the review and empirical study focusing on different phenomena; the empirical study focused on internal psychological processes whereas the reviews focused on recovery-related factors which were predominantly related to support and care received. Nevertheless, there was a clear topical overlap between the two studies with both being focused on the period following acute illness. The review allowed for a predominantly qualitative understanding of women's needs whilst the empirical paper considered the underlying psychological processes. Some comparisons can be drawn from the findings, as both indicated difficulties with mental health and wellbeing existing beyond the acute phase of illness. Although guilt and self-esteem were not found to be significantly different between PPP and PND groups in the empirical study, they were different from non-clinical controls suggesting their presence in PPP, these factors were also mentioned frequently throughout the articles included in the review. In addition, the review highlighted the need for psychological interventions designed for PPP, however, to do this it is important to have an awareness of psychological processes that may be contributing to the development and maintenance of difficulties and distress in PPP, which the empirical study set out to examine.

Involvement of Experts by Experience

In designing the empirical study an expert by experience was consulted on the selection of factors chosen to examine. The provisional hypotheses and rationale as to why these factors were selected were shared. Initially, there was an idea to include an additional questionnaire

related to stigma, however, it was decided following feedback from the EBE to omit this as it felt like an important topic that would not receive adequate justification in the present study. Four women including one who had experienced PPP several years previously piloted the study and offered feedback on the accessibility of the survey and the questions included. All women made suggestions regarding grammar and the presentation of questionnaires within the survey. All women also made comments on the length of the information sheet, for it to be significantly shorter, however, for the most part, there was little that could be removed due to standard requirements. One woman suggested presenting crisis and support information on a separate page that could be captured in a screenshot, amendments were made to allow for this. All questionnaire responses were on a Likert scale; initially, the numerical score and corresponding descriptive were provided in the introduction and the questions were then presented in a matrix with the numerical responses for selection. Two women spoke about having to continually return to the introduction to remind themselves of the response descriptors. The questionnaires were amended so that descriptive statements were provided for each question or statement in a drop-down selection.

With regard to survey content, there were two obstetric questions regarding previous traumatic birth experiences which one woman suggested may be emotionally evocative. These questions were re-considered and later omitted from the survey as they did not relate to the research question and there was no theoretical basis for inclusion.

The test battery was piloted with one woman who had previously experienced PPP and three women in the postpartum period without a mental health difficulty. This allowed for troubleshooting and obtaining feedback on survey length, presentation, user-friendliness, and ease of completion. The average completion time of the survey in the pilot group was 18

minutes. Recommended amendments included spelling and grammar errors, the presentation of longer measures, and information on progress and measures remaining. One participant suggested that the information and support contacts should be on a separate landing page so that they could be screen-captured by participants if required.

Participant Feedback

Recruitment posts on social media garnered significant interest with a number of women with lived experience sharing their stories in the comment sections. A common theme across these stories was the lack of knowledge about PPP preceding their illness experience and their concern that professionals also lacked an understanding of PPP. Two women got in contact by email asking for additional study information, particularly about where the results would be published; one also asked about how she might be able to get involved in further research endeavours and so I directed her to Action on Postpartum Psychosis (APP) who have a service-user research panel. Posts on Twitter and Facebook also received comments from family members of women who had experienced PPP; a number of whom requested for the results of the study to be sent to them on completion. Some family members also shared their experiences during the illness and recovery periods, and it was evident that PPP had a significant impact on the entire family unit. One family member got in contact by email and shared that she had lost her daughter to suicide following PPP onset; she shared that she was now advocating for increased provision for perinatal mental health support and was keen to be informed of study outcomes and would like to be contacted regarding future research involving family members.

Impact

The results of the systematic review and empirical study have potential implications for a range of stakeholders, including women with postpartum mental health difficulties, partners and family members of women, healthcare professionals and service providers. The following section will consider how the findings of both the review and empirical study contribute to the existing evidence base and address the potential impact of these findings for each group of stakeholders. The two sets of findings contribute in different ways to the knowledge base, however, both are with their limitations which much also be taken into consideration in terms of impact.

Women Experiencing Postpartum Psychosis

The review was conducted with the aim of identifying what women found helpful and supportive to their recovery from PPP. While each experience of PPP and recovery is individual and unique, it may be beneficial for women with PPP to learn about what has been beneficial from those with a similar experience. The review highlighted the importance of ongoing support following discharge from acute care; it is hoped that this will normalise the long-term impact of PPP and encourage help-seeking following acute symptoms remission. Bringing awareness to strategies such as noticing small positive changes may be something women could consider as part of their daily routine; this could also be supported by partners and family members. Other strategies such as creating timelines and undertaking values-based activities are also practical steps women could take relatively independently. The review also highlighted the complexity and non-linearity of the recovery process; this may help to normalise challenges and setbacks women experience following PPP.

The findings of the empirical paper may support women to make sense of some of the distress they are experiencing. Demonstrating the possibility of increased responsibility beliefs and guilt and lower self-esteem following PPP may help women to make sense of their distress and normalise their experiences. The differences in responsibility beliefs, guilt and self-esteem between women with PPP and their non-clinical counterparts following acute illness may validate any concerns women with PPP may have about ongoing challenges they may be experiencing. Bringing attention to the implications for well-being given the differences in these psychological processes may encourage women to seek help from mental health professionals to get support with navigating the challenges that arise as a result.

Partners & Family Members of Women with PPP

The review highlighted the importance of partners and family support in women's recovery following PPP. Too often the role of an individual's network is not credited in managing and overcoming challenges brought about by serious mental health difficulties. From the findings of the research, it is evident that support and care provision should be extended to partners and family members as they take on an immense role in the support of women with PPP. It is therefore important that their mental health and well-being needs are also acknowledged during what can be a very frightening time witnessing such a significant change in a loved one. The findings of the empirical study, focusing on psychological processes that may be underlying PPP may help family members to make sense of the distress the woman with PPP is experiencing. There is also a possible benefit for partners and family members to learn that difficulties can persist beyond the acute phase of illness as evidenced in both the review and empirical study, as this can potentially prepare them for the likely long-term nature of challenges.

Healthcare Professionals

It is evidenced in the review that specialist supports need to be provided for women with PPP. It is therefore hoped that highlighting this will encourage healthcare professionals to advocate for women to receive the care they require, for instance, the importance of MBU provision and maintaining mother-infant contact. The review also addresses the long-term nature of difficulties brought about by PPP. There is value in healthcare professionals considering this when thinking about care plans, particularly following discharge from inpatient care. Having a better understanding of the integral role of partners and families in positive recovery may also support healthcare professionals to consider how their support can extend to the system as a whole. There is potential for considering systemic therapy approaches or signposting partners and family members to services they can receive support from.

Both the review and empirical study indicate several potential therapeutic avenues healthcare professionals could explore when working with women with PPP. For instance, including narrative approaches when thinking about creating timelines of events to help women and their families make sense of the difficult experiences they have encountered and to include alternative narratives of some of the positives that have also been present. Moreover, considering the psychological processes that are different for women with PPP compared to their non-clinical counterparts, there is potential to explore these in formulation and subsequent therapeutic interventions drawing on ideas from cognitive behavioural therapy perhaps to address elevated responsibility and poorer self-esteem. As the empirical study investigated limited psychological mechanisms that are not necessarily specific to PPP, the findings may encourage healthcare professionals to consider these mechanisms when working with women with postpartum mental health difficulties more broadly.

Service Providers & Policy Makers

Women placed a clear emphasis on the need for specialist and tailored support. The review highlighted the need for both specialist inpatient and community or outpatient support. However, it is apparent that this is not always accessible to women. The findings, therefore, support current efforts to improve accessibility and provision of perinatal healthcare services and encourage providers and commissioners to consider how this can be taken forward.

Researchers

The findings of this research were compounded by several limitations. However, the research has opened up some possibilities to consider for future research endeavours. The empirical study included very limited psychological processes which were not specific to PPP but were significantly different to women without a postpartum mental health difficulty. This suggests the need to explore additional psychological processes including attachment styles, personality traits, cognitive appraisals, and emotional processes in further research so as to contribute to our knowledge and understanding of the underlying mechanisms in PPP. The systematic review has highlighted significant gaps in the literature regarding psychological interventions for PPP. Despite all the included studies being focused on recovery, none of these studies mentioned or referred to specific psychological interventions or therapies. There is also potential benefit in exploring the differences in recovery outcomes for women with PPP who were treated in specialist services such as MBUs compared to those who received more generic psychiatric care. This type of research could greatly influence policy and practice in care for PPP.

Dissemination

To ensure the findings of this research contribute to the existing evidence base and public and professional knowledge of PPP, careful consideration has been given to how they will be disseminated. The empirical paper and systematic review will be submitted to peer-reviewed journals for publication. BMC Psychiatry, Clinical Psychology and Psychotherapy, and Archives of Women's Mental Health have been identified as potential journals to submit to due to their publication record of research on postpartum psychosis. BMC Psychiatry provides a platform for research that progresses the evidence base related to the prevention and management of psychiatric disorders. Clinical Psychology and Psychotherapy include research that contributes to clinically relevant theory and practice. Archives of Women's Mental Health aim to develop the scope of understanding of all aspects of psychiatric disorders experienced by women and are interested in highlighting the intersection of various disciplines. According to the Journal Citation Reports, these journals have impact factors of 3.63, 3.22, and 4.34 respectively (Clarivate Analytics, 2021). Careful consideration will be taken in the preparation of the manuscripts for submission, editing will be in line with the guidelines set out by the individual articles and keywords will be selected so that the manuscripts are easily accessible and gain visibility.

A lay summary of the findings from both the review and empirical study will be sent via email to all participants who have consented to the research being shared with them. The summaries will also be posted to the social media platforms and online forums where the study was originally advertised. In addition, an infographic will be created as an easy-read and accessible representation of the findings. Viewers will be invited to circulate the findings with their personal and professional networks. This lay summary will also be shared with

Action on Postpartum Psychosis (APP) to be circulated in their email newsletter and on their webpage which documents research efforts in the field.

The design, methodology and findings of the empirical study have been presented to staff and trainee clinical psychologists at Royal Holloway, University of London in May 2022.

Presentations were held online through Microsoft Teams which allowed for an overview of the study and findings and a discussion with the audience considering methodological choices as well as limitations of the research. Trainees who attended were invited to think about they might carry on research in this area and two trainees got in contact following the presentation to discuss potential avenues for future research and the challenges of conducting research in this population. The thesis will be uploaded onto Royal Holloways' online repository which can be accessed by both staff and students.

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Appendices

Appendix A: Quality Assessment Tool for Studies with Diverse Designs (QATSDDD)

Criteria	0 = Not at all	1 = Very slightly	2 = Moderately	3 = Complete
Explicit theoretical framework	No mention at all.	Reference to broad theoretical basis.	Reference to a specific theoretical basis.	Explicit statement of theoretical framework and/or constructs applied to the research.
Statement of aims/objectives in main body of report	No mention at all.	General reference to aim/objective at some point in the report including abstract.	Reference to broad aims/objectives in main body of report.	Explicit statement of aims/objectives in main body of report.
Clear description of research setting	No mention at all.	General description of research area and background, e.g. 'in primary care'.	General description of research problem in the target population, e.g. 'among GPs in primary care'.	Specific description of the research problem and target population in the context of the study, e.g. nurses and doctors from GP practices in the east midlands.
Evidence of sample size considered in terms of analysis	No mention at all.	Basic explanation for choice of sample size. Evidence that size of the sample has been considered in study design.	Evidence of consideration of sample size in terms of saturation/information redundancy or to fit generic analytical requirements.	Explicit statement of data being gathered until information redundancy/saturation was reached or to fit exact calculations for analytical requirements.
Representative sample of target group of a reasonable size	No statement of target group.	Sample is limited but represents some of the target group or representative but very small.	Sample is somewhat diverse but not entirely representative, e.g. inclusive of all age groups, experience but only one workplace. Requires discussion of target population to determine what sample is required to be representative.	Sample includes individuals to represent a cross section of the target population, considering factors such as experience, age and workplace.
Description of procedure for data collection	No mention at all.	Very basic and brief outline of data collection procedure, e.g. 'using a questionnaire distributed to staff'.	States each stage of data collection procedure but with limited detail, or states some stages in details but omits others.	Detailed description of each stage of the data collection procedure, including when, where and how data were gathered.
Rationale for choice of data collection tool(s)	No mention at all.	Very limited explanation for choice of data collection tool(s).	Basic explanation of rationale for choice of data collection tool(s), e.g. based on use in a prior similar study.	Detailed explanation of rationale for choice of data collection tool(s), e.g. relevance to the study aims and assessments of tool quality either statistically, e.g. for reliability & validity, or relevant qualitative assessment.
Detailed recruitment data	No mention at all.	Minimal recruitment data, e.g. no. of questionnaire sent and no. returned.	Some recruitment information but not complete account of the recruitment process, e.g. recruitment figures but no information on strategy used.	Complete data regarding no. approached, no. recruited, attrition data where relevant, method of recruitment.
Statistical assessment of reliability and validity of measurement tool(s) (Quantitative only)	No mention at all.	Reliability and validity of measurement tool(s) discussed, but not statistically assessed.	Some attempt to assess reliability and validity of measurement tool(s) but insufficient, e.g. attempt to establish test-retest reliability is unsuccessful but no action is taken.	Suitable and thorough statistical assessment of reliability and validity of measurement tool(s) with reference to the quality of evidence as a result of the measures used.
Fit between stated research question and method of data collection (Quantitative)	No research question stated.	Method of data collection can only address some aspects of the research question.	Method of data collection can address the research question but there is a more suitable alternative that could have been used or used in addition.	Method of data collection selected is the most suitable approach to attempt answer the research question
Fit between stated research question and format and content of data collection tool e.g. interview schedule (Qualitative)	No research question stated.	Structure and/or content only suitable to address the research question in some aspects or superficially.	Structure & content allows for data to be gathered broadly addressing the stated research question(s) but could benefit from greater detail.	Structure & content allows for detailed data to be gathered around all relevant issues required to address the stated research question(s).
Fit between research question and method of analysis	No mention at all.	Method of analysis can only address the research question basically or broadly.	Method of analysis can address the research question but there is a more suitable alternative that could have been used or used in addition to offer greater detail.	Method of analysis selected is the most suitable approach to attempt answer the research question in detail, e.g. for qualitative IPA preferable for experiences vs. content analysis to elicit frequency of occurrence of events, etc.
Good justification for analytical method selected	No mention at all.	Basic explanation for choice of analytical method	Fairly detailed explanation of choice of analytical method.	Detailed explanation for choice of analytical method based on nature of research question(s).
Assessment of reliability of analytical process (Qualitative only)	No mention at all.	More than one researcher involved in the analytical process but no further reliability assessment.	Limited attempt to assess reliability, e.g. reliance on one method.	Use of a range of methods to assess reliability, e.g. triangulation, multiple researchers, varying research backgrounds.
Evidence of user involvement in design	No mention at all.	Use of pilot study but no involvement in planning stages of study design.	Pilot study with feedback from users informing changes to the design.	Explicit consultation with steering group or statement or formal consultation with users in planning of study design.
Strengths and limitations critically discussed	No mention at all.	Very limited mention of strengths and limitations with omissions of many key issues.	Discussion of some of the key strengths and weaknesses of the study but not complete.	Discussion of strengths and limitations of all aspects of study including design, measures, procedure, sample & analysis.

Appendix B:



Ethics Review Details

You have chosen to submit your project to the REC for review.	
Name:	Maloney, Erica (2019)
Email:	NHJT014@live.rhul.ac.uk
Title of research project or grant:	The role of responsibility beliefs, guilt and self-esteem following an acute episode of postpartum psychosis
Project type:	Royal Holloway postgraduate research project/grant
Department:	Psychology
Academic supervisor:	Olga Luzon
Email address of Academic Supervisor:	olga.luzon@rhul.ac.uk
Funding Body Category:	No external funder
Funding Body:	
Start date:	01/07/2021
End date:	01/06/2022

Research question summary:

The proposed study aims to understand the role of responsibility beliefs, guilt and self-esteem in women who have recovered from an episode of postpartum psychosis and whether they impact emotional wellbeing. A clinical control group of women who have recovered from post-natal depression and a non-clinical control group of women who have not had a postpartum mental illness will be recruited to determine the specificity of the variables to recovery from postpartum psychosis.

The main questions in the present study are the following:

Are there differences on measures of responsibility, guilt and self-esteem following an episode of postpartum psychosis compared to clinical and non-clinical control groups?

Do responsibility beliefs, guilt and low self-esteem explain wellbeing in postpartum women and is this predicted by group allocation?

It is expected that responsibility beliefs will be higher in the PP group compared to both clinical and non-clinical control groups, guilt will be higher in the PP group compared to the non-clinical control group and low self-esteem will be higher in the PP group (and PND group) compared to the non-clinical control group. It is also expected that higher scores on responsibility beliefs and guilt and lower scores on self-esteem will negatively impact well-being in clinical groups and clinical groups will have lower scores on wellbeing compared to those in the non-clinical control group.

Research method summary:

The proposed study will use a cross-sectional, between subject's design and will be conducted online. The study aims to recruit women who have recovered from an episode of postpartum psychosis, postnatal depression and a non-clinical control group of postpartum women who have not experienced a postpartum mental illness. Postpartum mental health support services including Action on Postpartum Psychosis, the Association for Postnatal illness and PaNDAS among other recognised and trusted agencies will be targeted for recruitment. The study will also be advertised on postnatal support groups on social media. All participants will be 18 years or older and from the UK. All women will have given birth in the previous 24-months. This time limit has been set so that there is uniformity to the stage these women are postpartum and so that they will be beyond the acute phase of illness. Diagnoses will be based on participant self-report and no formal psychiatric assessment will be conducted. Women will be excluded from the study if they are currently receiving inpatient psychiatric care or if they have experienced an affective illness in relation to or as a result of alcohol or substance misuse.

Power was calculated using Cohen's (1992) power tables for the primary hypothesis. It suggested a total sample of 156 participants (52 per group).

As mood will also be controlled for, a power analysis was run for an ANCOVA using G*Power which resulted in a total sample size of 158.

The study will nonetheless aim for a total sample of 200 participants total as emerging research from Brysbaert (2019) suggests that a sample of 200 is needed for studies to be sufficiently powered.

Risks to participants

Does your research involve any of the below?

Children (under the age of 16),

No

Participants with cognitive or physical impairment that may render them unable to give informed consent,

No

Participants who may be vulnerable for personal, emotional, psychological or other reasons,

Yes

Participants who may become vulnerable as a result of the conduct of the study (e.g. because it raises sensitive issues) or as a result of what is revealed in the study (e.g. criminal behaviour, or behaviour which is culturally or socially questionable),

No

Participants in unequal power relations (e.g. groups that you teach or work with, in which participants may feel coerced or unable to withdraw),

No

Participants who are likely to suffer negative consequences if identified (e.g. professional censure, exposure to stigma or abuse, damage to professional or social standing),

No

Details,

The study aims at recruiting women from the general population who have recovered from an episode of mental health difficulties within the preceeding 24 months, and that are not actively unwell at the time of recruitment. However, it is acknowledged that these women might be experiencing residual symptoms or be at an increased vulnerability. With this in mind the authors of the study will take a conservative approach and ensure all ethical considerations and support is available to participants, including capacity to consent and withdraw at any time

Design and Data

Does your study include any of the following?

Will it be necessary for participants to take part in the study without their knowledge and/or informed consent at the time?,

No

Is there a risk that participants may be or become identifiable?,

No

Is pain or discomfort likely to result from the study?,

No

Could the study induce psychological stress or anxiety, or cause harm or negative consequences beyond the risks encountered in normal life?,

No

Does this research require approval from the NHS?,

No

If so what is the NHS Approval number,

Are drugs, placebos or other substances to be administered to the study participants, or will the study involve invasive, intrusive or potentially harmful procedures of any kind?,

No

Will human tissue including blood, saliva, urine, faeces, sperm or eggs be collected or used in the project?.

No

Will the research involve the use of administrative or secure data that requires permission from the appropriate authorities before use?,

No

Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?.

Yes

Is there a risk that any of the material, data, or outcomes to be used in this study has been derived from ethically-unsound procedures?.

No

Details,

Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants? - A prize draw is proposed which all participants will have the option to enter. The prize will be a £50 amazon voucher.

Risks to the Environment / Society

Will the conduct of the research pose risks to the environment, site, society, or artifacts?.

No

Will the research be undertaken on private or government property without permission?.

No

Will geological or sedimentological samples be removed without permission?.

No

Will cultural or archaeological artifacts be removed without permission?.

No

Details,

Risks to Researchers/Institution

Does your research present any of the following risks to researchers or to the institution?

Is there a possibility that the researcher could be placed in a vulnerable situation either emotionally or physically (e.g. by being alone with vulnerable, or potentially aggressive participants, by entering an unsafe environment, or by working in countries in which there is unrest)?.

No

Is the topic of the research sensitive or controversial such that the researcher could be ethically or legally compromised (e.g. as a result of disclosures made during the research)?,

No

Will the research involve the investigation or observation of illegal practices, or the participation in illegal practices?,

No

Could any aspects of the research mean that the University has failed in its duty to care for researchers, participants, or the environment / society?,

No

Is there any reputational risk concerning the source of your funding?,

No

Is there any other ethical issue that may arise during the conduct of this study that could bring the institution into disrepute?,

No

Details,

Declaration

By submitting this form, I declare that the questions above have been answered truthfully and to the best of my knowledge and belief, and that I take full responsibility for these responses. I undertake to observe ethical principles throughout the research project and to report any changes that affect the ethics of the project to the University Research Ethics Committee for review.

Certificate produced for user ID, NHJT014

Date:	19/08/2021 15:08
Signed by:	Maloney, Erica (2019)
Digital Signature:	Erica Maloney
Certificate dated:	19/08/2021
Files uploaded:	Full-Review-2707-2021-05-22-14-39-NHJT014.pdf Full-Review-2707-2021-07-05-15-07-NHJT014.pdf Ethics Supporting Documentation Submission.pdf Questionnaires .pdf EthicsSupportingDocumentation_EM_Submit.pdf Full-Review-2707-2021-08-19-15-44-NHJT014.pdf

Appendix C: Participant Information Sheet



Department of Psychology
Royal Holloway University of London
Egham, Surrey
TW20 0EX

Participant Information Sheet

Researcher: Erica Maloney

Erica.Maloney.2019@live.rhul.ac.uk

Supervisor: Dr Olga Luzon

Senior Lecturer in Clinical Psychology

Doctorate in Clinical Psychology

We are inviting you to take part in a study exploring the experiences of mothers in the postpartum period. The research is being conducted as part of the Doctoral Programme in Clinical Psychology, an educational and professional qualification at Royal Holloway, University of London.

Before making your decision on whether or not you would like to partake it is important that you understand why the research is being done and what participation would involve for you. Please do take time to read through this document and consider the information provided. If you are unclear or would like additional information please do not hesitate to ask through the contact details provided below.

What is the study about?

The postpartum period is characterised by immense change, it can be a period of great joy but also presents its own challenges. This study is interested in exploring beliefs and feelings that women experience following a postpartum mental health difficulty. We would like to compare these beliefs and feelings to those women who don't experience a postpartum-related mental illness. Research tells us that this period increases a woman's vulnerability to mental illness.

Who can take part?

Any woman who has had a baby in the previous two years or twenty-four month period. We would like women to participate who have both experienced and not experienced a postpartum mental illness such as postpartum depression or postpartum psychosis. You **do not** have to be a first-time mother to take part. You must be over the age of 18 and reside in the UK.

What will the study involve?

If you decide to take part in the research, you will be invited to complete an online survey about some of your thoughts, feelings, and beliefs. The survey will take between 20-25 minutes to complete. You will also be asked if you would like to be contacted in the future with the outcome of the study.

Potential disadvantages of research participation:

You will be asked to complete some questionnaires about the way you think and some of the emotions you have been experiencing. Some people can find it useful to reflect on these experiences, however, for others, this might be more difficult and lead to distress. If this happens we expect this to be short-lived as there are no elements of the study which intend on provoking a negative response. If you do experience any levels of distress and wish to contact us please use the contact details provided. There is also a list of relevant support services and organisations which you can contact if you would like to seek further support.

Potential benefits of research participation:

By giving us your time and taking part in our study you will be helping us to improve our knowledge of women's experiences following pregnancy. We would hope that our findings may in the future influence clinical practice. As a thank you for taking part you will also be invited to enter a prize draw of a £50 amazon voucher. The draw will be conducted following the completion of data collection which is anticipated to be in January 2022. The winner will be contacted at the email address provided.

Confidentiality:

All information will remain confidential and has been approved by the ethics committee at Royal Holloway University of London. Your contact details will be removed from all the

information and the data will be made anonymous. Your responses to the questionnaires will be stored on password-protected files and computers. Upon completion of the study, data which has been collected for the purpose of this research will be stored on Royal Holloway's secure data depository. And will be destroyed after five years. A breach of confidentiality would only occur if a risk to yourself, your child or others became known to the researcher. The research at this point would share their concerns with you and the recommended action will be discussed.

I want to withdraw from the study:

You have the right to withdraw from the study at any stage. This will not affect you in any way. If this is the case, you can contact the research team via email, your data will be destroyed and will not be used in the study. Due to the online nature of the study and the data

being used to fulfil the requirements of a doctorate thesis there will be a cut-off point of 1st March 2022 for the withdrawal of data. Beyond this date, it will no longer be possible to withdraw the data from use in the study.

Who has reviewed the study?

The Royal Holloway Research Ethics Committee has reviewed the proposed study (Reference number). It is a requirement that the data collected is made available for scrutiny by monitors from Royal Holloway, to ensure research is being conducted properly and the interests of participants are protected.

What will happen to the results?

It is the aim that the results of this study will be published in an academic journal. Participants will not be identifiable. If you would like to receive a summary of the findings then please do get in contact to request this. There is also a tick box provided on the survey to indicate if you would like the findings sent to you automatically. We expect the findings to be available from July 2022.

How to find out more:

If you wish to ask any additional questions or you would like further information on this study or related to your participation please do not hesitate to contact the researcher (Erica

Maloney) at erica.maloney.2019@live.rhul.ac.uk or the research supervisor (Dr Olga Luzon) at olga.luzon@rhul.ac.uk

If you have read and understood the information provided and are happy to take part in the study please follow the link below:

https://rhulpsychology.eu.qualtrics.com/jfe/form/SV_6i1qr0HWMfvK1D0

Appendix D: Crisis Information

Please screenshot or save this image if you would like further support or information on postpartum mental health difficulties.

Additionally, we **would advise you to contact your GP** to discuss your concerns or request a referral to perinatal mental health services.

Perinatal Mental Health Organisations:

Action on Postpartum Psychosis (APP) -
app-network.org

The Association for Postnatal Illness –
apni.org

Birth Trauma Association –
birthtraumaassociation.org.uk

Family Action – family-action.org.uk

Fatherhood Institute –
fatherhoodinstitute.org

Maternal OCD – maternalocd.org

PANDAS Foundation –
pandasfoundation.org.uk

General Mental Health Support:

MIND - mind.org.uk/about-us/local-minds/

Samaritans - samaritans.org/

If you would like to seek support with anxiety or low mood you can contact your local Improving Access to Psychological Therapies (IAPT) Service. You can find your local service by searching your postcode on this website:

[https://www.nhs.uk/Service-Search/Psychological-therapies-\(IAPT\)/LocationSearch/10008](https://www.nhs.uk/Service-Search/Psychological-therapies-(IAPT)/LocationSearch/10008)

Crisis and Emergency Support:

If you feel concerned about your current mental state and are worried that you are unable to keep yourself, your child or others safe from harm, or you are at risk of harm from others, then please contact Emergency Services by calling **999** or go to your local A&E department. You can find your nearest A&E by searching your postcode on this website:

<https://www.nhs.uk/Service-Search/Accident-and-emergency-services/LocationSearch/428>

Appendix E: Consent Form



Department of Psychology
Royal Holloway University of London
Egham, Surrey
TW20 0EX

Participant Consent Form

Please complete this form after you have read the information sheet. Please read carefully and tick to indicate you give your consent or do not consent before continuing.

Study: Exploring beliefs and emotional experiences following postpartum mental illness
(Reference Number)

1. I confirm that I have read the participant information sheet dated (DATE) for the above study. I have had the opportunity to consider the information and ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason, or without my legal rights being affected.
3. I understand that confidentiality and anonymity will be maintained, and it will not be possible to identify me in any publications.
4. I understand that Royal Holloway, University of London will have access to my data which will be stored for five years and that only the researchers will have access to my contact details for the prize draw if I choose to provide them. These details will be destroyed following the completion of the prize draw.
5. I give my permission to be contacted in the future for any related follow-up research, or studies of a similar nature.
6. I know that if I would like to I can contact the research team for a written summary of the findings of the study.
7. I agree to take part in the above study.



Participant Debrief Sheet

Researcher: Erica Maloney

Erica.Maloney.2019@live.rhul.ac.uk

Supervisor: Dr Olga Luzon

Senior Lecturer in Clinical Psychology

Doctorate in Clinical Psychology

Cognitive and emotional experiences following a postpartum mental health difficulty

We would like to thank you for your participation in our research study, it is greatly appreciated.

What is the study about?

This study aims at exploring different thoughts, feelings and beliefs in women who have overcome postpartum psychosis and how these factors impact wellbeing. Postpartum psychosis is the most severe type of mental health difficulty experienced after childbirth. This can be very stressful for the woman and her family. We know that there is a long-term recovery which can be complex and so we want to better understand the way women think and feel during this time. It's important for us to understand how these experiences differ between women who have other postpartum mental illnesses and women who have not had any postpartum mental illnesses. We hope that the information we gather will help us to better understand the support needs of women who experience this severe mental health difficulty following childbirth. We anticipate that the findings from this study will be available by May 2022. If you would like to receive a summary of the findings, please do not hesitate to contact erica.maloney.2019@live.rhul.ac.uk.

What happens to the information you have shared?

The information you have shared with us will be stored confidentially and anonymously. You can withdraw your information from this study any time before 1st March 2022 without giving a reason. It will not be possible to withdraw after this date as the data will be used to fulfil the requirements of the doctoral thesis. If you wish to withdraw from the study please contact erica.maloney.2019@live.rhul.ac.uk. If you have consented to be contacted after a follow-up period then the research team may contact you again using the same email address you provided. If contacted at a future date, you have the right to decline to participate again.

Whom can I contact if I have questions about the study?

If there is anything that is unclear or if you have any questions or would like additional information regarding the study then please do not hesitate to contact the researcher (Erica Maloney) at erica.maloney.2019@live.rhul.ac.uk or the study supervisor (Dr Olga Luzon) at olga.luzon@rhul.ac.uk. We are both NHS clinicians and have been trained to support individuals with mental health difficulties or emotional distress.

Whom can I contact if I want further support or information?

If you would like further support or information on postpartum mental health difficulties then you can follow the links provided below. Additionally, we would advise you to contact your GP to discuss your concerns or request a referral to perinatal mental health services.

Perinatal Mental Health Organisations:

Action on Postpartum Psychosis (APP) -

app-network.org

The Association for Postnatal Illness –

apni.org

Birth Trauma Association –

birthtraumaassociation.org.uk

Family Action – family-action.org.uk

Fatherhood Institute –

fatherhoodinstitute.org

Maternal OCD – maternalocd.org

PANDAS Foundation –

pandasfoundation.org.uk

General Mental Health Support:

MIND - mind.org.uk/about-us/local-minds/

Samaritans - samaritans.org/

If you would like to seek support with anxiety or low mood you can contact your local Improving Access to Psychological Therapies (IAPT) Service. You can find your local service by searching your postcode on this website:

[https://www.nhs.uk/Service-](https://www.nhs.uk/Service-Search/Psychological-therapies-(IAPT)/LocationSearch/10008)

[Search/Psychological-therapies-](https://www.nhs.uk/Service-Search/Psychological-therapies-(IAPT)/LocationSearch/10008)

[\(IAPT\)/LocationSearch/10008](https://www.nhs.uk/Service-Search/Psychological-therapies-(IAPT)/LocationSearch/10008)

Crisis and Emergency Support:

If you feel concerned about your current mental state and are worried that you are unable to keep yourself, your child or others safe from harm, or, you are at risk of harm from others, then please contact Emergency Services by calling **999** or go to your local A&E department. You can find your nearest A&E by searching your postcode on this website:

<https://www.nhs.uk/Service-Search/Accident-and-emergency-services/LocationSearch/428>

Appendix G: Participant Survey

Screening Questions:

Please respond yes or no to the following questions

Are you 18 years of age or older? Yes No

Are you currently receiving inpatient care for your mental health? Yes No

At present, are you experiencing signs or symptoms of psychosis or mania?

(For example, hearing or seeing things that other people cannot hear or see/ having unusual thoughts that most other people do not have) Yes No

Have you had a baby in the past 24 months? Yes No

Demographic Questions:

This section will ask you to share some demographic information and some information about your recent pregnancy and mental health experiences.

Date of Birth: _____

What is your ethnicity?

White British

Indian

White Irish

Arabic

Any other White background

Chinese

Black African

Any other Asian background

Black Caribbean

Any other ethnic group

Mixed or multiple ethnic backgrounds

What is your religion?

Christian

Muslim

Buddhist

Jewish

Hindu

Sikh

No religion

Prefer not to say

Any other religious group: _____

What is your current employment status?

- | | |
|--|--|
| <input type="checkbox"/> Full-time employed | <input type="checkbox"/> Part-time employed |
| <input type="checkbox"/> Self-employed | <input type="checkbox"/> Full-time homemaker |
| <input type="checkbox"/> Unemployed – seeking work | <input type="checkbox"/> Student |
| <input type="checkbox"/> Unemployed – not currently seeking work | <input type="checkbox"/> Retired |
| <input type="checkbox"/> Prefer not to say | |

Obstetric Information:

Can you share when you gave birth? (most recent childbirth experience)

Was this your first child?

- Yes
- No
- Prefer not to say

Can you share how many children you have? _____

Are you currently pregnant? Yes No

Regarding your most recent childbirth, did you experience any of the following mental health difficulties postpartum?

- | | |
|---|--|
| <input type="checkbox"/> Post-natal depression | <input type="checkbox"/> Post-natal anxiety |
| <input type="checkbox"/> Postnatal Obsessive Compulsive Disorder | <input type="checkbox"/> Post-partum Psychosis |
| <input type="checkbox"/> Post-traumatic stress disorder (related to childbirth) | |
| <input type="checkbox"/> None of the above | <input type="checkbox"/> Prefer not to say |

Other: _____

Did you receive this diagnosis from a health professional?

- General Practitioner (GP)
- Psychiatrist
- Psychologist
- Any other health professional (please specify) _____
- Prefer not to say

Did you receive professional support for this mental health difficulty? Yes No

If yes, can you share the support you received: _____

Were you admitted for inpatient psychiatric care for your most recent postpartum mental health difficulty? Yes No

Please indicate how long did you spent in hospital: _____

Was inpatient care provided in:

General Psychiatry Unit

Mother and Baby Unit

If both please indicate how long you spent in each: _____

Prior to your most recent pregnancy, have you experienced any of the following mental health difficulties related to pregnancy or childbirth?

Ante-natal depression/post-natal depression

Perinatal anxiety

Perinatal obsessive-compulsive disorder

Postpartum psychosis

Post-traumatic stress disorder/traumatic birth

None of the above

Prefer not to say

Other (please specify): _____

Did you receive a diagnosis from a health professional at this time?

General Practitioner (GP)

Psychiatrist

Psychologist

Any other health professional (please specify) _____

Prefer not to say

Have you experienced any mental health difficulties unrelated to pregnancy, childbirth or during the postpartum period?

Depression

Anxiety

- | | |
|--|--|
| <input type="checkbox"/> Panic Attacks | <input type="checkbox"/> Obsessive-Compulsive Disorder (OCD) |
| <input type="checkbox"/> Bi-polar Disorder | <input type="checkbox"/> Schizophrenia or Schizoaffective Disorder |
| <input type="checkbox"/> Substance or alcohol misuse | <input type="checkbox"/> Post-traumatic stress disorder (PTSD) |
| <input type="checkbox"/> Eating disorder | <input type="checkbox"/> Prefer not to say |
| <input type="checkbox"/> None of the above | |
| <input type="checkbox"/> Other (please specify): _____ | |

Are you currently taking any medication for your mental health? Yes No

Have you ever been admitted for inpatient care for any of your past mental health difficulties?

Yes No

Appendix H: Participant Measures

Responsibility Attitudes Scale (RAS; Salkovskis et al., 2000)

This questionnaire will ask some questions about how you think or feel when faced with tasks, actions or events. It will take about 3 minutes.

Read each statement carefully and decide how much you agree or disagree with it. There is no right answer or wrong answer to these statements, just keep in mind what you are like most of the time.

	Totally Agree	Agree Very Much	Agree Slightly	Neutral	Disagree Slightly	Disagree Very Much
I often feel responsible for things which go wrong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I don't act when I can foresee danger, then I am to blame for any consequences if it happens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am too sensitive to feeling responsible for things going wrong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I think bad things, this is as bad as doing bad things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry a great deal about the effects of things which I do or don't do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To me, not acting to prevent disaster is as bad as making disaster happen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I know that harm is possible, I should always try to prevent it, however unlikely it seems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I must always think through consequences of even the smallest actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often take responsibility for things which other people don't think are my fault	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Everything I do can cause serious problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am often close to causing harm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I must protect others from harm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I should never cause even the slightest harm to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will be condemned for my actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I can have even the slightest influence on things going wrong, then I must act to prevent it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To me, not acting where disaster is a slight possibility is as bad as making that disaster happen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For me, even the slight carelessness is inexcusable when it might affect other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In all kinds of daily situations, my inactivity can cause as much harm as deliberate bad intentions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Even if harm is a very unlikely possibility, I should always try to prevent it at any cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Once I think it is possible that I have caused harm, I can't forgive myself

Many of my past actions have been intended to prevent harm to others

I have to make sure other people are protected from all of the consequences of things I do

Other people should not rely on my judgement

If I cannot be certain I am blameless, I feel that I am to blame

If I take sufficient care then I can prevent any harmful accidents

I often think that bad things will happen if I am not careful enough

Rosenberg Self-esteem Questionnaire (RSE; Rosenberg, 1965)

This is a short questionnaire which asks about how you're feeling about yourself. It will take about 1 minute.

Please select how much you agree or disagree with each statement.

	Strongly Agree	Agree	Disagree	Strongly disagree
On the whole I am satisfied with myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At times I think I am no good at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I have a number of good qualities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to do things as well as most other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I do not have much to be proud of	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I certainly feel useless at times	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I am a person of worth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish I could have more respect for myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All in all, I am inclined to think that I am a failure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take a positive attitude toward myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Guilt Inventory (GI) – State Guilt Scale (Kugler & Jones, 1992; Jones et al., 2000)

This is the second to last set of questions. It will take no more than two minutes.

Please select how much you agree or disagree with each of the following ten statements. There are no right or wrong answers.

	Strongly Agree	Agree	Undecided	Disagree	Strongly disagree
Lately I have felt good about myself and what I have done	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have recently done something that I deeply regret	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lately, I have been calm and worry-free	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I could relive the last few weeks or months, there is absolutely nothing I have done that I would change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At the moment, I don't feel particularly guilty about anything I have done	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would give anything if, somehow, I could go back and rectify some things I have recently done wrong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is at least one thing in my recent past that I would like to change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recently, my life would have been much better if I only hadn't done what I did	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have been worried and distressed lately	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lately, it hasn't been easy being me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Warwick Edinburgh Mental Wellbeing Scale (WEMWBS; Tennant et al., 2007)

This is the final set of questions, thank you for taking the time to get this far. These questions will ask you about general thoughts and feelings you have experience over the last **2 weeks**.

Please select the answer that best described your experience:

	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling useful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling interested in other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've had energy to spare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been dealing with problems well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been thinking clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling good about myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling close to other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been able to make up my own mind about things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling loved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been interested in new things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling cheerful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix I: Exploratory Analyses

Bivariate Correlations

As mentioned in the descriptive statistics, there was a significant difference between the time since illness onset between the PPP and PND groups. To examine whether there was a relationship between the time elapsed since illness onset and scores on the variables of interest, bivariate correlations were conducted with bootstrapping for the PPP and PND groups separately. No significant relationships were found in either group between time since illness onset and the three variables.

Independent Samples t-test

To examine wellbeing following a postpartum mental health difficulty, an independent sample's t-test with bootstrapping was conducted comparing PPP and PND groups on wellbeing (WEMWBS). The PPP group had significantly poorer wellbeing scores than the PND group ($t(44)=-2.32$, $p=0.045$, BCa CI 95% [-14.83, -0.7]).