AN EXPLORATION INTO THE OCCURRENCE OF UNUSUAL THOUGHTS
AFTER CHILDBIRTH

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Submitted in accordance with the requirements for the degree of

Doctor of Clinical Psychology (D. Clin. Psychol.)

The University of Leeds

School of Medicine

Academic Unit of Psychiatry and Behavioural Sciences

July 2015

The candidate confirms that the work submitted is her own and that appropriate credit has been given where reference has been made to the work of others

ACKNOWLEDGEMENTS

ABSTRACT

Background: It is increasingly recognised that the normative experience of early motherhood involves complex psychosocial transition and can be a time of anxiety, low mood and psychological vulnerability for many mothers. Hence, it is likely that the range of thought content women experience during this period is reflective of this complex process. Research indicates that during this period, healthy mothers can experience thoughts that are similar in content to women diagnosed with postpartum mental illness. However, studies have not yet investigated this hypothesis in relation to unusual thought content typically associated with postpartum psychosis. The current study aimed to investigate whether unusual thought content is experienced within a non-clinical population during the postpartum period. **Method:** A mixed methodology was used which involved an initial stage of qualitative data collection via online discussions with mothers (n=7). Unusual thought content identified from the qualitative data were subsequently used to inform an online cross-sectional survey; asking new and recent mothers to indicate whether they had experienced a list of unusual thoughts following childbirth (n=60). **Results:** Women in phase one of the study provided qualitative accounts of unusual thoughts with themes of potential harm, connection, and experiences of mediating the impact of such thoughts. In phase two, 83.3% of the sample reported experiencing at least one unusual thought postpartum. The thoughts reported were comparable in content to thoughts identified in accounts of postpartum psychosis; including thoughts of threat, paranoia, reincarnation and fear of the infant. Levels of anxiety and depressive symptoms were positively correlated with frequency of unusual thought occurrence. **Conclusions:** Unusual thought content, typically associated with postpartum psychosis can occur within non-clinical experience. Increasing awareness of the commonality of unusual thoughts may allow maternal health professionals to reassure mothers, potentially alleviating guilt and secondary distress which might arise from concealment or suppression of unusual thoughts. Further research is necessary to validate the findings in a larger more representative sample and to explore the range of associated variables.

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1. INTRODUCTION

Section 1 Postnatal Mental Health

The psychological wellbeing of women during pregnancy and the postpartum period is increasingly being recognised as a major public health issue. One which requires significant attention, due to the growing evidence associating perinatal mental disturbances with poor long-term health and social outcomes for mothers and their children (Department of Health, 2004; Barker, 2011; Centre for Mental Health, 2014). For all women, the postpartum is a time of particular emotional and psychological vulnerability (Henshaw, 2003), coinciding with the infants' first year, during which the mother-infant relationship is deemed key to maintaining healthy neurological and emotional development of the child (Murray & Andrews, 2000; Gerhardt, 2004). Therefore, the promotion of mental wellbeing and the reduction of psychological disturbances for mothers, during this time, are of considerable importance.

The costs associated with maternal mental health difficulties in the UK have been estimated at £8.1 billion to public services and £1.2 billion to the National Health Service (NHS) annually (Centre for Mental Health, 2014). The majority of these costs are linked to reconciling individual and societal complications, arising from the disruptions in care and emotional unavailability associated with poor maternal mental health. As such, supporting 'healthy' motherhood is deemed a priority in ensuring the future health of the nation (Centre for Mental Health, 2014). Whilst studies of maternal mental disorder, treatment and interventions are essential to improving these outcomes, so too is a greater knowledge of what occurs within the normative psychological transition to motherhood. The study of experiences within non-clinical populations can provide us with clearer distinctions of normality and abnormality; shifting the focus from pathology to improving psychological wellbeing for mothers across both clinical and non-clinical populations. According to the Department of Health, in order to promote maternal mental wellbeing, a greater emphasis is needed on understanding and raising awareness of the "normal emotional and psychological changes that take place during pregnancy and the

postnatal period" (Department of Health, 2004) hence, there is a need for investigation into the psychological experiences of the non-clinical postpartum population.

1.1 What Constitutes Normative Psychological Adjustment to Motherhood?

It is estimated that up to 70% of mothers in the non-clinical population experience some negative emotional response in the days following childbirth (commonly referred to as 'baby blues'), and a quarter of all mothers experience some form of psychological difficulty in adjusting to parenthood (Cox & Holden, 1994; Royal College of Psychiatry, 2011). Despite the noted impact of this transition on the psychological wellbeing of the majority of women, research has not been focused on mental health in the non-clinical population, but rather on the smaller number of women who develop clinical levels of anxiety, psychosis, postnatal depression and birth trauma. It seems that in our attempts at understanding maternal psychological health "pathology may have been stressed at the expense of normality" (Smith, 1999). Such gaps in knowledge and understanding of non-clinical childbirth related psychological experiences might result in normative responses being pathologised; when it is assumed that difficult experiences occur only within clinical disorders. Anne Oakley (1975; 2013), in an analysis of interviews conducted with women regarding their childbirth experiences; revealed that 40-50% of the women who had been labelled with postnatal depression were in actual fact just reacting to the impact of exhaustion, sleep deprivation, experience of hospitalisation and the shock of being "precipitated into a new occupation" (Oakley, 2013): illustrating how normative adjustment can be mistaken as symptoms of mental illness.

Additionally, societal reinforcement of ideologies, which define a normative response to motherhood as one of instantaneous love and intense joy, rather than acknowledgment of both positive and negative emotions during this transition, can result in feelings of guilt and shame when women's thoughts and feelings do not reflect such ideals (Sutherland, 2010). Persistent feelings of guilt can result in a sense of ineffectiveness that impacts on physical wellbeing and mental health (Harper & Arias, 2004), and has been linked to the development of depression

(O'Conner, Berry, Weiss, & Gilbert, 2002). Hence such feelings may impact on psychological wellbeing in otherwise healthy mothers (Sutherland, 2010).

1.1.1 Psychological Experiences in Clinical and Non-Clinical Populations

The study of mothers in the non-clinical maternal population is especially relevant, as growing research evidence suggests less of a distinct dichotomy between the experiences of individuals in clinical and non-clinical populations. For example, studies in psychosis have investigated the thought content and psychological experiences of non-clinical populations (Peters, Joseph & Garety, 1999; Johns & Van Os, 2001; Bentall, 2003) and a small number of studies have also investigated non-clinical maternal populations: comparing common postpartum experiences with symptomology of mothers diagnosed with mental illness (Jennings, Ross, Popper & Elmore, 1999; Hall & Wittkowski, 2006; Mannion & Slade, 2014). This study aims to build an insight into one aspect of normative postpartum; specifically to shed light on thought processes during this period and to investigate whether unusual thought content that is typically deemed indicative of postpartum psychosis is a feature in normative experience.

1.1.2 Current Understandings of Postpartum Psychosis

Postpartum or Puerperal Psychosis is described as one of the most severe categories of childbirth related psychological disturbance. For approximately 1-2 % of mothers, the onset occurs between the first two days and one month after giving birth. Initial signs are the experience of mild hypomania, often within 72 hours postpartum (Heron, McGuinness, Blackmore, Craddock & Jones, 2007) and amongst a range of affective and behavioural changes; delusional or unusual beliefs, confusion, altered thinking, hallucinations, mania and mood lability, which are common diagnostic features (Edwards & Timmons, 2005; Heron et al., 2007). Predominant episodes of depression and fluctuation between elation and depression are also commonly experienced, and as a result of such symptom overlap postpartum psychosis and depression have in the past been considered aspects of the same disorder and diagnostic labels

used interchangeably (Doucet, Jones, Letourneau, Dennis & Blackmore, 2009). Likewise, associations are found between higher proneness to development of non-perinatal psychosis and risk of depression (Verdoux, 1999), suggesting that the conditions might lie on the same continuum. However, despite such overlap, research indicates that postnatal depression is largely characterised by non-psychotic mood disturbance and differentiation is considered essential to appropriate classification and treatment (Doucet et al, 2009). Distinctions exist in relation to prevalence and onset, with postnatal depression occurring in approximately 13% of births from two weeks to one year postpartum, in comparison with the rare occurrence of psychosis (following 1-2% of births) with comparatively rapid onset symptoms occurring often within the initial two weeks after birth.

Whilst rare, the risk factors for postpartum psychosis are severe, with the evidence-base indicating a range of associated adverse outcomes for mother and child (Centre of Mental Health, 2014) including infanticide in 4% of cases and suicide in 5% (Monzon, Lanzan Di Scalea & Pearistien, 2014). Despite this, there is a dearth in clinical research and literature on postpartum psychosis and psychological frameworks have largely been neglected; in contrast to significant developments in cognitive-behavioural frameworks of depression and psychoses outside of the perinatal period (Garety, Kuipers, Fowler, Freeman, & Bebbington, (2001); Bentall, 2003; Morrison, Renton, Dunn, Williams, & Bentall, 2004). Consequently, whilst there are a number of psychological interventions provided for women diagnosed with postnatal depression, the treatments for postpartum psychosis are predominantly medical including hospitalisation, mood stabilisers and antipsychotic medication (Doucet et al. 2009).

Theoretical models and cognitive-behavioural interventions of non-postpartum psychosis have advanced notably in mainstream clinical psychology research and practice, providing evidence of psychological processes implicated in the development and maintenance of symptoms and associated distress. In the absence of a specific postpartum psychological perspective, it seems reasonable to draw upon aspects of existing theory in our attempts to understand postpartum psychosis and mental wellbeing.

1.1.3. A Continuum of Psychological Experience

Rather than the conventional medical dichotomy of normality versus illness, a number of researchers have investigated a proposed range in symptom experience spanning across normal and clinical populations. For example: worry, intrusive thoughts and psychotic experiences, have all been found to be present in non-clinical populations, and whilst varying in intensity and frequency, are found to be descriptively similar to the experiences of individuals with clinical diagnoses (Rachman & De Silva, 1978; Salkovski & Harrison, 1984; Bentall, Claridge, & Slade, 1989; Bentall, 2003). For example, in an early study by Rachman & De Silva (1978), researchers surveyed 124 individuals without a diagnosed mental health difficulty and found that 99 of the participants reported experiencing intrusive and 'unacceptable' thoughts. When they compared these to the thoughts of psychiatric patients, mental health professionals were unable to differentiate between the thought content of the clinical and non-clinical populations (Rachman & De Silva 1978).

More recently researchers have presented evidence that aspects of psychotic experience such as hallucinations and delusions also occur in individuals without mental illness: thus strengthening the theory of a continuum spanning non-clinical and clinical psychological experiences. The continuum model of psychosis (Peters et al., 1999; Johns & Van Os, 2001; Bentall, 2003) does not propose that the full range of psychotic symptomology are experienced by all individuals, nor does it minimise the impact of distressing psychotic experience, however it is proposed that lesser states of irrational thoughts and unusual perceptual experiences might occur as aspects of normal experience (Johns & Van Os, 2001).

Peters et al (1999) found support for continuity of the thematic content of 'delusional' thoughts by comparing scores on the Delusion Inventory (a 21 item self report measure of delusional ideation) between 272 adults without a diagnosis and 20 inpatients experiencing psychosis. They found that despite inpatients scoring higher, the range of scores between the healthy group

and individuals with psychosis were closely aligned and "nearly 10% of the healthy sample scored above the mean of the inpatients" (Van Os, 2003 p245.). Another study by Freeman et al. (2005) investigated the prevalence and frequency of thoughts with paranoid content in the non-clinical population, 1202 participants were asked to complete an anonymous Internet survey, which included a checklist of paranoid ideas. Results indicated that 30% of these young adult participants, recruited from a non-clinical population, endorsed the experience of paranoid thoughts (Freeman et al. 2005). Whilst generalisability of these findings to the general population is limited by the use of a student sample, the study does provide support for the notion that individuals in the non-clinical population can experience paranoid ideation, similar in content to delusional ideation and without a pathological cause.

If we extend these findings to psychotic experience within the postpartum, it seems plausible that mothers may also experience some psychotic-like, unusual thought content with the absence of pathology. But as postpartum mental health research has traditionally focused on clinical populations, we know much less about the psychological experiences and thought content of mothers in the non-clinical population. Therefore, it is difficult to identify the extent to which thought content converges across non-clinical and clinical postpartum populations.

Section 2 Psychosis, Unusual and Intrusive Thoughts

Whilst there is a range of terminology used across the literature in reference to thoughts typically associated with psychosis (e.g. delusional, disturbing, alternative and psychotic-like thoughts), for the purpose of investigating these experiences in the current research study the term unusual thoughts will be used. The term unusual refers to thoughts or beliefs that others in an individual's social environment are unlikely to share or would consider unrealistic (British Psychological Society, 2000; 2014). For example, thoughts with content of an extremely suspicious, paranoid or grandiose nature. This language is adopted from the term 'unusual

beliefs'; more recently used in psychological literature to describe thoughts medically defined as 'delusions' (BPS, 2000; 2014).

Interestingly, a number of cognitive-behavioural models have identified the experience of thoughts described as intrusive within psychotic experience (Freeman, Garety, Kuipers, Fowler, & Bebbington, 2002; Morrison 2001; Morrison, Haddock &Tarrier, 1995). Whilst the term unusual refers to the nature of thought content, intrusive refers to the manner in which the thought presents within an individual's stream of consciousness. Intrusive thoughts have been identified in the experience of both clinical and non-clinical groups (Rachman & De Silva, 1978), defined as "thoughts, images or impulses that are experienced as unwanted and uncontrollable and interrupt ongoing activity" (Harrowitz 1975; Rachman 1981). However, in recognition of the noted commonalities in unusual religious, violent, sexual and culturally unacceptable content (Chadwick & Birchwood, 1994); Morrison (2005) argues that intrusive thoughts with unusual content in non-clinical experience might be the same phenomena as delusional thoughts; only that in psychotic experience they are appraised and consequently labelled differently.

The characteristics of unwanted thought intrusions have been identified as including:
- A distinct thought, image or impulse that enters conscious awareness
- Considered unacceptable or unwanted,
- Interferes in on-going cognitive and or behavioural activity,
- Is unintended and nonvolitional
- Can be recurrent or repetitive
- Is highly distractible
- Is associated with negative affect (anxiety, dysphoria and guilt)
- Difficult to control

(Clark, 2005 – The primary properties or dimensions of clinically relevant unwanted intrusive thoughts, images or impulses pp.5)

Morrison and Baker (2000) conducted a study assessing distressing intrusive thoughts across two clinical groups and a non-clinical group. One clinical group were currently experiencing

auditory hallucinations and the second clinical group had a diagnosis of psychosis, but without current auditory hallucinations. These were compared with a non-clinical control group on a measure of distressing thoughts (Distressing thought questionnaire – Clark & De Silva, 1985). Results indicated that all groups experienced anxiety and depressive focused, intrusive thoughts, however the clinical group experiencing auditory hallucinations experienced significantly higher numbers of intrusive thoughts than the other groups and were more distressed by such thoughts. Evidencing a link between intrusive thoughts and symptoms of psychosis (Morrison & Baker, 2000)

Morrison (2005) proposed that both clinical and non-clinical populations might experience intrusive thoughts or impulses, for example to 'throw their child across the room'. However for the non-clinical individual they may dismiss the thought and relate it to tiredness and stress, which is unlikely to result in mental illness. If the same thought is appraised as coming from an external source, however, such as a higher being or someone from beyond the grave, this would be interpreted as a psychotic delusion (Morrison, 2005). Similarly the same intrusive thought when fused with action (e.g. TAF described by Wells, 1997), might lead to suppression, preventative rituals and development of an obsessive-compulsive cycle (Morrison, 2005). Suggesting that one characteristic differentiating psychotic-type clinical intrusions and non-clinical thought intrusions is the individual's appraisal and attribution of the source of the thought. Such links suggest that these types of thoughts might be those identifiable at a lower end of the proposed continuum of psychotic experience.

1.2 Emotion, Psychosis and Unusual Thoughts: The link

The combination of physical and psychosocial stressors activated in this early transitional period into motherhood, may be one explanation for vulnerability to the experience of unusual thought content during the postpartum period. Parkinson and Rachman (1981) found that mothers' intrusive thoughts about their children were heightened in those currently experiencing a significant child related stressor, when compared to mothers without this stressor. They

concluded that emotionally stressful events might increase the likelihood of intrusive and unpleasant thought content (Harowitz 1975; Parkinson & Rachman, 1981). This recognition of the role of heightened emotion in psychological experiences may be a key factor in the proposed continuum hypothesis of postpartum psychosis. For example, the stress-vulnerability model of psychosis development suggests that psychotic symptoms arise from interplay between individual levels of vulnerability; stressful environmental and life events (Zubin & Spring, 1977). The theory suggests that dependent on a range of characteristics, each individual has an innate stress threshold, which when exceeded can trigger positive symptoms of psychosis; shown by research which indicates that individuals diagnosed with psychosis react with greater emotional intensity to subjective appraisals of stress in daily life (Myin-Germays et al., 2003). Even for healthy women the early postpartum can be a period of anxiety, overwhelming change, a strong sense of loss, isolation and fatigue (Rogan, Shmied, Barclay, Everitt, & Wyllie, 1997) and some theorist suggests that childbirth is in itself a significant life stressor and hence a trigger for psychotic and other postpartum mental illness (Brockington, 1996; Jones & Craddock, 2001). Hence this heightened level of stress at a time of particular vulnerability may be a factor in inducing some lesser states of delusional ideation in some mothers, whilst for others it results in a clinical episode.

Theorists have also investigated the role of emotion in contributing to the experience of psychotic phenomena, such as delusional ideation, (Maher, 1974; Garety et al., 2001; Freeman & Garety, 2003; Morrison & Wells, 2007) and propose that delusional ideations may be manifestations of emotional concerns. Freeman and Garety (2003) present evidence of parallels between emotional themes and the thematic content of delusions to support this theory. For example, anxiety (concerned with anticipation of danger) is reflected in persecutory delusions and beliefs in a heightened sense of the threat posed by others (Freeman & Garety, 2003). Likewise, elation has been associated with delusions of grandiosity, and negative affect has been linked to delusions of catastrophe (Freeman & Garety, 2003).

Morrison and Wells (2007) tested the hypotheses that worry; "the persistent awareness of possible future danger, which is repeatedly rehearsed without being resolved" (Matthews, 1990 p.456), could be associated with psychotic experiences.

The researchers measured and compared levels of anxiety, psychotic symptoms and depression across groups of clinical and non-clinical participants on a range of psychometric measures. Regression analysis indicated a positive relationship between dimensions of worry and delusional ideation (Morrison & Wells, 2007), supporting the implication of emotions in the formation of delusional ideation. Whilst emotions do not always lead to the experience of delusions these studies suggest that emotional disturbances may be a contributory factor and that anxiety, in particular, may be a key emotion contributing to persecutory thoughts. According to Freeman et al. (2002) in most cases the content of delusions will be consistent with the individual's emotional state (Freeman et al. 2002). If so, we may expect the delusional ideation and thought content in mothers experiencing postpartum psychosis to reflect themes of typical infant and motherhood related emotional concerns.

1.2.1 Unusual Postpartum Thoughts

Descriptions of postpartum psychotic thought content in the literature are scarce, perhaps due to the sensitive nature of what some mothers describe as "unspeakable thoughts" (Glover, Jomeen, Urquhart, & Martin, 2014). However, the available descriptions provide some insight into ideas, which may be a reflection of motherhood related anxieties manifested in delusional ideation. Chandra, Bhargavaraman, Raghunandan, and Shaligram, (2006) conducted a study to investigate the prevalence and experience of delusions in 56 women diagnosed with postpartum psychosis. Their findings revealed content of unusual psychotic thoughts which were related to the infant included themes such as *"someone will take the baby away"*, *"someone will kill the baby", "the baby is the devil or ill fated", "the baby is God", "It is someone else's baby"* and *"the baby is dead"*. These thoughts were categorised as delusional, due to the unusual and

persecutory content, but also due to the strength of conviction in the thought. As with traditional forms of psychosis the ideas tended to span the same thematic content of threat, catastrophe and grandiosity, mapping broadly onto the emotions of anxiety, depression and euphoria.

A few qualitative studies have also provided accounts of the thought content of mothers derived from accounts of postpartum psychosis. For example, Engqvist, Ferszt, Ahlin, and Nilsson, (2011) analysed Internet narratives of mothers describing their psychotic experiences. They reported religious ideas about the baby being Jesus, suspicions that others wanted to take the baby, thoughts that they had killed the baby and thoughts that the baby was ill or dying (Engqvist et al. 2011). Rhode & Marneros (1993) identified consistent ideas of persecution, grandeur, contact with God and the baby being exchanged or dead. A more recent exploration into experiences during the first few days of postpartum psychosis by Engqvist and Nilsson (2013), revealed mothers' expressions of unusual ideas that *"the child was about to eat her"*, *"the baby was from a different planet"* and again that there was a *"conspiracy against them"* (Engqvist & Nilsson, 2013). The thematic consistency across qualitative accounts provides a strong indication of postpartum psychotic clinical ideation.

If we hypothesise that such ideations lie on a continuum from the experience of unusual or irrational thoughts to stronger delusional beliefs, we might expect that women at the non-clinical end of the continuum may experience some lesser states of unusual thought content, whilst maintaining recognition that the thoughts have an irrational nature. For example, the most publicised psychotic thoughts are those of infant harm and infanticide and such thoughts have typically been rationalised by serious mental illness. However thoughts of intentionally harming the infant have been identified in non-clinical mothers (Jennings, Ross, Popper, & Elmore, 1999; Fairbrother & Woody, 2008) and thoughts of accidentally harming the infant (potentially a less extreme version) have been identified in greater prevalence (Fairbrother & Woody, 2008). The most common theme in the unusual thought content described above and in thoughts of harm is fear; fear of the infant and mainly of what might occur. Consistent with the proposed

link between emotional concerns in formation of delusional ideation (Freeman & Garety, 2003), such thoughts may be a manifestation of mothers emotional concerns, however without a diagnostic explanation disturbing thoughts may be more difficult for mothers' to make sense of.

Section 3: Theoretical Perspectives

From an evolutionary perspective it is likely that the emotional concerns of mothers who have just given birth follow a similar thread: To protect the newborn from external sources of threat and harm, making sense of accountability for the survival of another and familiarising oneself with the new infant.

Whilst we may favour some emotions over others, emotions deemed less pleasant such as anxiety, anger, disgust and sadness are all functional and a normative aspect of the human response (Gilbert, 2010). For example, sadness following childbirth has been linked with the findings that mothers with postnatal depression often have lower levels of social support in caring for their infants, and as such the evolutionary function of depression may be to elicit support from others (Tracey, 2005; Hagen, 2009). Other 'unpleasant' emotions can be seen as essential to survival; they form part of a protective system and as such have a more dominant role, in our brains, than positive emotions (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). Society would expect a mother to protect the wellbeing of her offspring and in this way emotional concerns and anxieties around motherhood and infant wellbeing can be normalised.

This overwhelming drive to protect can be explained through our understanding of the brain and emotional regulation systems. According to theorists the processing of emotions within the brain is regulated by one of three major emotion systems (LeDoux, 2002; Panksepp 1998; Gilbert, 2009; Dupue & Morrone-Strupinsky, 2005), which interact and influence our motivations. There is a drive system, a soothing system and a threat system, the latter of which is focused on protection and safety. When activated the brain's threat system is focused on identifying and preparing us to respond to threat, so "attention, thinking, reasoning, behaviour,

emotions, motives, images and fantasies can be threat focused" (Gilbert, 2010 p45). Anatomical studies of the amygdala have indicated the role of this area of the brain in responding to sensory indications of threat by activating emotional behavioural, autonomic and endocrine responses (Fellous, Armony & Ladoux, 2002).

It is suggested that maladaptive responses and mental distress occur when our ability to calm the threat system is under-developed, our methods of coping with the sense of threat inadvertently maintain it, or environmental factors continuously activate the system leading to prolonged or intense responses (Gilbert, 2009). A healthy response involves activation of the system when necessary, followed by deactivation once the situation is deemed familiar or safe. Hence a transient focus on potential dangers and hyper-vigilance toward threat, in a mother who has just given birth to her baby would appear to be a natural response; functional to protection and survival.

A "better safe than sorry processing system" (Welford, 2012 p.11) describes the brain's tendency towards overestimation of threat. From an evolutionary perspective the consequences of failing to recognise threat are much greater than to mistakenly believe a threat is present (Dodgson & Gordon, 2009 cited in Kelleher, Jenner & Cannon, 2010), accounting for a natural tendency toward irrational processing (Welford, 2012).

One perspective is that symptoms such as delusions of a persecutory nature provide an evolutionary advantage when understood as hyper-vigilance to threat (Kelleher, Jenner & Cannon, 2010). Thus the experience of cognitions, which are threat focused or over concerned with catastrophe, may occur as a natural drive to protect the infant. It would make less evolutionary sense for mothers to only experience thoughts of happiness and contentment, as these do not drive protection of her precious offspring.

1.3 Sleep Disturbances

Sleep disruption, is a significant aspect of the postpartum period and may also contribute to unusual cognitive states. It is usually expected that during both late pregnancy and the postpartum period, that sleep will be 'broken' due largely to the infant's sleep, waking and feeding cycles, women typically need more sleep and have a higher frequency of naps (Karacan et al., 1969), possibly linked to the increased need to replenish lost reserves. The specific manner in which sleep patterns are affected during the postpartum period has been identified as the recovering of stage four sleep from pregnancy (a stage of sleep which is particularly intense, hence, being woken can result in disorientation), reduction of stage five REM sleep (dreaming state) and frequent awakenings (Branchey & Petre-quadens (1968); Anders & Roffwarg, 1968 cited in Sharma & Mazmanian, 2003). The disruption is most pronounced during the first and second week postpartum with women spending up to 20 per cent of the night awake (Lee, Zaffke, & McEnany, 2000; Shinkoda, Matsumoto, & Park, 1999).

Sleep deprivation has long been associated with transient psychosis-like experiences and between 42 and 100 per cent of individuals with psychosis suffer from sleep disturbance (Hunt & Silverstone, 1995). Freeman, Pugh, Verontsova, and Southgate, (2009) conducted a questionnaire study to investigate the relationship between sleep disturbances, mood and paranoid ideation. They asked a group of participants from the general population and a clinical group to complete standardised measures to assess, insomnia severity, sleep disruption, paranoid thoughts and a measure of depression and anxiety. Logistic regression analysis indicated that higher levels of insomnia were associated with higher frequencies of persecutory thinking (Freeman et al., 2009). The relationship appeared to be mediated by scores on levels of anxiety and depression, however the associations do not indicate whether paranoid thoughts result in sleep disruptions or rather are a result of poor sleep. The authors suggest that the lack of sleep in combination with anxiety may create an unusual internal state, which is incorrectly appraised by the individual as external threat (Freeman et al., 2009), maintaining emotional arousal and associated cognitions.

Sleep disruption is not only due to the necessity of waking to carry out caring activities, but has also been linked to effects of the increased production of hormones such as oestrogen which studies have shown to impact directly on sleep waking cycles and cognitive functioning (Ahokas, Aito & Rimon, 2000; Clarke & Goldfarb, 1989). Aside from the research evidence, it is a common human experience that lack of sleep can impact on mood and cognition. Poor sleep is commonly associated with delirium-type (disorientation and disturbance to mental ability) states, and disturbed or confused thinking, which has also been described as one of the most intense symptoms in postpartum psychosis and difficult to distinguish from mania (Marce, 1858 cited in Sharma & Mazmanian, 2003). In brief, the state of mind during the postpartum is commonly subject to sleep disturbances, all of which may contribute to a period of confused and potentially unusual thinking patterns during the early postpartum period.

1.3.1 Unacceptable thoughts

From a cognitive behavioural perspective the consequences of thoughts and events are determined by the meaning we assign to them (Ellis, 1962; Beck, 1967). Hence, a distress response is mediated by the beliefs we form about our cognitions. Beliefs about how a mother should think and feel, acceptability of thoughts and behaviour, will be informed by previous experiences and dominant messages we receive from others. In this case unpleasant and unusual cognitions are rarely associated with non-clinical experience or discussed as a normative aspect of motherhood. Consequently, women may fear the threat of societal judgement and pathology, leading to shame, feelings of inadequacy and incompetence; emotions which have been linked to the development of depression (Douglas & Michaels, 2004; Warner, 2005).

Additionally, our mental capacity to think about and make judgements on our thoughts (Wells, 1997) can create internal threat and conflict. When the 'old brain' (Cerebellum-primitive responses) is activated to produce physiological and psychological survival responses, but with 'new brain' (Cerebrum-conscious thought) capacities, we appraise these responses negatively,

self-judgement can maintain activation of the threat system (Gilbert, 2009). For example, a mother's reflection that an unusual thought is indicative of mental illness, that she is a bad mother, or will act on the thought, may lead to thought suppression and secondary emotional distress.

Fairbrother and Abromowitz (2007) argued that when mothers experienced infant harm-related thoughts after childbirth, the progression to Obsessional Compulsive disorders developed due to appraisal of the thoughts as catastrophic, overestimating the probability of harm and overestimating their responsibility for preventing harm (cited in Murray & Fin, 2011). Hence, a key determinant of outcome for clinical consideration is providing research and knowledge, which allows mothers to appraise their experiences more accurately. If it is a normal phenomena then more research and awareness is needed to avoid pathologising and contributing to undue distress.

Section 4: Psychosocial and Psychodynamic Frameworks

1.4 Societal stigma and silence

Becoming a mother is a life event, which, in particular, generates social judgments. Brown, Small, & Lumley, (1997) and Marchant (2004) explored common western social concepts of good motherhood and found that stereotypical ideals included a mother being relaxed and calm at all times, a good communicator, understanding, sensitive to the needs of the child, altruistic and undemanding (Brown et al, 1997; Marchant 2004). These mothering ideals are in direct contrast to studies, which have suggested that episodes of unusual, frightening and depressive thoughts can be common experiences for women in the early period after childbirth (Hall & Wittkowski, 2006; Fairbrother & Woody, 2008). It is hypothesised that these brief postpartum experiences may be an aspect of normal psychological transition into motherhood or cognitions of a protective nature aroused by emotional concerns, however the social unacceptability and pathologising of non-ideal experiences make it understandable that unusual thoughts are not commonly discussed.

Stigma is a powerful concept, in that a 'label', such as 'mental illness', can result in rejection, discrimination, isolation and tainting of one's identity (Goffman, 1963). However, in semi-structured interviews, Edwards and Timmons (2005) reported that mothers preferred the label of mental illness as it relieved their concerns that difficult thoughts and experiences were due to personal defects, being a "freak or a bad mother" (Edwards & Timmons, 2005). Rather their experiences could be 'medicalised' and treated, an explanation, which may relieve the sense of onus. If unusual thoughts do occur, further understanding is necessary to allow healthcare professionals to provide an alternative non-pathologising explanation. In the incidence of non-clinical disturbing cognitions in the postpartum, sharing the commonality of the experience with new mothers is recommended to increase awareness and acceptability (Hall & Wittkowski, 2006).

1.4.1 Mediating the Impact of 'Unacceptable' Thoughts

Psychodynamic theory has historically referred to the interplay between unconscious and conscious parts of the mind in psychological experience (Freud, 1915). Mild experiences of obsessional thoughts, irrational fears and anxieties, referred to as neuroses, are considered expressions of unconscious instinctual urges, which have arisen in conscious awareness. The instinctual urges are deemed unacceptable and so the mind employs coping mechanisms or psychological defences as a barrier to keep socially disturbing thoughts out of conscious awareness. When balanced these defences are deemed a normal aspect of psychological processing, as are some intrusions into consciousness. However, imbalance and dominance of these defences, for example, through repression, which results in failure to acknowledge and integrate both the positive and negative qualities of oneself or one's experiences, has been implicated in a range of mental health difficulties (Anna Freud, 1937). For example, some theorists have suggested that the symptoms of psychosis: hallucinations and delusions are psychological defences that arise against underlying feelings of low self-esteem. Rather than the distressing reality of hatred and rejection ensued, for example, by abuse or societal treatment, a

delusion of grandeur may act as a defence to allow someone to believe they hold a valued position in society, thus externalising events that are threatening to the self (Bentall, 1994; Bentall, Kinderman, & Kaney, 1994). Similarly, according to Resick and Schnicke (1992) symptoms of post traumatic stress disorders (PTSD) are experienced when events challenge 'self' or world schemas, and the mind experiences events, which are "discrepant with our world view", resulting in thought intrusions, memory flashbacks and intense emotions (Resick & Schnicke 1992).

Gracie et al (2007) found evidence to support such theories in an association between traumatic experiences, negative beliefs about the self and a predisposition to paranoid thoughts. Whilst the psychological experiences described are at an extreme end of the spectrum, these examples highlight the importance of encouraging the acceptance of both positive and negative aspects of normal postpartum experience in order to maintain psychological health. If these thoughts are a normative aspect of childbirth then not providing mothers with the information they need to accurately appraise and accept them as normative may lead to maladaptive coping and subsequent distress.

1.4.2 Psychodynamic Theories of Motherhood

A theory described within the psychodynamic literature of motherhood is the concept of maternal ambivalence, which Parker (1994), described as the mothers mixed emotions of both love and hate for their infant. In line with Freudian theory that mixed feelings are an aspect of all human relationships, Raphael–Leff (2010) described the conflicts of the normal mother who is faced with the new and disruptive experience of exhaustion, hormonal fluctuation and the infant's crying, yet in order to sustain 'maternal ideals' must bury feelings of irritation and frustration. Additionally for some women who have experienced trauma or deprivation in their own infancies, their unresolved feelings and trauma, are projected into the current relationship with the infant (Raphael-Leff, 2010). This reawakening of feelings of rage or resentment can

result in intrusive thoughts, amongst other symptoms of distress, and in some cases can lead to involuntary thoughts of harming the infant (Raphael–Leff, 2003; 2010).

Parker (1994) provides clinical examples of women who have experienced aggressive fantasies towards their children, which the mothers described as "horrifying, bewildering and guilt inducing". However, she notes the clinical account of one mother who described the thoughts as a 'safety catch', recognising a cathartic benefit of the expression of mixed emotions towards the child in increasing awareness and preventing negative actions. Whilst to acknowledge mixed feelings is described as development of healthy ambivalence, the denial or suppression of negative emotions is understood in psychodynamic theory to result in maternal psychological distress (Raphael- Leff, 2010).

Section 5: Clinical Implications

1.5 How Might Women Respond to the Experience?

Research into the experience of disturbing infant related cognitions in non-depressed mothers allows for consideration of the implications of how women may respond when thoughts are deemed unacceptable or incongruent with their mothering identity. Murray & Fin (2011) conducted a qualitative study exploring non-clinical mothers' experiences of thoughts of harming their infants. They conducted six individual semi-structured interviews with mothers, all of whom reported experiencing thoughts of harming their babies. The participants were asked to describe the content, pattern and feelings associated with their thoughts and interviews were transcribed verbatim (Murray & Finn, 2011).

Amongst other key findings were the psychological strategies that mothers employed in mediating the impact of the thoughts on their identities. For example, some of the women report attributing the disturbing thoughts to another person inside of them, in this way using coping mechanisms (described in psychodynamic theory) of 'splitting' and 'externalising' in order to retain the view of themselves as 'good' mothers, which they found difficult to accept in light of

their thought content (Murray & Fin, 2011). In line with Edwards and Timmons' (2005) findings, some of the mothers also reported that it was easier to attribute the thoughts to a biological cause, such as postnatal depression in order to both accept themselves and be accepted by society. Feeling that they would not be understood or receive sympathy if they admitted that they experienced these thoughts without mental illness (Murray & Fin, 2011).

In contrast, rather than detaching from the experience, two of the respondents reported their acceptance of the thoughts. One mother understood the thoughts as a maternal instinct for vigilance stemming from her role as "mediator of danger" for her baby, which allowed the integration of the thoughts, into her identity as a 'good' mother. Likewise another mother described the thoughts as being based in fear and acknowledgment of destructive potential in both the world and the mother herself (Murray & Fin, 2011).

Whilst the findings cannot be generalised to all mothers, the extracts hold important clues to the potential clinical implications arising from the way in which mothers cope with their experiences at both non-clinical and clinical ends of the continuum.

1.5.1 Implications for Treatment and Support

While diagnostic labels might allow some mothers who experience psychosis relief in attributing their thoughts to a biological cause, the psychological impact of such experiences for women in this clinical population remain significant. For example, Glover et al (2014) found that following recovery women continued to experience distress at the recollection of the content of their unusual thoughts. However, despite such noted psychosocial impact, treatment and recovery for postpartum psychosis continues to be predominantly medical; women are usually treated with mood stabilisers, hormones and/or anti-psychotic medication and monitored within perinatal mental health services until symptoms subside (Doucet et al 2009; National Institute for Health and Care Excellence, 2014). Such medical interventions are unlikely to address the distress and feelings of guilt or self-criticism, which may ensue in recollection of

psychosis related thoughts and behaviours. Additionally, the 'unacceptable' nature of thoughts may leave women feeling isolated and unable to discuss their experiences with others.

Whilst there is not yet a specific psychological explanatory model for postpartum psychosis more recent clinical guidelines have included psychological interventions as additional treatment options, recognising the potential benefits of Cognitive Behavioural Therapy for Psychosis and Family Therapy in mediating the impact of thoughts and experiences of postpartum mental illness (NICE, 2014).

Additionally in the third sector, Action for Postpartum Psychosis (a UK research, information and support network) provides both peer support and an online counsellor led discussion forum for women who have experienced postpartum psychosis. Recognising the importance of provision of a safe environment for women to express difficult thoughts and experiences, which they may not have felt able to share with health professionals, family members or friends due to fear of judgement. By facilitating acceptance and understanding from others; opportunities for sharing, exploring and appraising disturbing thought content within psychological therapies and via peer support networks may mediate secondary distress. Such opportunities are also likely to be beneficial for women who experience unusual thoughts at a non-clinical end of the continuum.

1.5.2 The Benefits of a Compassionate Response

If, as suggested the transient experience of unusual and irrational thought content after childbirth can be linked to the activation of the brain's threat system, then counter activation of the soothing system will maintain a balance between the systems and, in turn, a sense of wellbeing. According to Compassion Focused Therapy (CFT) advanced by Gilbert (2009), this is achieved through compassionate responses, which stimulate the soothing system, reducing the dominance of the threat system. Research evidence indicates that activity in the amygdala decreases in healthy participants when they are asked to re-appraise negative stimuli (Johnstone,

Van Reekum, Urry, Kalin, & Davidson, 2007). Functional magnetic resonance (fMRI) studies have also identified that the Insula, the same area of the brain activated when we show compassion for others, can be activated when participants are asked to read self-reassuring statements to themselves, in response to a scenario designed to elicit shame (Longe et al., 2009). As expected, activity decreased in the Insula and increased in the amygdala when participants were asked to be self critical in response to the same scenario. Self-reassurance and compassion have also been linked to the natural release of oxytocin (Neff, 2003), a chemical that has been found to decrease maternal anxiety, increase calmness and facilitate bonding (Moore, Anderson & Bergman, 2009).

In CFT external threat ensues from our fear of rejection from others and internal threat from our internal feelings and criticisms (Gilbert, 2007). Some of the women in Murray & Fin's study responded to their experiences with self-compassion, which likely increased their sense of wellbeing (Murray & Fin, 2011). Normalising and increasing awareness of unusual thoughts for health professionals and mothers, can encourage understanding and compassionate approaches towards women's experiences, thus promoting healthy responses.

Section 6: Previous Research on Disturbing and Unusual Thoughts in Non-clinical Maternal Populations

The literature most relevant to this current study are the few studies which have compared the experiences of non-clinical postpartum populations with clinical postpartum populations in relation to other 'unacceptable' thought content, such as negative and infant harm related cognitions. Jennings et al (1999) investigated the occurrence of mothers' thoughts of harming infants and other disturbing cognitions, in depressed versus non-depressed mothers. The authors assessed the prevalence of thoughts of harming the infant in a group of 46 matched control participants, without current or previous depression, and compared the frequency of thoughts of harm with 100 mothers who met the diagnostic criteria for depression or bipolar disorder. As part of semi-structured interviews delivered by a clinician, the mothers were asked to rate, on a

five-point scale thoughts or actions related to harming their child. Possible responses ranged from having no thoughts of harm to having potentially harmed the child. Depressed mothers were also assessed on a number of additional psychiatric measures and on fear of being alone with the infant and inability to care for the infant.

Findings indicated that whilst thoughts of harming were much less common in non-depressed mothers, 7% did endorse experiencing thoughts of harming their infants. These were reported as passing thoughts in contrast to 41% of depressed mothers, some of which experienced such thoughts repeatedly. The researchers concluded that harm related thoughts, whilst rare, occur in a milder form in women who are not depressed. However they also felt that the findings underestimated the true frequency of the occurrence, due to women's fear of repercussions that such thoughts would be reported to child protection services. Perhaps the women with depression felt that their thoughts could be attributed to their mental health difficulty and felt able to be more honest, in comparison with the non-depressed mothers, who, without an explanation for their experiences, feared judgment. The presence of the clinician in conducting the interview may have added to reluctance to share their thoughts, resulting in biased findings.

The researchers hypothesised that passive thoughts, for example harm coming to the infant unintentionally or accidentally, may be a more common occurrence. However, the measure used to assess the experience of thoughts was insensitive to the potential range of thematic content; only measuring 'intentional harm', whilst other themes e.g. passive or accidental harm may have been experienced. Whilst the quantitative design allowed for the comparison of clinical and non-clinical thoughts; fear of being alone with the infant and inability to care, were measured only in the depressed group of mothers. Additionally, the full range of measures was not conducted with the non-depressed group, which may have provided further comparison data. The study provided us with only frequencies and little information regarding the content and impact of such thoughts, hence the necessity of further research, perhaps exploring thought content in more detail. Despite limitations the study does provide an impetus for researching

disturbing thought content in non-clinical postpartum populations, which prior to this had been given little attention.

Another study by Hall et al (2006) explored the occurrence of negative thought content in mothers following childbirth. The researchers conducted qualitative semi-structured interviews with a group of women who had experienced postnatal depression. The women scored above the clinical threshold on the Edinburgh Postnatal Depression Scale (Cox, Holden, & Sagovsky, 1987) and were recruited by specialist health visitors. The interviews were unstructured and allowed women to express the content of their thoughts, these were then transcribed and analysed and the derived themes were used to form a questionnaire. The questionnaires were then distributed in a quantitative survey to non-depressed women, 185 of which completed and returned the questionnaires via post. Results indicated that all but one of the negative thoughts were endorsed by mothers in the non-depressed group and 62% reported experiencing thoughts about their infant's death. Other themes found in the thoughts of women with and without depression included, *'the need to be perfect'; feeling negatively judged; unfulfilled expectations of motherhood and fears for their own and their babies' future*. In light of the comparison the researchers reported, that the cognitions experienced by women who had a diagnosis of postnatal depression were not pathologically different from postnatal experiences of the non-clinical group (Hall & Wittkowski, 2006). The mixed methodology provided much more information and data than the study reported by Jennings et al. (1999), presenting clear evidence for a continuum of experiences across clinical and non-clinical postpartum groups. A further development of the study may have been to screen survey participants on measures other than the EPDS to identify other symptoms or variables, such as anxiety or sleep disruption; potentially associated with a mother's negative cognitions. However the research leads us to think about whether mothers can also be compared across other types of cognitions, aside form depressive ones.

These studies indicate parallels in the thoughts of mothers with and without postpartum illness, in regards to depressive and harm related thoughts. It is also plausible that some of the unusual

thought content, which features in postpartum psychosis, may also be experienced within the normal population. However, there has been little published research that has compared the thoughts of healthy mothers with those experienced by mothers with postpartum psychosis.

Mannion and Slade (2014) recently conducted a longitudinal investigation into 'psychotic-like' experiences (PLEs) in women without psychosis during pregnancy and the postpartum. The researchers recruited 101 women and collected data during pregnancy (time 1) and again following childbirth in the early postpartum (time 2). The participants were assessed at each time point on a number of measures including the Peters Delusion Inventory (Peters et al, 1999): a measure of delusional ideation designed for use in clinical and non-clinical populations, and the Launay Slade Hallucination Scale - LSHS (Bentall & Slade, 1985). Additional measures were the Edinburgh Postnatal Depression Scale (Cox, Holden & Sagovsky, 1987), the Edinburgh-Warwick Mental Well-being Scale (Tennant et al., 2007) and the Pittsburgh Sleep Quality Index (Buysee, Reynolds, Monk, Berman, & Kupfer, 1989). At time 1, participants were also asked a single question to rate their anxiety and fear of childbirth and at time 2, within the postpartum questionnaire, were asked whether or not they felt fearful for their own or their baby's life. Of the 101 participants who completed the questionnaire measures at time 1, only 66 mothers provided data at time 2. Descriptive statistics and regression analysis were conducted on the data to assess for levels of PLE's at each time point and potential predictors.

The authors report that during pregnancy (time 1), 81% of the sample endorsed an item on the delusion measure and 76% endorsed at least one item on the measure of hallucinations. In the follow-up during the postpartum (time 2), the prevalence reduced to 59% of participants indicating that they had experienced at least one delusion since their recent childbirth and 52% reported experiencing at least one hallucination since childbirth, from which they concluded support for a postpartum psychotic symptom continuum (Mannion & Slade, 2014).

However the mean scores on both measures of delusions and hallucinations at both time points were notably lower than hypothesised (pregnancy PDI: Mean 3.47 SD 2.84; LSHS: 8.38 SD

5.97 and postpartum PDI: Mean 1.61 SD 2.13; LSHS: 5.24, SD 5.03) and the delusions scores were markedly lower than mean scores reported for women in other non-clinical populations, e.g. Mean PDI reported in community female sample 6.8, SD 4.4. (Peters, Joseph, Day & Garety, 2004). Which would suggest that rather than the perinatal period being a time for increased risk of PLE's, these occurrences are actually reduced during pregnancy and even lower during the postpartum when compared to women in the general population. One explanation is that the delusional and hallucinatory content of postpartum psychosis is different to that of traditional psychotic experiences and so generic measures of PLE's were less sensitive to the distinct experiences of mothers during this time. For example, if in most cases the content of delusions are consistent with the individual's emotional state (Freeman et al. 2002), we expect the delusional ideation and thought content to be reflective of infant and motherhood related emotional concerns, as indicated in qualitative accounts of postpartum psychosis (Rhode & Marneros, 1993; Engqvist et al., 2011; Engqvist & Nilsson, 2013). However, the PDI measures general delusional ideas such as "reading people's minds and feeling as if things on the television and in magazines were written for you" (Peters et al., 2004). This limitation suggests the need for further research into the development of clinical measures specific to postpartum psychosis.

Additionally, results such as the reduction in number of PLEs endorsements between the participants at time 1 (pregnancy) and time 2 (postpartum), may reflect the impact of attrition, in that the respondents who did not complete the questionnaires at time 2 were those who contributed to higher totals, suggesting that specific characteristics of this group may have been associated with higher PLE's. Alternatively, the changes in PLE endorsement within the sample over time might indicate confounding variables, such as better understanding of the questionnaires at time 2, or a practice effect, which might indicate that the true scores at time 1 were also much lower than the reported results suggest.

An interesting finding from multiple regression analysis of the data was that higher scores on the depression measure (EDS) significantly predicted delusion scores during pregnancy and

hallucination scores in the women postpartum, supporting a link between depression and psychotic experiences (Scott et al., 2009; Varghese et al., 2011). One limitation was that despite the reported links in literature between anxiety symptoms and psychotic experiences, in both clinical and non-clinical samples (Martin & Penn, 2001; Freeman & Garety, 2003), no measure of anxiety symptomology was conducted in Mannion & Slade's postpartum sample; and this may have provided further indication of contributors to perinatal PLEs. This however is a key study with a robust methodology and the first to specifically consider psychosis symptoms in a non-clinical postpartum population. The findings suggest some evidence for the continuum of psychosis in relation to this population, despite a need for further research into the specific qualitative content of postpartum psychotic symptomology.

1.6 A Gap in Current Knowledge

The evidence reviewed supports the theory that women in the non-clinical population, may experience thoughts similar to women in the clinical population during the normative physiological and psychological transitions of the postpartum. It is proposed that the thought content may be somewhere on a continuum and so experienced in the non-clinical group in a potentially less distressing or less extreme form. Whilst these ideas have been considered in relation to depressive and obsessional thought content, there is little published research that has explored this concept specifically in terms of thought content in postpartum psychosis. The current study aims to explore unusual thought content that might be experienced in the non-clinical population during the postpartum period and to investigate whether unusual thoughts are prevalent within a sample of non-clinical mothers during the postpartum period.

1.6.1 Research Question

What are the unusual thoughts that women in the non-clinical population experience after childbirth?

Overall Aim: To explore the phenomenon of 'unusual' thoughts in non-clinical mothers' during the early period after birth.

Aim 1: To investigate the content of unusual thoughts

Aim 2: To establish whether unusual thoughts can be identified within a non-clinical postpartum population.

Aim 3: To identify whether, sleep duration, anxiety symptoms, symptoms of depression or birth experience are associated with the experience of unusual thoughts during the postpartum.

2. METHODOLOGICAL APPROACH

2.1. Introduction

This chapter will be split into two parts. Firstly an explanation of the mixed methodological approach, chosen to answer the research question, will be provided. Secondly the use of Internet research methods will be described and the advantages of these methods, in relation to the current study, will be outlined.

2.1.1 Deciding on a Mixed Method Approach

Initially, a quantitative survey design was considered to ascertain the frequency of unusual thought occurrence in a sample of the target population. However, the problem of identifying an appropriate measure of unusual postpartum thoughts, led to consideration of a mixed method design. As there has been little previous research conducted in the area, no psychometric tools were identified to measure either clinical or non-clinical postpartum unusual thought content. A literature search revealed two measures of postpartum thoughts: the Postpartum Distress Measure (Allison, Wenzel, Kleiman, & Sarwer, 2011) and the Postnatal Negative Thought Questionnaire (Hall & Papageorgiou, 2005), which were reviewed for suitability. However, both of these measures were considered to measure the constructs of negative/depressive cognitions (PNTQ) and negative and obsessional affect (PDM), as opposed to answering the current research question. Furthermore Peters Delusional Inventory (PDI – Peters et al, 1999) was considered however, as this is a general measure of traditional forms of psychotic ideation a review of the content suggested that it might not be sensitive or specific enough in capturing thoughts with a postpartum focus. This planning process also indicated that further exploration and definition of the construct of interest was required. Therefore qualitative methods were considered the most appropriate in order to gain examples of any unusual thought content,

which could then be used for further study. A mixed methodology design is defined as "the collection and analysis of both qualitative and quantitative data in a single study in which the data is collected concurrently or sequentially, with one given priority and involves the integration of the data at one or more stages in the process" (Creswell, Plano Clark, V. Gutmann, & Hanson, 2003, p.212).

There are six major mixed methodologies that can be considered based on the purpose of the study detailed in table 1.

Table 1 Major mixed method research designs Creswell (2003)

Mixed method design		
	Process	Design purpose
Convergent Design	Concurrent quantitative and qualitative data collection, separate qualitative and quantitative analysis and the merging of the two data sets.	Need a more complete understanding of a topic. Need to validate or corroborate quantitative scales.
Explanatory Design	Sequential data collection. Phase 1: Quantitative data collection and analysis followed by Phase 2: Qualitative data collection and analysis building in Phase 1	Need to explain quantitative results.
Exploratory Design	Sequential data collection. Phase 1 Qualitative data collection and analysis followed by Phase 2: Quantitative data collection and analysis building on phase 1.	Need to test or measure qualitative exploratory findings.
Embedded Design	Either concurrent or sequential collection of supporting data with separate data analysis and the use of the supporting data before, during or after the major data collection procedure.	Need preliminary exploration before an experimental trial. Need a more complete understanding of an experimental trial.
Transformative Design	Framing the concurrent or sequential collection and analysis of quantitative and qualitative data sets within a transformative theoretical framework that guides the methods and decisions.	Need to conduct research that identifies and challenges social injustices.
Multiphase Design	Combining the concurrent/sequential collection of quantitative and qualitative data sets with a transformative theoretical framework that guides the methods decisions.	Need to implement multiple phases to address program development and evaluation.

The research problem was the determining factor in the choice of a sequential exploratory design, in the current study. In this two phase design, the qualitative data is prioritised and collected in the first phase of the study, analysed and used to inform the second phase of data collection (Creswell, 2003). The second phase involves collection of quantitative data, informed by the data collected in phase one. The rationale for the selection of this design was guided by the lack of a pre-existing survey measure and so a need to investigate and define the key variables to inform quantitative measurement (Creswell, et al., 2003). The sequence of qualitative data collection and analysis followed by quantitative data collection fit the research problem; the need to gather data for the development of survey questions, which could answer the research question. In turn, key decisions on data integration were inherent to the design; involving integration between phases and naturally providing a basis for further integration following the analysis of both data sets in the final discussion.

A fundamental critique of the use of mixed method research designs is that the two distinct philosophical approaches to research are incompatible and therefore inappropriate for amalgamation. For example, researchers choosing a quantitative method traditionally adopt positivist assumptions, valuing measurement and the objective study of phenomena in contrast with qualitative research, in which a researcher with a naturalistic worldview appreciates and prioritises subjective experience in research enquiry. Theorists have argued that the two paradigms are distinctly different not only in terms of the process of research (methodology) but also in fundamental assumptions in regards to "how we know what we know" (epistemology), and the nature of reality (ontology) (Guba & Lincoln, 1988; Hanson, Creswell, Plano Clark, Petska, & Creswell, 2005). In light of this, a further consideration of combining the methods is how a researcher decides which paradigm should be valued above the other in a single study (Hanson et al., 2005). These considerations may complicate the research process and for 'methodological purists' and those who advocate adoption of a clear philosophical stance, are seen to indicate serious underlying flaws, such as incoherence and contradictory ideas within mixed method studies (Hanson et al., 2005). However, alternative reviews of mixed

methodologies suggest that competing perspectives can be beneficial in research and promote richer understandings, which cannot be gained from either approach when used independently (Brewer & Hunter 1989; Tashakkori & Teddlie, 1998; Greene & Caracelli, 1997; 2003). Thus mixed method designs can be considered a viable and valuable research method. Creswell (2003) advocates for a pragmatic perspective to the debate, suggesting that both methods are valuable within a single study and the decision to use a mixed methodological design should be led by the research question itself and "what works". A pragmatic view has been considered appropriate in the current study, prioritising the research question and aims above adoption of any specific philosophical stance (Tashakkori & Teddlie, 2003).

However, as a researcher I identify primarily with subjective understandings of experience. More specifically I would describe my epistemological view as constructivist: a worldview which considers reality as a construct of human experience and relationships. Rather than one objective truth, this suggests that social experiences determine the meaning of phenomena and phenomena are contingent on social context. These views can be identified within the current research topic and methodological approach to investigation. For example, the notion that thoughts are given additional meaning by societal views on acceptability; that diagnostic labels can be considered social constructions rather than a reflection of a scientific truth defining health and illness; and that societal factors often determine an individual's affective response to phenomena, reflect a constructivist stance. Additionally, whilst both qualitative and quantitative methods have been combined, the prioritisation of qualitative methods in defining the research phenomena and the subsequent use of qualitative data in understanding quantitative findings, will reflect this constructivist take on knowledge.

One of the key limitations of a mixed method design considered in the current study was the additional time requirement of conducting research with two distinct phases. Within a small-scale research project with time-constraints, delays in initial recruitment and data collection can impede progress to phase two. Additionally the time needed between phases for analysis and integration of data, and the obvious drawback of having two sets of recruitment and data collection processes, render mixed methodologies more time consuming than alternative

methodologies. Despite such limitations, the advantages of the mixed methodology in addressing the research aims were considered a priority.

2.1.2. Internet Research Methods

Internet data collection methods were selected across both phases of this research study. The use of online focus groups, surveys and other data collection conducted via the Internet has been established as both viable and beneficial in the collection of meaningful data (Stewart & Williams, 2005). In the current study the data collection methods were chosen in recognition of the sensitive nature of the research questions and the advantages of allowing participants to share experiences of a sensitive nature as well as for pragmatic reasons in accessing a large enough sample within which to explore the phenomena.

The characteristics of the target population were considered appropriate for online research methods as studies indicate that Internet forums are increasingly popular amongst new parents; providing a "convenient and anonymous space to exchange information and advice" (Brady & Guerin, 2010 p.14). Internet based groups provide a safe, non-judgmental forum for new parents to share sensitive experiences and are more convenient than face-to face interviews for mothers with young children (Madge & O'Connor, 2002; 2004). Women of childbearing age are suggested to be the most common users of online social media communication, with time spent online increasing up to 44% after childbirth (McCann & McCulloch, 2012). Internet forums are described as providing mothers with the 'chance to connect with other women', to gain a more realistic picture of what is normal and to confirm symptoms typical of pregnancy; as well as a means to help deal with the uncertainty of the process of new motherhood (Lagen, Sinclair, & Kernohan, 2010; 2011). One obvious limitation of Internet recruitment and research methods are that inclusion is determined by Internet access and thus may result in a sample of respondents who are not representative of the target sample population. Additionally it may be argued that it is impossible to verify online survey respondent identities. However recruitment via maternity wards and mother-baby websites increases the likelihood of reaching the correct

audience. Furthermore non-verifiable identity is also a limitation of postal and email surveys (Madge & O'Connor, 2002) and respondent honesty is a concern across questionnaire and interview methods. Despite limitations, online methods are reported as useful in providing a safe environment for the disclosure of unusual thoughts in non-clinical populations (Freeman et al., 2005). Additionally, the studies above suggest that the characteristics of the target population were appropriate for the use of Internet research methods, beneficial in providing a convenient and acceptable method for new mothers and potentially advantageous in increasing participation rates.

Online discussions were therefore conducted in the qualitative data collection phase. This was considered a valuable method for the current study, as a disadvantage of traditional face-to-face interviewing is the potential impact of fear of social judgment or repercussions of participant responses, due to interviewer presence. In contrast, communication via the Internet can facilitate discussion of sensitive topics in a more comfortable setting (Kramish et al., 2001). This reduction of social pressures, which may bias responses, and the increased levels of anonymity, which can promote openness, may lead to a greater 'richness' of data (Curl & Robinson 1994; Fawcett & Buhle, 1995). Studies have also reported advantages of wider accessibility, greater safety for both participants and researchers and ethical benefits inherent in the capacity to embed emotional and informational support into online research projects (Anderson & Kanuka, 1997; Hsiung, 2000). Despite the advantages one key limitation of the online focus group method, were the challenges for the researcher in managing a synchronous text discussion in which multiple conversations can overlap, affecting the flow and logic of the conversation. A lack of natural expression can make it more to difficult to judge the mood of participants and varying time taken to for participants to type and post responses can make it difficult to determine when best to post questions (Stewart & Williams, 2005). As these challenges were identified in piloting the technology, in the current study rather than the recommended 6-8 traditional focus group participants (Stevens, 1996), smaller online discussions including 3 participants were conducted. It is, however, possible that larger discussion groups may have generated more posts, more detailed discussion and richer data (Stewart & Williams, 2005).

3. PHASE ONE METHOD

Phase One: Qualitative Data Collection

3.1 Design

A qualitative research design was used to collect data for phase one of the study. This involved use of an online focus group methodology, conducted with six participants and an individual online interview conducted with one participant in order to collect qualitative accounts.

3.1.1 Population and Sample

3.1.2 Recruitment

In recognition of the sensitive nature of the research and the impact that this might have on recruitment rates, online recruitment methods were considered advantageous in enabling contact with a large pool of potential participants. Research on the target population also indicated that parenting forums are particularly popular amongst new parents; providing a convenient and anonymous space to exchange information and advice (Brady & Guerin, 2010; McCann & McCulloch, 2012). In light of this, online recruitment via advertising on parenting websites (Netmums; http://www.netmums.com and Mumsnet; http://www.mumsnet.com) was employed as the primary method of recruitment. Additional recruitment methods included contact with private nurseries in the North of England, who agreed to send out recruitment information via parent emailing lists. Advertising materials including a recruitment flyer and online advert which provided details for interested potential participants to contact the researcher via email for further information on the study were also used. Potential participants contacted the researcher via email for further information on the study and were subsequently provided with the participant information sheet (See Appendix A).

3.1.3 Inclusion criteria

Inclusion criteria were mothers aged over 18 years who had given birth to at least one child within 18 months. These inclusion criteria were designed to sample mothers who were most able to describe a typical post-birth experience with recognition that mothers under the age of 18 may be a more vulnerable group (DfES, 2010). An inclusion period of up to 4 months postpartum was originally planned to allow participants to provide current rather than recollected accounts. However in reality recruitment proved to be difficult, potentially due to asking mothers to discuss the sensitive topic and the practicalities of time availability during the early postpartum. Inclusion of mothers' accounts of up to 18 months post-birth remained consistent with previous qualitative research studies exploring accounts of postpartum thoughts (Murray & Finn, 2011) and allowed for more flexibility in recruitment.

3.1.4 Exclusion criteria

Participants were excluded if they had received a diagnosis of a mental illness following their most recent childbirth, in line with the specific research aim to sample a non-clinical population. Thirteen mothers contacted the researcher in total: two did not meet inclusion criteria, two were provided with information and made no further contact, one was unable to participate due to not having access to a home computer and Internet connection and one participant did not log in on the day of the scheduled focus group. Demographic details of participants who made contact and decided not to participate, or were excluded, were not recorded. Seven participants were recruited in total that met the criteria and agreed to take part in online focus groups.

3.1.5 Participants

Recruitment of 12 participants had originally been the aim in line with optimal suggested numbers for data saturation (Guest, Bunce & Johnson, 2006). However recruitment proved to be more difficult than anticipated and as detailed above a number of potential participants failed to meet criteria in addition to some attrition. Factors such as the time demands on new mothers, as well as reluctance to share sensitive experiences with others in a group interaction, may have

reduced rates of participation. In light of some of these difficulties and the exploratory nature of the study, the seven participants were deemed sufficient to fulfil the aims of the research and determine whether further investigation into unusual thought content would be merited.

The seven participants accessed the online interviews from various cities within the UK, across the West Midlands, Yorkshire and South East England. The mothers' ages ranged from 26 to 35 years and time since birth ranged between 2 months and 18 months. For two of the women, the interview was following their first childbirth, for another two, the interview was following their second childbirth, for one of the women it was her third baby and for two further women, it was their fourth child. Two of the mothers were employed and the others reported being 'stay at home mothers'. The mothers were mainly from a White British background with one identifying as Black British.

3.1.6 Data collection

3.1.7 Focus Group Topic Guide

The focus group topic guide was developed following discussion with the research supervisors and consideration of the literature defining properties of delusions and clinically relevant thought content (Clark & De Silva 1985; Clark, 2005; Freeman & Garety, 2006). The questions were open-ended and followed a 'funnel strategy' (Sage, 2013); ordered from broad to specific. Beginning with an introduction to the purpose of the discussion, designed to allow participants to introduce themselves to each other, familiarise themselves with the practical aspects of the technology, and to become at ease with the format of the discussion. Moving on to questions designed to elicit the core aspects of thoughts, such as descriptive content, qualitative dimensions, appraisal, affective and behavioural responses. It was considered that a thought might be identified as unusual based on properties, such as content e.g. theme, unacceptability, frequency and or associated affect. Final questions were designed to move on from potentially emotive thought content to more solution-focused discussion in relation to recommendations for support.

Table 2 Dimensions of focus group topic guide

Please think back to the early weeks and months after you gave birth…

Qualitative dimensions	
Description of content of thought	Did you ever have thoughts that you would describe as unusual or even bizarre? Prompt: Can you give examples of any of those thoughts?
Unacceptability	Was there ever a time you thought *'I shouldn't be thinking this'?* If so, what types of thoughts prompted this?
Affective response	Do you recall any thoughts, which brought up strong emotions for you?
Thought properties	Did the unusual thoughts or images, arise briefly or were they frequent?
Practical Focus	
Recommendations for support	Was there any advice/information, which you felt was/or would have been helpful in regards to your thoughts after birth?

See Appendix C

The questions were piloted with two mothers known to the researcher who provided feedback on their experiences of responding to the questions, following which some questions were reported as unclear and were revised. Language and phrases from participants within the initial focus group interview such as *"irrational thoughts"* were used within subsequent interviews to mirror language and descriptions of the phenomena acceptable to participants, with the aim of putting participants at ease and encouraging discussion. The guide was used flexibly and when key aspects of the research question emerged naturally, the interview diverged from the guide to allow focus on interesting points, which arose (Chapman & Smith, 2002).

3.1.8 Ethical Considerations

Ethical approval for phase one was obtained from the University of Leeds, Faculty of Health Sciences Ethics Committee (Reference SoMREC/13/050) in 2013.

Contact was made with Leeds Teaching Hospital's (LTH) safeguarding team during the research planning stages and a protocol was established in order to enable the researcher to manage and report any safeguarding concerns arising during participant interviews. The LTH children's safeguarding team agreed to advise and offered support in making referrals for any mothers for whom, during our contact, there were concerns regarding risk of harm to their babies. The limits of confidentiality were highlighted by the primary researcher in discussion with participants prior to taking part in the study and details were also included within the written consent form.

In recognition of the potentially sensitive nature of the research topic, participants were fully informed via the information sheet, consent form and in correspondence with the researcher, that they were able to withdraw from the study at any point, by exiting the focus group website. Participants were provided with a consent form via email, which they completed and returned via email prior to engaging in the online discussions. A list of support and information links, including access to parenting support services, parent focused helplines and NHS support and information regarding both general postpartum wellbeing and symptoms of postpartum mental health difficulties were included on the focus group website.

All participants were contacted post interview to ascertain their experience of taking part in the group, to provide an additional copy of the support information and offer any further signposting.

In order to manage confidentiality between participants within the discussions, each participant was provided with a pseudonym username and advised not to share personal details during the online discussion. Additionally, the discussion was moderated to ensure that any sharing of personal information or comments deemed offensive were blocked from group viewing.

The focus group website was developed within the Leeds University Microsoft Office SharePoint network to ensure protection of participant data. The data from the focus group discussion posts and personal data provided by participants were saved in separate password

protected files on the University M drive. As pseudonym usernames were used during the focus group the datasheet did not contain any participant identifiable information.

3.1.9 Procedure

Mothers who agreed to participate in the study were provided with the information and consent forms via email (see Appendix A & B). All were asked to initial and return the consent form via email to confirm that they had read and agreed to the terms of participation. Participants were also asked to provide a contact telephone number, full name and email address in order to register for access to the University network and website. Due to the format of online synchronous text communication, it was noted that discussions could be more challenging to moderate than would a face-to-face group. For example, when responses are posted synchronously, with a lack of social cues, multiple conversations can overlap affecting the flow and logic of the conversation (Stewart & Williams, 2005). In light of this three separate focus groups were scheduled to include three participants and the researcher within each. Due to recruitment difficulties and attrition two groups included three participants and one participant was interviewed individually.

A week prior to each focus group, participants were emailed a sheet with information confirming the focus group URL (web address), their username and password and step-by-step instructions detailing how to post and respond to messages during the discussion (see Appendix D). For each focus group discussion, a date and time was agreed for all participants to log in to the site simultaneously. Participants were given access to the website on the morning of the discussion to ensure that they were able to log in prior to the discussion. The 60-minute discussion was initiated once all participants confirmed that they were online. Each discussion began in the same way: guided by a topic guide (see Appendix C), however once the conversation began to develop between participants the guide was used flexibly to allow the participants to respond to each other's messages and for the discussion to follow a natural course, guided by the participants' accounts. At the end of the discussion the participants were

thanked for their time and informed that they could contact the researcher individually if they wanted to share any additional information outside of the group discussion.

3.2 Analysis

A process of Thematic Analysis as described by Braun and Clarke (2006) was applied to the data collected from the online discussions.

Figure 1 Braun & Clarke (2006) Thematic Analysis

Phase	Description of the process
1. Familiarising yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating the data relevant to each potential theme.
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2) generating a thematic map of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

As the data was downloaded in text format from the online discussions forum page, transcription was not necessary (see Appendix E for transcript extract). In line with Braun and Clarke (2006) each of the group discussion transcripts and the individual interview transcript were read and re-read in order to gain familiarity with the data. Notes were then made on the transcripts and sentences and phrases were highlighted where the content was considered to relate to or to capture something relevant to the overall research question *(i.e. unusual thought*

content, participants' understanding and responses to the unusual thoughts). An inductive approach was taken in analysing the transcript, which meant that the themes were derived from the data rather than informed by themes identified in any pre-existing literature on unusual thought content. Analysis at a semantic level (i.e. coding based on surface meaning of participant responses; descriptions and content) was deemed sufficient in fulfilling the aims of phase one. Meaningful features of the data were identified through this process and initial codes were generated across each of the interviews. Codes were then collated into themes across the entire data set and the overarching themes were given names to represent the extracts within. Thematic Analysis was considered to be an effective method in identifying examples of thoughts and experiences across the data set. Additionally, it is a method, which could be applied flexibly without adherence to any specific theoretical approach in contrast to many other qualitative data analysis methods, which are dependent on adopting a specific philosophical stance or theoretical framework.

The 'quality of inferences' described by Tashakkori and Teddlie (2003) refers to issues of validity and reliability in mixed method research. Key issues include assessing quality of the process of data interpretation and the credibility of inferences and conclusions drawn from the data. For example, Guba and Lincoln (1989) consider inferences credible if "there is correspondence between the way the respondents actually perceive social constructs and the way the researcher portrays their viewpoints" (Guba & Lincoln, 1989 Cited in Tashakkori and Teddlie p. 108). Two key questions in determining interpretative rigor in mixed method research are: *assessing whether inferences closely follow relevant findings?* And "*whether other scholars reach the same conclusions on the basis of the same results"? (*Tashakkori & Teddlie 2003 p.113). In order to improve the quality of inferences the themes and data extracts were sent to both of the research supervisors who provided checks on the analysis and credibility of the themes. Additionally reflexivity was employed throughout the analysis process to consider researcher biases in interpretations on the data.

The above quality checks and further aspects of this research process were considered to fulfil Elliott, Fischer, & Rennie's, (1999) good practice standards in qualitative research, i.e.

1) Owning one's own perspective

2) Situating the sample

3) Grounding in examples

4) Providing credibility checks

5) Coherence

6) Accomplishing general versus specific research tasks

7) Resonating with readers.

For example, reflexive accounts allow me to express and own my perspective as a researcher. Details of participant demographics are provided in order to situate the sample. Examples of participant accounts have been provided to illustrate themes throughout the results section and to demonstrate derived understanding of the data. Furthermore, credibility checks on the interpretation of data and themes have been conducted by supervisors and reported within the methodology section. Themes have been reported in a coherent manner and a diagrammatical illustration developed in order to further illustrate relationships between identified themes. Limitations to generalisation will be considered within the main discussion section and all efforts have been made to present the findings in a manner which accurately represent the subject matter (Elliott, et al. 1999).

3.2.1 Reflexivity

The process of reflexivity involves an active awareness of how my own experiences and values will influence the process and outcome of the research (Haynes, 2012). In being reflexive we acknowledge the subjectivity in the way we interpret participant accounts and openly state the values and assumptions that we are aware will have influenced our choice to research the topic; the methods we use to investigate it and the conclusions we draw. Through the process of

reflection on our position and on our interpretations of participant experiences, we attempt to limit the extent of this inherent bias. In the current study reflexivity will involve firstly acknowledging my position and presuppositions in relation to the research topic and later a reflexive paragraph on my responses during interpretation of participant accounts.

Personal reflexive statement:

It is important to acknowledge my own experiences and values as a mother and a psychologist in clinical training. I have a shared experience of motherhood with the research participants, experiences that may lead to me to over identify with aspects of their accounts. Beyond motherhood I acknowledge and state my personal sense of not meeting socially constructed ideals and so throughout my personal and professional development as a trainee clinical psychologist, being attuned to how ideals are constructed in societies and the psychological implications for individuals who have experiences outside of these parameters. I would define myself as a mother who does not fit with the 'perfect motherhood ideology' and having acknowledged my early conflicts with this, I now embrace and possibly seek out the alternative narratives of motherhood. I am aware that identification with non-traditional descriptions of motherhood will have influenced my interest in the research topic and potentially how I contribute and relate to participants. Additionally my professional experiences have led me to understand psychosis as a response to significant and traumatic life experiences; acknowledging the complex interactions between psychological, social and biological processes, as opposed to traditional primacy of biological factors. I acknowledge that these perspectives and experiences influence who I am as a researcher, how I ask questions and the interpretations I make. As such, I felt it was important to work closely with both supervisors in reviewing my interpretations. Thus, utilising multiple perspectives and increasing my awareness to instances of bias.

4. PHASE ONE RESULTS

Phase one: Findings of the Online Discussion Groups on Unusual Thoughts

4.1 Introduction

This chapter presents the findings from the qualitative phase of the study in relation to the overall research aim: **To explore the phenomenon of 'unusual' thoughts in mothers during the early period after birth** and specifically to fulfil Research Aim 1: **To investigate the content of unusual thoughts.**

Table 3 presents a summary of participant demographics, interview group and the allocated pseudonyms. A brief overview of the online discussions will be provided, prior to the results of the Thematic Analysis. Each theme identified in the analysis will be outlined and presented alongside relevant examples from the data below.

Table 3 Phase One Participant demographics

Participant number	Focus group	Pseudonym	Age	Biographical details
1	Individual interview	Amy	32	Second baby
2	Group 2	Diane	34	Third baby
3	Group 1	Clare	28	Fourth baby
4	Group 2	Liz	35	First baby
5	Group 2	Jenny	26	Fourth baby
6	Group 1	Zadi	30	First baby
7	Group 1	Hannah	33	Second baby

Table three participant demographics

4.1.1 Overview

Before engaging with the online discussion, all of the women self-reported as not having been diagnosed with a serious mental illness following the birth of their babies. One of the mothers had told her GP about the 'unusual' thoughts at a 6-week check up, and another had discussed the thoughts with her Health Visitor. However, neither of these mothers received diagnoses or treatment in response to their concerns. Two of the mothers reported that the thoughts commenced a day or two postpartum and continued to 7 and 12 weeks, respectively, postpartum. For one participant, the thoughts began during pregnancy. For two of the other mothers who participated, the thoughts had subsided by the point of the interview. As a longer period had elapsed since birth the examples provided were from their recollection.

The women who participated tended to define unusual thoughts, as those they believed were unrealistic. The frequency and impact of these thoughts varied for the mothers; for example one mother recounted the thoughts as frequent and distressing, but for another mother the thoughts were frequent, but easy to dismiss; "*not taking over*" her life. Additionally, the accounts describe the ways in which the mothers managed the thoughts. For some their beliefs about the nature of the thoughts appeared to alleviate distress.

The themes below are derived from the online discussions between the participants and from the individual online interview with Participant 1, pseudonym Amy. As per the interview schedule the topic of unusual thoughts following childbirth was presented as a prompt and participants were asked to provide any examples of such experiences. In the two online groups the participants discussed their examples and there was overall agreement on similarity of the content of examples.

Figure 2 Main and subthemes identified from Thematic Analysis
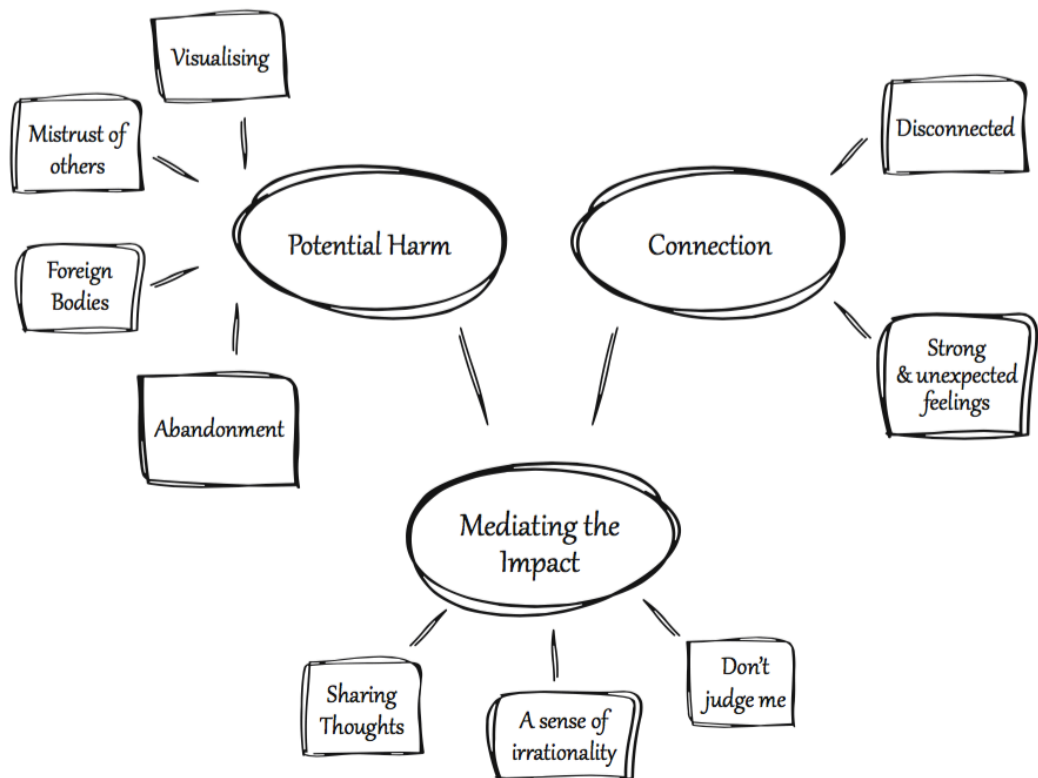
Figure 2 illustrates the relationship between the three main identified themes, '*Potential Harm'*, '*Connection'* and '*Mediating the Impact'* and the related subthemes. Each of the themes is presented below along with verbatim extracts to illustrate participants' accounts from which themes were developed.

Potential Harm

One of the main themes identified in participant accounts of "Irrational thoughts" was: '***Potential Harm'***- with subcategories, 'Visualising', 'Mistrust of Others', 'Abandonment', and 'Foreign Bodies'.

Visualising

Four of the mothers reported experiencing visualisations, which in some manner depicted the infant being exposed to harm. One of the mothers differentiated between fictitious narratives and other types of mental images she experienced, which reflected a previous anxiety-provoking event.

"Some are like flashbacks. My daughter ended up in A&E with a sickness bug when she was tiny so I see that but with him [the baby]. Some are completely fictional in which I visualise a tea towel next to the hob lighting & catching fire" (Amy)

A central theme across the depictions was of the babies imagined within extreme incidents, some of which were improbable, but all were events that would likely cause the child's death.

"I had, and still have, visions in my head of my baby being run over when pushing the pram" (Liz)

"[The baby would be] pushed into the canal by accident when walking on the path, but I didn't have any feelings like baby blues or PND" (Liz)

*"I thought they'd been in a car crash as my partner was so tired from the sleepless nights. I started thinking about the car seat and if it would protect him...the horrible thoughts of what might happen are crazy" (*Zadi).

The accounts also revealed morbid thoughts, which were common amongst the participants, reflecting catastrophe and a high probability that the infant would not survive.

"I sort of feel like because this is my 4th baby, that as the others have been fine that the odds are stacked against me" (Jenny)

For some of the mothers such thoughts elicited further thoughts and behaviour of a protective nature towards their babies, (i.e. ensuring they were orientated towards the baby, or mentally visualising the potential dangers.

"I was plotting the exact journey to the shops they would've taken and what the risky corners and junctions were and where they might've crashed" (Zadi)

Although the occurrence can be considered somewhat infrequent (0.30 per 1000 births - ONS, 2014), most of the mothers discussed imagining scenarios in which the infant died from sudden infant death syndrome (SIDS). For Diane and Jenny this led to the thought that they could not turn away from the baby during the night for several weeks postpartum.

"When I came home from the hospital even though this is my 3rd child I found that I had to sleep facing my daughter. Her Moses basket is at the side of my bed, but I always had to sleep facing the basket and it was several weeks before I felt able to turn away from her at night" (Diane)

"I feel the same about sleeping facing her, I still do that now, she's nearly 7 weeks and she is my fourth. I co-slept with the others and I think this is a bit new...the worry of what will happen if I'm not watching her" (Jenny)

The thought that they must sleep facing the baby to prevent harm was reported as an example of an unusual thought by both of the mothers. Diane explained that this was her third child and she had not experienced such thoughts following her previous childbirths. For Jenny, who had previously co-slept with her three other babies, the thought of her infant dying suddenly within the night had also only occurred to her following this recent childbirth.

Mistrust of Others

Some of the mothers had thoughts which seemingly alerted them to the potential threat posed by others; these included family members unintentionally causing harm to the baby, as well as the dangers posed by strangers, infection or unpredictable advances towards the infant. For Amy and Diane the thoughts resulted in feelings of anxiety when others came too close, touched the baby or the mother herself.

"I would get annoyed with anyone else being touchy with my baby and me as well" (Diane)

"I just get nervous when they get too close" (Amy)

Examples below from Liz, Jenny and Diane illustrate the responsive protective strategy of reluctance to leave the baby in the care of others.

"I had a couple of school meetings to attend when she was around 8-9 weeks old and even though I could've left her at home with my husband I didn't want to so I took her with me" (Diane)

"I have a very strong sense that no one can else can care for my baby like me, nor do I trust anyone 100%" (Jenny)

"...but now he's the only one I would leave her with for longer than ½ a day as I still feel like she needs me there most of the time" (Liz)

Diane shared her thoughts that someone might take her baby away from her: fears, which appeared to stem from her experience of difficulties in breastfeeding her daughter. From her account there was a sense that she may have interpreted such difficulties as an indication that she was not 'truly' a mother, or that this was the only way that others could recognise her motherly connection to the infant. She had formulated a fear that someone, although she did not express whom, would take the baby away and so needed to be on guard at all times and not let the baby out of her sight. Although friends had suggested that an advantage of not breastfeeding was to be able to leave the baby with others earlier on, these thoughts, made it difficult for her to leave the baby even with her husband.

"I couldn't let her out of my sight for quite a few weeks, although I breastfed my other two daughters I was unable to this time round and I had the irrational thought that because of this someone could take her away from me. When you're breastfeeding your baby is yours and no one else can feed her, but because I wasn't I felt someone could take her as anyone could feed her…friends told me to look on the bright side that I could start drinking alcohol again but I didn't want to and this linked with my feelings that someone could take her from me" (Diane)

Amy was unable to express a clear sense of the ways in which she felt strangers might intentionally harm her infant, she identified her underlying fear as uncertainty or mistrust of

strangers' intentions, resulting in the anxiety she experienced when out in public and others came too close.

"You never know if they might hurt your baby. Completely irrational but you cant help feeling fiercely protective. Strangers are drawn to babies this can sometimes feel like a threat" (Amy)

"I've felt anxiety about people. Both strangers are a potential threat through illness or unpredictability" (Amy)

Abandonment

Three of the participants (Diane, Jenny and Liz) discussed passive thoughts of abandoning their babies and reflected on whether or not and how the baby would survive their abandonment. One participant, Jenny, described imagining abandoning the baby, which she noted had occurred with the absence of feelings of low mood.

" Another thought I've had not very frequently really is the feeling that I would like to sort of run away from her because at times caring for her is so overwhelming. At the same time though I feel out of my children she is the one that I am least capable of walking away from even for a few minutes…One day a few weeks ago she was crying so I took her for a drive and I just wanted to pull over and take her car seat out and leave her on the side of the road down this little country lane…at the same time I was thinking that though almost alongside that urge I was thinking about how cold she might get and if my husband would be able to find her later. I would never have left her but having such a horrible thought about her was scary" (Jenny)

From the accounts of these mothers, such thoughts seemed to occur at times when they were feeling overwhelmed in caring for the baby and so were a consideration of how they might escape such feelings.

"I had the odd thought of running away only when it was really overwhelming her crying too much and me not knowing why and not being able to make her feel better" (Liz)

"I think we all feel like running away from it all sometimes – I have…but then I thought I couldn't live without the baby and then I'd have to take my other girls too so then I'm not really running away" (Diane)

In spite of this, the descriptions provide accounts of concurrent counteracting thoughts, of the vulnerability and needs of both the baby and their other children, which seemed to neutralise the thoughts of abandonment. Jenny wrote in more detail about the additional reasoning process she entered into, following the thought, questioning why she would think of leaving her baby and listing all the reasons that she would not act on the thought, establishing that she has no desire to abandon her baby and rationalising the thought as a response to infant related caring stresses.

" I thought if I had wanted to leave her why would it matter that we might not be able to find her? And if I was to run away now Id HAVE to take her because she needs me but then xxxx is so funny and I couldn't leave her and xxxx is so sweet so shed have to come and then of course I love my husband…so really we'd just be moving house" (Jenny)

Foreign Bodies

This subtheme reflects two mothers' thoughts that substances originating outside of the baby's or her own body, such as medicines and formula milk could be harmful. Jenny described her confusion arising from having such a thought, whilst not believing that the substances would actually cause any harm to the baby, and Liz identified with such thoughts in their discussion. Their accounts appeared to reflect an urge to keep their babies pure.

"Another thought, I don't want to introduce any 'foreign bodies' to my baby…I sort of feel like I don't want to give her formula or Calpol or even take Paracetamol myself, it feels wrong at the minute I've got no idea why!" (Jenny)

"I know the Calpol thing is crazy and the formula thing too really, I know they wouldn't hurt her at all (possibly even better for her) but I cant shake the feeling of wrongness" (Jenny)

"Yes I felt like this too, completely, I don't want to give her Calpol or anything like that…I still wouldn't want to give her formula I just want her to be as healthy as possible" (Liz)

Amy revealed thoughts regarding her baby's exposure to germs and viruses in her individual interview, which for her, prompted uncomfortable feelings and protective behaviour in order to keep the baby from infection.

"There's a nasty flu strand with resp[iratory] problems…does make me paranoid about going to enclosed spaces like GP surgery" (Amy)

Connection

The second major theme identified was '***Connection***'- with subcategories Disconnected and Strong Unexpected Feelings. Thought content related to ideas of being disconnected from the baby, a change in connection to others, or disconnection from reality in the sense of the surreal nature of their experiences during the postpartum period.

Disconnected

For Jenny a sense of not being connected to the baby at this stage, manifested as a thought that the baby might not be her own

"For the first few weeks I felt very much like she wasn't my baby, I mean I liked her obviously but I felt more like I was babysitting than that she was mine" (Jenny)

Perhaps during the first few weeks of transition to motherhood the thought illustrated the unfamiliar newness of the relationship, a bond, which for her was not instantaneous.

Another participant, Hannah, referred to 'being given the baby' to take home, which seemed to negate her motherly connection to her infant.

"Wow…they've just given me this baby to take home and I haven't had any training!" (Hannah)

For Amy and Liz the thoughts arose that if they were physically away from the baby they would no longer be connected, or that the baby would form a bond with someone other than them.

"I would feel lost and disconnected if I was away from her for the whole day" (Liz)

"I was concerned that if the extended family came to visit they would pass the baby around and he may not bond with me" (Amy)

In some of the participants' accounts was the slight sense of 'surrealism' during this period and in their making sense of becoming a mother. Despite this being Zadi's second child it appeared that the transition to this current motherhood still prompted new feelings and ideas, which she found to be confusing; similar to those experienced by Hannah, a first time mother.

"... I was just a bit dazed and confused"…"I had moments of what I thought [was] clear thought " (Zadi)

"For me it just felt surreal"…"It wasn't stressful especially I was just a bit dazed and confused" (Hannah)

Strong and Unexpected Feelings

The mothers discussed their strong feelings towards their babies. In attempts to make sense of such intense feelings, two of the participants reflected on their thoughts that initially it seemed difficult for them to hold such strong feelings for the baby alongside feelings for their partners; as if one must replace the other.

" I remember feeling that I must not love my boyfriend because how I felt about him felt like nothing in comparison to how I felt about my baby….like I loved him so much that feelings for anyone else suddenly seemed like it couldn't be love because it was nothing like as strong" (Jenny)

"I also didn't feel much towards my boyfriend in the first few months after birth, my baby was just so much more important than anything else. He kind of annoyed me a lot and I didn't want to be close to him at all" (Liz)

Liz also shared her thought of prior connection to the infant and the sense of familiarity she felt in the relationship with her daughter.

"It was all a bit surreal but at the same time it felt so familiar straight away as if she's always been here" (Liz)

These thoughts, which were reported as difficult to make sense of for these mothers, appeared to reflect the new and intense feelings towards the infants. The content seemingly focused on the development of an attachment to their babies and the process of incorporating these new feelings into their current realities.

Mediating the Impact

The third major theme, **'mediating the impact'** is presented below, structured into subcategories of: A sense of Irrationality and Sharing Thoughts and Don't Judge me, which illustrate how the participants mediated the impact on their unusual thoughts.

A Sense of Irrationality

Extracts within this theme are presented as three subthemes, which illustrate the key ways in which the participants seemed to manage thought content and the challenges of early motherhood. 'A sense of irrationality' refers to the mothers' beliefs about the thoughts; it appears that for the most part the mothers maintained a conscious awareness of the illogical nature of the thoughts, which possibly helped to mediate distress.

"There was a part of me that knew I was overreacting and they would probably be fine but it was overwhelming anxiety and emotions about knowing they were safe" (Zadi)

"I think mine were quite frequent. They didn't take over my life and I think deep down I knew they were irrational" (Hannah)

"This is something I spoke to my husband about as I knew at the time it was an irrational thought, but it really upset me at the time" (Diane)

In Amy's interview she moves from describing the thoughts as irrational, to identifying a potentially protective nature to the thoughts.

"...Mostly protective instinct going into overdrive…I'm not that irrational really just over protective and swimming with crazy hormones! (Amy)"

Again this appeared to be a less distressing way of her making sense of the thoughts, in contrast to her concerns shared at other points of the interview, that the thoughts would indicate symptoms of mental illness or in her own words that she might *"appear to have gone loopy"*.

Sharing Thoughts

These examples reflect the mothers' considerations and experiences of sharing their thoughts with others, highlighting the benefits of a safe space to share their potentially difficult thoughts. Participants Diane, Liz, Jenny, Zadi, and Hannah, within both online group discussions reported being able to discuss their thoughts with others. The women considered how reassurance gained in understanding responses from friends, family or their online community allowed them to maintain a sense of wellbeing.

In Jenny's account, illustrated below, it seems that after sharing her thoughts she was able to resolve her ambivalence and sense of discomfort through her husband's reassurance. His assurance of her qualities and confidence in knowing that the thoughts she was experiencing were not consistent with her nature, was enough to alleviate her sense of distress.

"My husband fixed it though he said no matter what I might think or feel that he knows 100% that she is safe with me because I'm still me and he knows I could never do anything like that. Whenever I feel overwhelmed now just remembering what he says really helps" (Jenny)

Zadi too, reported having a supportive network within which to share her thoughts and gain emotional support.

"Mainly my partner but he was as clueless as me :) also my close friends who provided most of my emotional support through the early weeks/months. I think I told my midwife about the late home incident after I'd got over it and could laugh about it a little" (Zadi)

The thoughts were not always easy for the women to share with others and there was a sense from two of the mothers in particular of their concerns that others may not understand their experiences. In contrast with Zadi, who after sharing her experience with trusted others was able to reflect light heartedly, Amy reported her feelings of shame in relation to the 'irrational' thoughts she was experiencing, needing to keep these hidden in order to present an image to the world that she was a suitable mother and able to cope with the responsibilities of motherhood. Whilst Diane was able to share her thoughts she remained concerned that her husband did not understand.

"They're upsetting can't really share them as they are irrational and I don't want to appear to have gone loopy... It's important not to appear to be loopy. Being a mum is a position of responsibility and you have to look to the outside world like you're coping 100%" (Amy)

"I spoke to my husband and to one close friend about it. Also a little to my GP at my 6 week check…we've got a good rapport. All have been supportive although I think my husband struggles to understand" (Diane)

Whilst Amy found it difficult to share her thoughts with those close to her, the Internet provided a way of doing so while avoiding the judgment she feared. The forums appeared to be invaluable in enabling her to access support and understanding, which she found difficult to gain elsewhere.

"… You are more likely to find someone who's been through your problems etc. You are also safe by being anonymous so wont be carted off to the looney bin… You can anonymously ask for help or support and people can share their experiences without being judged by people that matter" (Amy)

Don't Judge me

The extracts within this subtheme illustrate how the mothers sought out sources of support and reassurance, which would provide a non-judgmental stance on their thoughts, for example,

"One friend has a 16 yr [old] son & is a very empathetic person all round, another friend is a trained Sure Start worker both are huge advocates of child-led parenting and very non-judgemental" (Zadi)

A shared theme amongst the participants was to seek out other mothers who might relate to their experiences of unusual thoughts and would confirm a sense of 'normality'. The online forum (Netmums) provided this through access to anonymous peer support, which shielded the mothers from judgment.

"I often check things with other mums online to see if I'm having 'normal' thoughts and experiences. The main part of me knows that I am it's just nice to have some reassurance…" (Amy)

"My husband, my wider family and the ladies on Netmums. The Netmums forums have always been a huge support to me. Not that I don't trust my family or my husbands opinion but the mums are easy to relate to with the recent experience" (Hannah)

"I found having a large online community really helpful. Also a local Facebook group has been very supportive" (Zadi)

In both the group discussions and Amy's individual interview the mothers shared their feelings about sharing the thoughts with healthcare professionals. Tolerance of their thoughts and support was hoped for in such exchanges.

"I think if they were more approachable if they let you know it was normal to have irrational thoughts and that it doesn't mean you're a bad mum or not coping then they could signpost support for you" (Amy)

Hannah reported finding it difficult to build a relationship with the professionals she saw due to the inconsistency in care, and so felt unable to share her thoughts.

"My midwife just seemed to want to dash in and out. I saw a different health visitor each time. They didn't visit much and when they did it was hard to talk as I had no relationship built with any of them due to the lack of consistency" (Hannah)

4.1.2 Discussion of results

Data from the online discussions provide examples of the cognitions and experiences of the participants during the early postpartum period. The content of thoughts reported as unusual appear to reflect fears and anxieties, related to the infant; mixed feelings in the unfamiliar relationship and the process of assimilating experiences of recent motherhood. A number of the descriptions, particularly those related to potential harm are arguably consistent with Morrison's (1996) definition of unwanted intrusive thoughts experienced in psychosis, identified as "thoughts, images or impulses that are experienced as unwanted and uncontrollable and interrupt ongoing activity" (Morrison cited in Jakes & Hemsley, 1996 pp.175). The word 'intrusion' referring to the involuntary and spontaneous appearance of the thought in consciousness as opposed to a voluntary or deliberate thought process (Brewin, Gregory, Lipton, & Burgess, 2010).

These types of thoughts and visual intrusions with unusual and often disturbing content are recognised as occurring in different forms both within the non-clinical population (Rachman & De Silva, 1978; Salkovskis & Harrison, 1984) and reported clinically within a range of disorders including anxiety, obsessive-compulsive disorder (OCD), Post-traumatic stress disorder (PTSD) and Psychosis (Brewin et al., 2010). For example, Morrison et al, (2002) found that half of the participants interviewed with a diagnosis of psychosis, reported the occurrence of intrusive images, with common themes of "feared catastrophes associated with paranoia, traumatic memories and images about the perceived source of their voices" (Morrison et al., 2002 p.1061), such images were most commonly associated with and underlying emotion of

fear. Furthermore, examination of the composition of the intrusive thoughts experienced in psychosis reveals similarities with the thematic content of both hallucinations and delusions suggesting an association between the phenomena (Morrison et al., 1995; Morrison & Baker, 2000).

It may be hypothesised that what differentiates such an unusual thought at the non-clinical aspect of the continuum from a delusion in psychosis, is the individual's conscious awareness that the thought is irrational, and so rather than holding conviction in the thought or engaging in behaviour to prevent it, it remains just an irrational thought intrusion. Peters et al (1999), indicated that delusional ideation was differentiated between clinical and non-clinical populations not by the content, but by the degree of conviction, distress and level of preoccupation with the thought, providing support the continuum model (Peters et al., 1999; Johns & Van Os, 2001; Bentall, 2003). Of course traditional psychosis and postpartum psychosis do have similarities but also differing diagnostic characteristics, most notably onset; and whilst similar emotions might drive delusional ideation across the disorders, the topical focus of thought content differs (Chandra et al. 2006). Unfortunately, research has not yet specifically considered the content of postpartum psychotic thoughts and how these might be comparable to intrusive thoughts or other experiences.

Some of the mothers in the current study experienced initial discomfort with their thoughts, mainly a sense of cognitive dissonance in holding a thought incompatible with their beliefs of how a 'good' mother should think. One mother in particular reported her shame in experiencing the thoughts and concerns about sharing them with others and experiencing judgement as an inadequate mother. However, for another participant gaining reassurance that the thoughts were incompatible with her personality reduced her sense of distress. Similarly other mothers in the group reported that online forums, including the current study discussion, provided a sense of reassurance that other mothers had also experienced similarly unusual thought content. These normalising experiences appeared to be important factors in the maintenance of the mothers' wellbeing and not becoming distressed by their unusual thoughts. It is likely that such

normalising information might counteract dysfunctional interpretations (e.g. that the thoughts are a sign of being a bad mother or of mental illness) (Morisson, 1996), consistent with the findings that provision of normalising information, and the development of appraisals, which refute the accuracy of unwanted cognitions are effective interventions in reducing clinical distress (Sensky et al., 2000; Turkington & Kingdon, 2000).

Analysis of these participants' accounts provided data with which to investigate any similarities and differences in content with the thoughts and delusions identified in the postpartum psychosis literature. These findings will be discussed further, together with the findings of phase two of the study in chapter 7.

4.1.3 Reflections on Analysing the Transcripts

Recording of my thoughts and emotions during the process of analysis provided me with some insight into the ways I related to the data and the influences on my interpretation. I used notes on my own responses to consider how my perceptions were influenced by the data and how they in turn influenced understanding of the data. My presumptions on beginning analysis were that I knew the data well, as I had been part of the online discussions and had briefly reviewed the transcripts. However during each stage of familiarising myself with the data and in revisiting the data, I found that thoughts I had not reacted to during the interviews prompted surprise, curiosity and even worry on occasion. I found myself in an uncomfortable position when seeking out "unusual" thought content in the text; feeling conflicted in holding opposing views of valuing a normalising, non-pathologising position whilst actively seeking out irrationality and social unacceptability in participant accounts. I found myself talking to others trainee psychologists outside of the research process, in peer supervision in order to assess my reactions to thoughts and how they compared with others reactions to the thoughts. The final data presented reflect thoughts that the participants themselves labelled as unusual and maintaining these criteria in defining the thoughts allowed me to set aside my feelings and judgements, ensuring that participant accounts were presented in the context they were stated.

5. DEVELOPMENT OF SURVEY QUESTIONS

Whilst it was beyond the scope of the current study to develop a structured psychometric measure, there was a need to develop survey questions that could be used effectively in investigating the research question. This section will describe the process undertaken in developing the unusual thought items to be included in phase two of the study. Firstly the process of integrating phase one data with the relevant literature will be detailed. Secondly the process of developing the thought items will be described.

5.1 Concurrent Analysis

To maintain focus on the underlying question of whether the unusual thoughts might be similar to postpartum psychotic thought content, survey items were also grounded contextually in relevant postpartum psychosis literature. Concurrent Analysis (Snowden, 2010) was considered appropriate as a method of synthesising the primary data collected in phase one, with secondary data consistent with the research question. The method was a pragmatic choice in that it was beneficial in addressing the research problem, additionally the research team were knowledgeable in the methodology and so the supervision team could provide guidance in the method.

Whilst there are alternative methods of synthesising qualitative data, the particular benefits of the chosen method were that literature inclusion does not rely on like-for-like methodological approaches, rather, quality criteria can be based on broader factors, such as ethics, clarity and coherence of connections between data (Risjord, 2010; Snowden & Atkinson, 2012), as opposed to the more rigid framework of establishing methodological validity and reliability of studies for inclusion. Alternative meta-synthesis methods are likely to exclude potentially relevant studies based on these factors, rather than prioritising methodological quality and conceptual coherence (Snowden, Martin, Jomeen & Hollins-Martin, 2011). As there have been few studies describing the content of women's thoughts during postpartum psychosis, wider inclusion criteria ensured

that there was sufficient data to analyse. The method also allowed a level of face validity to be established in item development and an initial check for conceptual comparisons between the phase one examples and psychosis literature.

A literature search was conducted for papers with narrative qualitative content on women's experiences of postpartum psychosis. The papers were reviewed specifically for accounts of women's thought content during the episodes and those, which were focused on recovery, or third party narratives were excluded. Five papers which provided varying levels of description from women's perspectives on their experiences and thought content were included: Chandra et al, 2006; Heron et al., 2008; Engqvist et al., 2011; Glover et al., 2014; and Engqvist & Nilsson, 2013.

The papers and the data collected in phase one were reviewed concurrently, with a purposive focus on highlighting unusual thought content across the combined data set. Meaningful features of the data were identified and coded on the basis of groups of words, which appeared to relate to similar ideas and a table was produced to document convergent instances across the data. Supervisors and the researcher reviewed the table to ensure conceptual agreement across themes. This provided a larger data set with which to begin the development of survey items.

5.1.1 Question Development

The format of the unusual thought survey was based on review of other established self-report scales of cognition (Hall & Papageorgiou., 2005; Freeman et al., 2005). The format was designed to allow participants to respond to a list of statements and for these responses to be converted into a numerical value, enabling statistical comparison with data collected on other psychometric measures.

To generate the unusual thought survey items, statements were devised to reflect the categories of thoughts within the unusual thought data set. The statements were reviewed by both

supervisors, to consider accuracy of interpretation and highlight any aspects of diversion from the data extract in the process of question development.

As the other main self-report measures utilised in the study were based on Likert Scales, this was deemed an appropriate scale to maintain consistency and which would provide ordinal level data that could be subjected to parametric analysis and comparison. Consequently a 4-point Likert scale was devised ('*Not at all*' to '*Almost Always*') to ascertain whether and how often respondents had experienced a particular thought.

The statements were reviewed and refined on a number of variables. Firstly, whilst a number of statements (27) were initially generated from the data set, the relevance and acceptability for the specific population was considered and two recent mothers known to the researcher were consulted during this process. Some of the thoughts were considered of an extreme or idiosyncratic nature and so were discarded and the wording of each statement was also considered and refined for internal consistency by the researcher in collaboration with supervisors. The list was piloted with a small sample of service users from a local service supporting new mothers. The mothers provided feedback on their experience of answering the questions, their ability to interpret and respond to the questions, and any emotional responses evoked. Based on this feedback, the content and wording of the questions were refined for acceptability and comprehension. Feedback was also given that the women found it difficult to answer the questions openly, as although they could complete the pilot anonymously they felt that the service could easily identify those who had completed it.

Nineteen revised statements formed the final list of survey items alongside response Likert scales (figure 3). The order of the items was considered and a decision was made that the first and last items would be less emotive statements. A further considered limitation was the potential for various interpretations or misinterpretations of items, therefore free text was provided beneath each item for respondents to provide specific examples of thoughts they had experienced similar to each item.

Figure 3 Unusual Thought Questionnaire.

Below are some examples of thoughts that women have reported experiencing in the early days/weeks after giving birth. Please indicate how often you have experienced similar thoughts. **Since having my baby....**	Not at all	Occasionally	Frequently	Almost always	If 'Yes' please give an example of this kind of thought
1. I have had thoughts that didn't seem to belong to me.					
2. I have had thoughts or visions or harm coming to my baby.					
3. I have had thoughts that if I don't sleep facing my baby something bad could happen to the baby.					
4. When I am not with my baby I have had thoughts that my baby is not safe.					
5. I have had thoughts that my baby is really ill or dying.					
6. I have had thoughts that I must be with my baby all the time in case someone tries to take him/her.					
7. I have resented others holding/playing with my baby.					
8. I have thought that I do not trust anyone other than myself with the baby.					
9. I have thought that someone might want to harm my baby					
10. I have thought that my baby seems familiar as if I have known him/her previously.					
11. I have had thoughts that my baby could be someone from the past or might have been born before.					
12. I have thought that my baby is not mine.					
13. I have thought that I'm not connected to my baby when I'm not breastfeeding.					
14. I have thoughts about accidentally harming my baby.					
15. I have felt afraid of my baby.					
16. I have thought that my baby could have power or control over me.					
17. I have had thoughts about abandoning my baby.					
18. I have had thoughts that my baby could become contaminated.					
19. I have thought that I am disconnected from reality					

6. PHASE TWO METHOD

Phase two: Survey Data Collection

6.1 Design

A cross-sectional online survey design was used to investigate the experience of unusual thoughts and to assess for symptoms of anxiety, depression, sleep quality and birth satisfaction, which might be associated with the experience of unusual thoughts, in a sample of non-clinical women during the postpartum period.

6.1.1 Population and Sample

6.1.2 Inclusion criteria

The target population was women aged 18 and over who had given birth to at least one healthy child, within a period of up to four months; able to access the Internet and survey website; English speaking with a level of fluency to understand the information sheet and website. This post birth timeframe was designed to capture current postpartum experiences, as onset of postpartum psychosis is within this period, we might also expect any unusual thought content to present within this timeframe (Cantwell & Cox, 2006).

6.1.3 Exclusion Criteria

Mothers less than 18 years old, in recognition of the increased likelihood of vulnerabilities within this group. Non-English speakers and those without access to the Internet were excluded due to the use of an online survey design.

Women who reported a current mental illness were not excluded from the survey at point of completion, however, the survey collected information on current and previous diagnosis using two questions (as below) and at the point of analysis filtered out respondents indicating a current significant mental health difficulty:

1. *"Have you experienced/received treatment for a mental health difficulty following the recent birth of your baby?* If your answer is yes please choose a category which best describes your experience"* and

2. *"In the past have you been diagnosed with/received treatment for a mental health difficulty?* If yes, please advise if you have received support for any of the following…"*

Categories of major mental health difficulties were provided and a space to provide details of 'other' mental health difficulties.

At the point of analysis five participants from a total of 65 respondents were excluded on the basis of one reporting major depression, one mother reporting psychotic experience, two postnatal depression and one anxiety. HADS anxiety and depression symptom scores for these participants were all in the 'Abnormal Range' (11-21).

6.1.4 Recruitment

Two main methods of recruitment were employed.

1. Participants were recruited from Leeds Teaching Hospitals maternity wards at Leeds General Infirmary and St James's Hospital. The midwifery team provided 300 recruitment flyers to mothers within maternity discharge packs (see Appendix). Following discussion with the head of midwifery it was decided that given the sensitive nature of the research topic the researcher approaching new mothers on the ward might create discomfort. Following initial piloting feedback a group of mothers indicated that they had felt less comfortable completing the questionnaire when provided by a professional involved in their care. The recruitment strategy allowed those mothers who were interested in participating to do so anonymously.

The recruitment flyer invited participants to complete the questionnaire online and provided an email contact for the researcher to allow interested participants to make contact for further information.

2. The study was also advertised on parent focused websites and forums, (Netmums; http://www.netmums.com and Mumsnet; http://www.mumsnet.com) in order to reach a large number of the target population.

As an incentive for participation the flyer and study information advised that participants could choose to be entered into a £150 voucher prize draw.

6.1.5 Measures

The survey incorporated 1) the collection of demographic data, 2) measures of symptoms of anxiety and depression, 3) sleep quality and 4) birth satisfaction and 5) a measure of unusual thoughts. Previous research has indicated that anxiety (Martin & Penn, 2001; Freeman & Garety, 2003) and depression symptoms may be associated with psychotic experience (Scott et al., 2009; Varghese et al., 2011). Changes in sleep quality following birth have been associated with mood and cognitive difficulties (Okun et al., 2011) and levels of birth satisfaction have been associated with stress and psychological wellbeing in mothers (Quine, Rutter & Gowen, 1993; Michels, Kruske & Thompson, 2013); providing impetus for investigating an association between unusual thought content and these specific aspects of postpartum wellbeing. The measures used are detailed below.

1.   Demographics

The following demographic information was collected from participants:

- Age
- Marital status
- Ethnicity
- Parity
- Time since childbirth/no of weeks

2. The Hospital Anxiety and Depression Scale (HADS)

The HADS is a 14-item measure, which was used in the current study to screen for presence and absence of anxiety and depression symptoms (Zigmond & Snaith, 1983). It includes individual scales for anxiety and depression; seven questions to screen anxiety, seven for depression and is designed to ascertain the frequency of these symptoms over the past week. The measure was chosen as it has been validated in a perinatal population showing reasonable levels of internal consistency (ranged between 0.62 and 0.78) (Karimova & Martin, 2003; Jomeen & Martin, 2004), high levels of sensitivity and specificity (92.9% and 90.0%), low rates of misclassification (9.6%) (Abiodun, 1994). The ability to capture both anxiety and depression symptoms with one brief measure was also considered an advantage of the HADS in reducing the time demand on participants in the current study. (Please see Appendix F for a copy of the HADS questionnaire used in this study).

3. Pittsburgh Sleep Quality Index (PSQI)

The PSQI is a nine item self-report measure, which assesses sleep quality, latency, duration, habitual sleep efficiency and sleep disturbances (Buysse et al., 1989). Scoring is on a Likert scale ranging from 0 to 3 and the measure has good reported levels of internal consistency and reliability (Cronbachs alpha 0.83). Whilst it is designed for use across populations, the PSQI was selected as it has been validated for use in the perinatal population (Skouteris, Wertheim, Germano, Paxton, & Milgrom, 2009) and has been used in a number of studies assessing sleep quality in women during the pregnancy and the postpartum period (Jomeen & Martin, 2007; Dorheim et al., 2008; Mannion & Slade, 2014). In the current study the sleep duration and quality factors (questions 4 and 6) were used as these were considered the most relevant to assessing the impact of postpartum sleep disturbance whereas other questions are more specific to non-infant related sleep disturbances. See Appendix G for a copy of the PSQI scales used in this study.

4. Birth Satisfaction Scale Revised (BSS-R)

The BSS-R is a 10 item multi-dimensional self-report measure of birth satisfaction designed and validated for use in a postnatal population (Hollins-Martin & Martin, 2014). The BSS-R assesses three dimensions of birth satisfaction: quality of care, stress experienced during labour, and women's personal attributes. The BSS-R scale was selected as it has been has been proven as a psychometrically robust, reliable and clinically useful assessment measure of birth satisfaction (Cronbachs alpha 0.79) (Hollins–Martin & Martin, 2014). See Appendix H for a copy of the BSS-R used in this survey.

5. Unusual Thoughts Questionnaire

(Please see chapter three which describes the design of the unusual thought questionnaire and figure 2 for questionnaire in full).

The questionnaire was devised specifically for this study as no measures of postpartum psychotic ideation or unusual ideation in non-clinical postpartum populations were identified from published literature. The final survey consisted of nineteen unusual thought items, which were informed by qualitative data from phase one interviews and the literature. For each item participants were asked to indicate the occurrence and the frequency of each thought on a 4-point Likert scale (0-Not at all to 3-Almost Always). Respondents were also prompted to provide examples of thoughts they had experienced with similar themes.

6.1.6 Ethical approval

Phase two of the study was reviewed and approved by the Bradford Leeds Research Ethics Committee and received a favourable opinion (Ref: 14/YH/1277).

In acknowledgement of the sensitive nature of the research topic as described previously for the qualitative phase, the participant information and consent statements asked participants to identify someone they might talk to before completing the questionnaire in the case that they

experienced unease in answering any of the questions. Additionally a statement was included on the final page of the survey acknowledging the potential for emotional responses to the questions, providing a list of links to support websites and encouraging participants to contact their GP or Health Visitor if they would like to talk more about their experiences (see Appendix I). Contact details of the primary researcher and supervisors were also included to allow participants to make contact with any concerns or uncertainties regarding the research.

6.1.7 Procedure

The questionnaire was hosted via the Bristol Online Survey (BOS) system (https://leeds.onlinesurveys.ac.uk/shareyourthoughts). The initial pages on the survey website provided study information and a consent statement. Consent was considered to be given if they chose to progress to the next page of the questionnaire. Participants were able to log in and complete the survey in their own time and were able to withdraw from the study at any point before completing and submitting the survey in its entirety. Survey completion took approximately 15 minutes (as confirmed by questionnaire pilot) and participants were asked to provide an email address at the end of the survey for inclusion in the prize draw.

6.1.8 Analysis

The survey data was exported from the Bristol Online Survey package via Excel to SPSS and analysed using IBM SPSS Statistics Version 22. Checks were performed to ensure that response coding in BOS corresponded with response coding values in the SPSS data sheet. The data was also checked for any missing values and for convergence with raw data and original survey responses on BOS. Following this, descriptive statistics were conducted on the data to ascertain sample demographics and scores on the survey measures. Frequencies and prevalence of unusual thought items were calculated in order to address **Research Aim 2**: To establish whether unusual thoughts can be identified within a non-clinical postpartum population.

In order to address **Research Aim 3:** To identify whether, sleep quality, anxiety and/or depression, or birth experience are associated with the experience of unusual thoughts during the postpartum, correlation analyses were conducted on the data. Calculation of correlation coefficients provide a numerical value (between -1 and +1) indicating the direction and magnitude of the relationship between two variables.

6.1.9 Data Checks

Prior to analysis, checks were conducted to establish suitability for the parametric analysis of the correlation.

Calculation of frequencies and a histogram of the unusual thought outcome data indicated that the data did not meet normality assumptions. There was marked heterogeneity of variance in the outcome variable data. Calculations for skew (value, 1.7) and kurtosis (value, 4.0) of the outcome variable data indicated scores above the values for assumption of normality (-1 to +1). Additionally scatterplots, conducted to identify outliers, revealed two extreme cases in the outcome variable data.

Consequently a non-parametric correlation was found more suitable to account for the lack of normality in the unusual thought data and to minimise the impact of extreme cases. Furthermore as the survey was scored on Likert scales, the ordinal level data was most appropriate for non-parametric analysis. Spearman's correlation coefficient (Spearman, 1910) is a non-parametric version of the Pearson's product moment correlation (Pearson, 1896), which does not require assumptions of normality and involves ranking of the data prior to computing Pearson's coefficient. Spearman's correlation was chosen over other non-parametric methods of correlation (Kendal's tau), as it allows comparison with Pearson coefficients, which are utilised in the majority of other research studies.

The Bootstrapping method (Efron & Tibshirani, 1993) was applied to the analysis as the sample was relatively small and data did not meet assumptions of normality. Therefore the bootstrapping method, of generating random samples and replacement, allowed inference of confidence intervals (Efron & Tibshirani, 1993).

6.1.10 Alternative analysis

The purpose of the analysis was **t**o fulfill **Research Aim 3**: To identify whether the variables, sleep duration, anxiety symptoms, symptoms of depression or birth experience were associated with the experience of unusual thoughts during the postpartum. The calculation of the correlation coefficient in the current study was appropriate to answering this research question. However, the potential benefit of conducting further regression analysis to answer questions regarding the predictive relationship between variables could be to provide information on how much influence anxiety or depression symptoms for example, have in predicting unusual thought frequency. Unfortunately, the unusual thought data collected in the current study did not meet normality assumptions (as discussed above) and so violate the underlying assumptions of linear regression analyses. Whilst it is possible that the problems in the data could be corrected through use of transformation techniques, i.e. creating categories to enable logistic regression; the consequences as well as the benefits of this strategy were considered. For example, there is no guarantee that transforming the data would reduce problematic skew and some evidence that doing so may actually increase variability in the data (Glass, Peckham and Sanders 1972; Feng et.al. 2014). Ultimately this may produce outputs that may not accurately transfer to the original non-transformed data. While transformation can be useful in relation to normalising data distributions it may also devalue the data and result in type I or type II errors (Robert & Casella, 2004). In light of these considerations, it was decided not to conduct regression analyses for this thesis, however further investigation and development of the findings should consider how regression analysis could be utilised to answer additional questions about predictive relationships.

7. PHASE TWO RESULTS

Phase Two: Findings from the Online Survey

This chapter presents the results of the online survey data collection. Firstly, participant demographics will be provided along with descriptive statistics of scores on survey measures and frequencies of unusual thoughts amongst the sample. Following on from this, results of the correlational analysis will be reported and finally qualitative examples of unusual thoughts provided by survey respondents are presented.

7.1 Sample Profile

Table 4 provides demographics for the sixty survey respondents who were included in the final analysis. The participants were predominantly aged 25-34 (73.3%; N=44), almost entirely White British (91.6%) and married (73.3%; N=44). The majority of the respondents were first time mothers (58.3%; 35) with parity across the sample ranging from 1-5 births. The mean number of weeks postpartum was 9.7 (SD 4.7).

Table 4 Phase Two Participant demographics

Demographic Characteristics	Participants (n=60)
Age Group	N (%)
18-24	6 (10)
25-34	44 (73.3)
35-44	10 (16.7)
Ethnicity N (%)	
White/White British	55 (91.6)
Black/Black British	1 (1.6)
Not specified	4 (6.6)
Relationship Status N (%)	
Married	44 (73.3)
Single	4 (6.7)
Partnered	12 (20)
Parity N (%)	
One	35 (58.3)
Two	17 (28.3)
Three	5 (8.3)
Four	2 (3.3)
Five	1 (1.7)
No of Weeks Postpartum mean (SD)	9.7 (4.7)

7.2 Descriptive Statistics

Table 5 provides the means and standard deviations of the participants' scores across the range of questionnaire measures. Mean scores are presented for unusual thought frequency; symptoms on the Hospital Anxiety and Depression Scales (HADS), the Birth Satisfaction Scale-Revised (BSS-R) and sleep quality and sleep duration factors on the Pittsburgh Sleep Quality Index (PSQI).

Table 5 Scores of sample (N=60) on questionnaire measures

Measure (scale range)	Mean	SD
Unusual Thought Frequency (0-57)	5.33	5.31
HADS-Anxiety (0-21)	6.42	4.2
HADS-Depression (0-21)	5.87	3.6
BSS-R (10-50) *	25.20	7.7
PSQI: Average hours of sleep per night	5.53	1.2

PSQI: Sleep quality		**N (%)**
	Very good	3 (4.9)
	Fairly good	23 (37.7)
	Fairly bad	27 (44.3)
	Very bad	8 (13.1)

* A score of 10 represents least birth satisfaction and 50 most

7.3 Prevalence of Unusual Thoughts Reported in Sample

Results indicated that 83.3% (N=50) of the sample endorsed experiencing at least 1 unusual thought item; Table 6 presents the list of questionnaire responses and the percentage of the sample endorsing each unusual thought item. All of the items were answered positively by at least one participant; with item endorsement ranging between 1.6% and 53.3% of participants. The total number of positive responses is summed from the number of participants reporting experiencing the thought/image 'occasionally', 'frequently' or 'almost always'. The most common reported thoughts amongst the sample were related to the infant's safety, thoughts and visions of harm coming to the infant and the need to sleeping facing the baby.

Table 6 Prevalence of unusual thoughts reported in sample N=60

Unusual Thought	Not at all N (%)	Occasionally N (%)	Frequently N (%)	Almost always N (%)	Total positive response N (%)
I have had thoughts that didn't seem to belong to me.	46 (76.7)	13 (21.7)	1 (1.7)	–	14 (23.3)
I have had thoughts or visions or harm coming to my baby.	33 (55)	20 (33.3)	7 (11.7)	–	27 (45.0)
I have had thoughts that if I don't sleep facing my baby something bad could happen to the baby.	40 (66.7)	12 (20)	6 (10)	2 (3.3)	20 (33.3)
When I am not with my baby I have had thoughts that my baby is not safe.	28 (46.7)	25 (41.7)	5 8.3	2 (3.3)	32 (53.3)
I have had thoughts that my baby is really ill or dying.	49 (81.7)	9 (15)	2 (3.3)	–	11(18.3)
I have had thoughts that I must be with my baby all the time in case someone tries to take him/her.	44 (73.3)	14 (23.3)	1 (1.7)	1 (1.7_	16 (26.6)
I have resented others holding/playing with my baby.	39 (65)	16 (26.7)	2 (3.3)	3 (5)	21 (35.0)
I have thought that I do not trust anyone other than myself with the baby.	39 (65)	16 (26.7)	4 (6.7)	1 (1.7)	21 (35.0)
I have thought that someone might want to harm my baby	55 (91.7)	4 (6.7)	–	1 (1.7)	5 (8.3)
I have thought that my baby seems familiar as if I have known him/her previously.	49 (81.7)	5 (8.3)	2 (3.3)	4 (6.7)	11 (18.3)
I have had thoughts that my baby could be someone from the past or might have been born before.	57 (95)	2 (3.3%)	1 (1.7)	–	3 (5.0)
I have thought that my baby is not mine.	57 (95)	3 (5)	–	–	3 (5.0)
I have thought that I'm not connected to my baby when I'm not breastfeeding.	51 (85)	7 (11.7)	2 (3.3)	–	9 (15.0)

I have thoughts about accidentally harming my baby.	39 (65)	16 (26.7)	5 (8.3)	–	21 (35.0)
I have felt afraid of my baby.	55 (91.7)	4 (6.7)	1 (1.7)		5 (8.3)
I have thought that my baby could have power or control over me.	55 (91.7)	3 (5)	1 (1.7)	1 (1.7)	5 (8.3)
I have had thoughts about abandoning my baby.	55 (91.7)	5 (8.3)	–	–	5 (8.3)
I have had thoughts that my baby could become contaminated.	59 (98.3)	1 (1.7)	–	–	1 (1.6)
I have thought that I am disconnected from reality	44 (73.3)	13 (21.7)	2 (3.3)	1 (1.7)	17 (28.3)

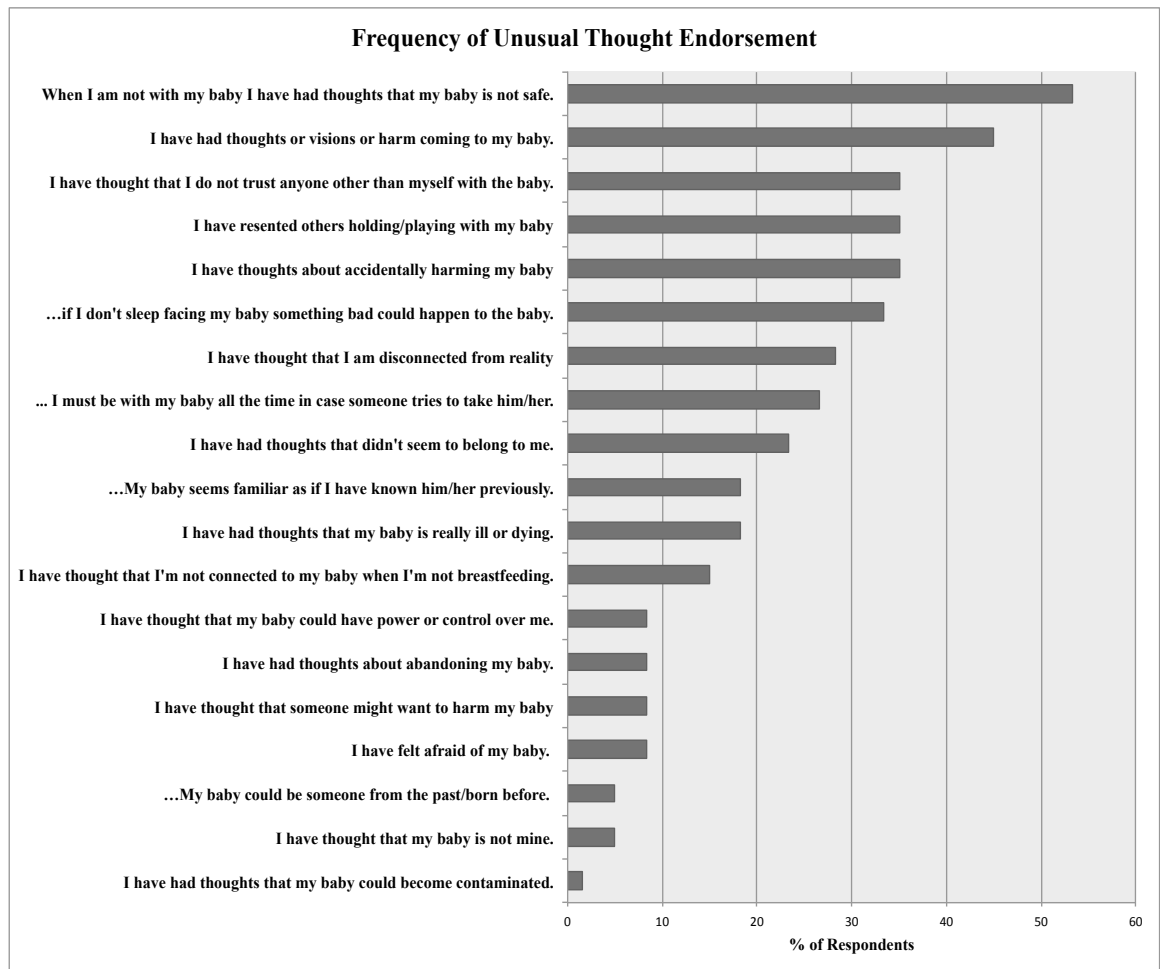**Figure 4 Unusual Thoughts in order of frequency of endorsement**

Figure 4 provides a graphical representation of the data provided in table 6, in order of the frequency with which each thought was endorsed. Respondents, who reported experiencing one or more of the thoughts or having provided examples of other unusual thought content, were asked to rate their level of worry in relation to the thoughts. None of the sample who experienced the thoughts reported being 'extremely worried' the majority of the participants; 26 (49.1%) indicated that they were 'not at all worried'; 24 participants (45.3%) were 'a little worried' about the thoughts; while three participants (5.7%) were 'very worried'.

7.4. Association Between Unusual Thoughts and Other Variables

7.4.1 Unusual Thoughts and Anxiety Symptoms

Spearman's Correlation Coefficient indicated that total HADS anxiety score significantly and positively correlated with the frequency of unusual thoughts, r_s = .58, 95% BCa CI [.402, -.736], *p= .000.* Higher anxiety scores in the sample were 'moderately' associated with higher reported frequency of unusual thoughts, with anxiety sharing 33% of the variance in ranks between unusual thought total score and anxiety score.

7.4.2 Unusual Thoughts and Depression Symptoms

Spearman's Correlation Coefficient indicated that total HADS depression score was significantly and positively correlated with frequency of unusual thoughts, r_s = .54, 95% BCa CI [.318, -.735], *p= .000.* Higher symptoms of depression were 'moderately' associated with unusual thoughts; with depression sharing 30% of variance between ranked variables.

7.4.3 Unusual Thoughts and Birth Satisfaction

Results of correlation analysis indicated no significant association between participant scores on levels of birth satisfaction and unusual thoughts frequency at the *p<0.01* level. There was a weak, although significant, negative correlation between the two variables at the *p< 0.05* level: r_s = -.31, 95% BCa CI [-.536, -.050], *P=0 .015;* indicating a weak association between lower scores on the birth satisfaction scale (indicating less satisfaction with birth experience) and higher frequency of unusual thoughts. Birth satisfaction shared only 9.8% of variance between the ranks of variables.

7.4.4 Unusual Thoughts and duration of sleep

No significant relationship was found between the variables, sleep duration and unusual thoughts at the *p<0.01* alpha level. Spearman correlation indicated a weak negative relationship at the *p< 0.05* level between PSQI duration of sleep (hrs. per night) and unusual thought frequency, r_s =-*.261, 95%* BCa CI [-.516- .018], *p= .046.,* accounting for 6.8% of variance between ranks.

7.5 Qualitative Survey Responses

Some of the survey participants provided examples of specific unusual thoughts they experienced. Some of these thoughts were linked to specific survey items and additional thoughts were provided in response to the survey question: "*Have you had any thoughts not listed above which you think others might consider unusual? If so, please give examples*" Thoughts were clustered into themes using the framework developed in phase one. Examples are provided below in Table 7. The most commonly reported examples were related to infant harm, other examples were thoughts of abandonment, mistrust of others; disconnection and strong and unexpected feelings in line with phase one themes.

Table 7 Phase two respondent examples

Theme	Survey Respondent Example
Potential Harm	
Visualising	Everything and anything, turning my back on her with the dog present- I'd imagine a blood bath with my precious baby's arm in her mouth! She's the sweetest dog and has never had an aggressive streak.
	We were thinking of taking a ferry and I kept visualising dropping him overboard and him being swallowed by the ocean.
	Accidents I see them everywhere.
	I had thoughts that I would drop him, and lots of dreams of harm e.g. forgetting him and leaving him in the house alone.
Mistrust	Panic if anyone else holding her.
	I feel extremely protective of my baby and I find it hard to hand him over to others, even though I know I should.
	In hospital I was told I could leave him to go for a shower but wouldn't as I feared someone would pick him up and walk off the ward with him.
Abandonment	When she's crying at 4am and I've fed her and changed her and burped her and played with her and she's still crying.... I wish I could just go out the door, but I cant.
*Not wanting the baby.	In the first weeks after birth I didn't really want her.
	I sometimes wished that he was back inside the womb …I don't want to get him out again though.
Connection	
Disconnected	I have felt detached from my thoughts if that makes sense, like they are not real or mine.
	I feel completely numb inside.
	The first week I felt like a different person.
Strong and unexpected feelings	Worried I loved him too much and that wanting to kiss and cuddle him so much was not right! (Realised this was absurd!)
	Jealous of my daughter's connection to my husband, against my own connection, in the 1st week as it felt like he treated me differently.
	Feel like we now connect and even though she can't talk we communicate like we have always known each other.

- New theme

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In phase one a subtheme of potential harm was '*foreign bodies*'; arising from two of the mothers thoughts of not wanting to introduce substances originating outside of the body to the infant and one mothers hypervigilence in relation to exposure to germs. This was interpreted as a thought related to infant contamination, however this theme was not supported in phase two survey data. Only one respondent endorsed this thought ("I have had thoughts that my baby could become contaminated") and no respondents examples, fitted into this category. In light of this, this item might be discarded in development of a model of unusual postpartum thoughts. Interestingly, the theme of contamination, which was not supported in this data set, is one which is typically linked to obsessional thought content (Fairbrother & Abromowitz, 2007; Lord, Rieder, Hall, Soares, & Steiner, 2011) and for example is included the Perinatal Obsessive Compulsive Scale (Lord et al., 2011) i.e. "Your baby being contaminated (e.g. by germs)" (Postpartum POCS thoughts: Lord et al. 2011). Therefore in development of a model of unusual thought experience, discarding this item potentially strengthens the focus on psychotic-like content and further distinguishes the construct from obsessional thought content. Thoughts of "not wanting the baby" arose as an additional theme in examples; one that was not, included within the original 19 survey items.

Figure 5 Development of unusual thought themes
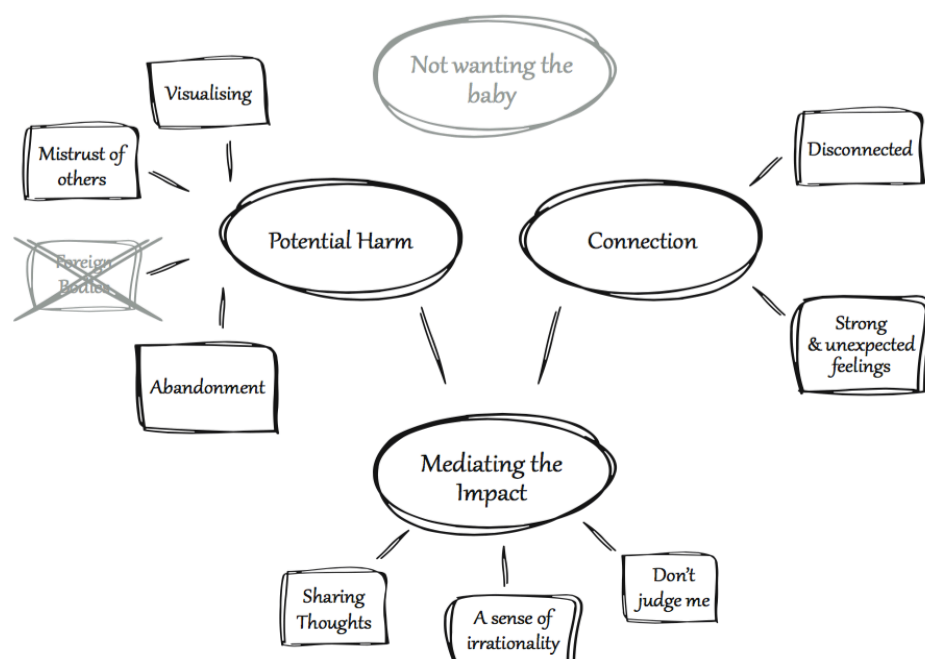
8. DISCUSSION

The aim of the research was to investigate the content and occurrence of unusual thoughts within a non-clinical postpartum population. An exploratory hypothesis was that women without mental illness might experience thought content similar to that of those diagnosed with postpartum psychosis.

Research Question:

What are the unusual thoughts that women without mental illness experience after childbirth?

Overall Aim: To explore the phenomenon of 'unusual' thoughts in non-clinical mothers' during the early period after birth.

Aim 1: To investigate the content of unusual thoughts

Aim 2: To establish whether unusual thoughts can be identified within a non-clinical postpartum population.

Aim 3: To identify whether, sleep quality, mood or birth experience are associated with the experience of unusual thoughts during the postpartum.

Online focus group discussions were conducted in which women were asked to describe any unusual thoughts they had experienced during the early postpartum, this revealed thoughts that were perceived as unusual with themes of 'potential harm' to the infant and 'connection' to the infant, as well as ways in which the mothers 'mediated the impact' of these thoughts. These qualitative examples of thoughts were integrated with data from the literature on postpartum psychotic thought content and survey questions were developed in order to further investigate the occurrence. The results from the survey provide evidence of the prevalence of a range of unusual thought content within this non-clinical sample of mothers during the postpartum and help to build upon the findings from the phase one qualitative data. This discussion will consider findings across both phases of the current study.

8.1 Main Findings

8.1.1 Commonality of Unusual Thoughts During the Postpartum

Overall the survey results suggest that mothers in a non-clinical sample do report the experience of unusual thought content during the postpartum period; indicated by 83% of the sample endorsing at least 1 unusual thought item. Consistent with previous studies, the results provide evidence that unusual thought content, typically considered to be associated with clinical disorder can occur in absence of pathology (Jennings et al., 1999; Hall & Wittkowski, 2006; Murray & Finn, 2011). Thought items most commonly endorsed were: thoughts that the baby was not safe, thoughts and visions of harm coming to the infant, mistrust, resenting others' interactions with the new-born and thoughts that someone might take the baby. The cross sectional survey findings were consistent with the predominant 'threat' themes identified in the qualitative data collection phase; providing stronger evidence for the type, and characteristic, of unusual thoughts experienced by women in the non-clinical population.

Themes of 'death and impending doom' and 'safety of the baby' have been and reported in previous research (Hall & Wittowski, 2006) and the current findings extend those of Jennings et al. (1999) who proposed that passive thoughts of infant related harm might be common in a non-clinical population. Aside from themes of threat, a smaller number of the participants endorsed unusual ideas, which were more difficult to categorise, for example; "I have thoughts that my baby seems familiar as if I have known him/her previously" 18%, "I have thoughts that my baby could be someone from the past or might have been born before" 5%, "I have felt afraid of my baby" 8.3%, "I have thought that my baby could have power or control over me" 8.3% and "I have thoughts about abandoning my baby" 8.3%. These thoughts were consistent with ideas identified in literature describing accounts of postpartum psychotic ideation (Chandra et al, 2006; Engqvist et al., 2011; Engqvist & Nilsson, 2013). The finding that participants were, on the whole, not distressed by their thoughts or were only 'a little worried' by the occurrence

supports the theory that whilst similar thought content might arise, such thoughts are experienced as less extreme and less distressing in non-clinical populations (Peters et al., 1999).

8.1.2 Variables Associated with Unusual Thoughts

The association between anxiety symptoms and frequency of unusual thoughts was consistent with the links identified between anxiety and threat themed delusional thoughts (Morrison, 2001; Freeman & Garety, 2003; Kaney, Wolfenden, Dewey, & Bentall, 1992) and associations between anxiety symptoms and psychotic-like experiences in non-clinical populations (Varghese, et al., 2011). Close examination revealed that themes of the most commonly reported participant thoughts were consistent with emotions of fear and anxiety, suggesting that some of these thoughts might be manifestations of an underlying sense of threat experienced during this stage. As discussed earlier, in the non-clinical population a normalising explanation is that raised anxiety and activation of these thoughts in conscious awareness may serve as an adaptive function. Alerting mothers to the ways in which they themselves or external forces could harm their infants, increasing vigilance to the worst possible outcome in order to ensure that it does not occur. Theoretical understanding of the emotional regulation system suggests that activation of the brain's threat response is an adaptive function in new, unfamiliar or unsafe circumstances, manifested in thoughts and responses that may be focused on potential threat (Gilbert, 2009). The response only becomes problematic in cases of repeated or prolonged activation. Therefore, a period of seemingly irrational processing (Welford, 2012) may be functional to the mother's assessment of her new-born's safety and therefore its survival. Additionally, other types of unusual thoughts might be understood as an internal sense of threat related to the mother's own feelings toward the new infant. For example strong or unexpected emotions, a lack of expected emotion, fears relating to responsibility or power over the infant, and connecting with a new unfamiliar relationship. Of course the results only indicated association, at a moderate level, suggesting that anxiety symptoms are only one variable

associated with the occurrence. Furthermore, the experience of unusual thoughts may have increased the mothers' anxiety symptoms rather than anxiety influencing frequency of thoughts.

Higher depressive symptom scores, whilst within the non-clinical range, were also associated with the frequency of unusual thoughts. A finding consistent with a number of studies indicating that both anxiety and depression symptoms are significantly associated with self reported psychotic-like experiences and delusions in nonclinical populations (Varghese et al., 2011; Wigman et al., 2011) and theory that psychosis and depression may be interrelated phenomena existing on the same continuum (Verdoux et al., (1999). Additionally, examination of some of the more common themes of 'death and impending doom' and 'safety of the baby' indicate consistency with Hall & Wittowski's, (2006) study of cognitions associated with depression in mothers during the postpartum. When experiencing threat, evolutionary safety strategies are not only preparation for fight or flight, but also include submission, withdrawal and disengagement as a strategy of protecting oneself from further psychological pain (Gilbert, 2009). For example, a response to a social or relational threat can be disconnection, loss of affiliation and when the threat is persistent can lead to depression (Gilbert, 2009). Beck (1996), from interviews with 12 women experiencing postnatal depression, found that feeling overwhelmed by caring responsibilities and the fear that they would be unable to cope with the infant, led to the mothers "unconsciously erecting a wall to separate themselves emotionally and physically from their children" (cited in Hagen, 1999). The mothers in phase one of the current study illustrated thoughts of physical separation in their descriptions of wanting to abandon their babies when feeling overwhelmed; indicating that these difficult emotions are not limited to women with diagnosed mental illness.

Thus an increase in thoughts, depicting the infant in catastrophic circumstances might lead to increased depressive symptomology, reduced affect and affiliation as a psychological form of protection in the case of infant death or in managing the internal threat of shame in feeling unable to cope with mothering responsibilities. Alternatively, feeling intensely overwhelmed by early motherhood might lead to a depressive response in which thoughts that the infant is 'ill

fated', is 'evil' or 'to be feared' (content identified in mothers with psychosis - and a small percentage of non-clinical mothers in the current study) function to psychologically distance a mother from the infant; a current source of overwhelming threat. In clinical mothers, both depression and psychosis have been linked to thoughts of infanticide, the most extreme method of physical and psychological separation. If as theory suggests, there exists a continuum spanning neurosis and disorder (Peters et al., 1999; Johns & Van Os, 2010; Bentall, 2003) then in some proportion of the 70% of mothers, who experience non-clinical levels of depressive affect (baby blues), we might expect less extreme thoughts of this nature. Evolutionary theorists have suggested that postpartum depression may serve a function of rallying support for the mother in caring for her infant (Hagen, 1999) and from this perspective unusual thoughts may alert a mother to feeling overwhelmed and the need to seek support. When thoughts are shared women may gain the reassurance or support needed, when they are supressed or hidden due to being considered unacceptable, secondary distress may ensue.

Interestingly, whilst literature has associated sleep disruption, a common feature of the postpartum, with psychotic-like experiences (Hunt & Silverstone, 1995; Freeman, Pugh, Verontsova, Southgate, 2009), the current study found only a weak correlation between sleep duration and unusual thoughts. It may be that this weak association reflects slightly less settled sleep in light of women's morbid concerns regarding sudden infant death syndrome. However, as stated the associations were weak and the findings of this study do not suggest that the unusual thoughts found in this non-clinical sample were largely linked to poor sleep. Lower levels of satisfaction with childbirth experience also had weak correlation with unusual thought frequency when significance levels were reduced, suggesting that anxiety and depression symptoms may play a much stronger role than other variables in mediating the experience of unusual thoughts in the postpartum. Further research in a larger sample would be beneficial in investigating strength of predictive factors.

8.1.3 Do these Thoughts Converge with Postpartum Psychosis Experience?

A starting point of the study was a question of whether or not the unusual thoughts identified might be comparable to the themes and topics of thought content described in postpartum psychosis. Thoughts identified within this non-clinical sample can be broadly categorised and reviewed for similarities in content and theme with qualitative accounts of postpartum psychosis. For example:

8.1.4 Themes of Potential Harm

A principal theme identified in phase one accounts, and most commonly reported in the phase two survey, was of potential harm to the infant. This was consistent with themes identified in Engqvist et al. (2011) who reported from narratives of women with postpartum psychosis (PP) (Engqvist & Nilsson, 2013), and themes in Chandra et al. (2006), from their investigation into the content of delusions related to the infant.

Table 8 Comparisons of thoughts of potential infant harm in PP literature, with Phases 1 and 2 of the current study.

Content from PP descriptions	Qualitative content from current study	Current study survey response
"Mothers had delusions that the infant would be killed or harmed" – (Chandra et al., 2006)	"I had, and still have, visions in my head of my baby being run over when pushing the pram" *(Liz, Phase One)* "Everything and anything, turning my back on her with the dog present - I'd imagine a blood bath with my precious baby's arm in her mouth! She's the sweetest dog and has never had an aggressive streak" *(Survey Respondent, Phase Two)*	I have had thoughts or visions or harm coming to my baby**.** **Yes N=27 (45%)**
"Being afraid of hurting the baby accidentally contributed to their reluctance to handle the baby" (Engqvist, 2011).	"Worry may hurt baby when doing everyday tasks inadvertently" *(Survey Respondent, Phase Two)*	I have thoughts about accidentally harming my baby. **Yes =25 (35%)**

8.1.5 Themes of Paranoia and Mistrust

Similar paranoid ideation can be identified across accounts, for example, thoughts of someone taking their babies away, others posing a threat to their babies and distrust in others.

Table 9 Comparisons of thoughts of paranoia and mistrust in PP literature, with Phases 1 and 2 of the current study.

Content from PP descriptions	Qualitative content from current study	Current study survey responses
"Someone will take the baby away" (Chandra et al., 2006) "I had incredible fears, including that the baby was kept from me or would be taken from me" (Engqvist et al., 2011)	"I couldn't let her out of my sight for quite a few weeks, although I breastfed my other two daughters I was unable to this time round and I had the irrational thought that because of this someone could take her away from me" (*Diane, Phase One*) "In hospital I was told I could leave him to go for a shower but wouldn't as I feared someone would pick him up and walk off the ward with him" *(Survey Respondent, Phase Two)*	I have had thoughts that I must be with my baby all the time in case someone tries to take him/her. **Yes N=16 (26.6%)**
"Six of the women were paranoid…they imagined that someone wanted to hurt them or the baby, but they did not know who it was" (Engqvist et al., 2011) "They were very protective of the baby and had no confidence in somebody else caring for him" (Engqvist et al., 2011).	"You never know if they might hurt your baby. Completely irrational but you cant help feeling fiercely protective. Strangers are drawn to babies this can sometimes feel like a threat" (*Amy, Phase One*) "I feel extremely protective of my baby and I find it hard to hand him over to others, even though I know I should" *(Survey Respondent, Phase Two)*	When I am not with my baby I have had thoughts that my baby is not safe. Yes N=32 (53.3%) I have thought that someone might want to harm my baby. Yes N=5 (8.3%) I have thought that I do not trust anyone other than myself with the baby. Yes N= 21 (35%)

8.1.6 Uncommon Ideas

Chandra et al. (2006) identified what were described as "bizarre or uncommon delusions, difficult to categorise" in a sample of 105 women who experienced postpartum psychosis. Survey respondents within the current study endorsed similar unusual ideas however, additional examples of such unusual thoughts were not provided by respondents.

Table 10 Comparison of uncommon ideas identified in PP literature with items endorsed in phase 2 of the current study.

Content from PP descriptions	Current study survey responses
"Firstly I was very afraid of my baby. Afraid all the time" (Enqvist & Nilsson, 2013) "The baby was a Devil" (Chandra et al., 2006)	I have felt afraid of my baby. **Yes N=5 (8.3%)** I have thought that my baby could have power or control over me. Yes N=5 (8.3%)
"A relative who died before marriage is born again as my daughter" (Chandra et al., 2006)	I have thought that my baby seems familiar as if I have known him/her previously. **Yes N=11 (18.3%)** I have had thoughts that my baby could be someone from the past or might have been born before. **Yes N=3 (5%)**

Whilst it is difficult to state the exact nature of the thoughts identified in the current study there are clear parallels between the content of postpartum psychotic thought content and those identified in the current non-clinical sample. It may be argued that some of the thoughts identified especially those related to harm also converge with obsessional thoughts, depressive ideation and other infant harm related thoughts identified in postpartum populations (Jennings, et al., 1999; Hall & Wittkowski, 2006; Fairbrother & Abramowitz, 2006). This is especially understandable if the same emotional processes underpin disorders (e.g. Anxiety has been implicated in theoretical frameworks of both OCD and Psychosis). Whilst overlap is likely, the potential to refine and develop the unusual thought model and item list is demonstrated by the discarding of the contamination item (i.e. figure 4 pp. 83.), which was not supported by phase

two survey data and has been linked more specifically to perinatal OCD thought content (Fairbrother & Abromowitz, 2007; Lord et al., 2011)

It is also possible that as suggested by Morrison (2005) unwanted thoughts and images, which occur across disorders may be the same phenomena at the outset, however additional variables (including interpretation of origin and appraisal) contribute to the course and development of a specific disorder. Nevertheless, from the current exploratory research it can only be concluded that aspects of thought content reported by a non-clinical sample have similarities to that of postpartum psychotic thought content, suggesting some support for a continuum model. An alternative explanation is that many of these thoughts simply reflect typical motherhood concerns, however when women have been diagnosed with psychosis, all of their thoughts are considered through a lens of pathology.

8.2 Clinical Implications of the Findings

The study identified a range of unusual thought phenomena including passive harm related thoughts and thoughts with similar unusual themes to those identified in thoughts of women experiencing postpartum psychosis. The value of these findings is in promotion of open dialogue between mothers and professionals regarding the occurrence and content of such thoughts; dialogue that will encourage alternative non-pathologising explanations for these experiences where appropriate. According to Morrison (2005), when unusual intrusive thoughts are experienced, "fear of going crazy" is commonly reported as causing distress in individuals who progress to develop psychosis (Morrison, 2005); a fear reported by one mother in Phase One of the current study and mothers in Engqvist et al. (2011). Furthermore, if appraisal of an event is a key aspect in differentiating clinical and non-clinical experience (Morrison, 2005), then alerting mothers to the findings that unusual thoughts occur without mental illness is an important aspect in promotion of maternal mental wellbeing. As illustrated by the women's accounts in Phase One of this study, finding other mothers who could identify with their

experiences and concur that the unusual thoughts were a commonly experienced postpartum phenomena rather than a sign of impending mental illness, was a key factor in mediating any distressing impact. Studies indicate that when women have no explanations for culturally unacceptable thoughts, they struggle to accept themselves and fear that they will be judged negatively by those close to them and society (Edwards & Timmons; Murray & Fin, 2011). Prolonged experiences of self-judgement and fear of societal judgement can be detrimental to physical and psychological wellbeing (Gilbert, 2009) during the first year in which mother-infant interaction is essential to healthy child development (Murray & Andrews 2000; Gerhardt, 2004). In contrast compassionate responses developed through understanding and acceptance, have been linked to the natural release of oxytocin (Neff, 2003) a chemical, found to decrease maternal anxiety, increase calmness and facilitate bonding (Moore, Anderson & Bergman, 2007). Therefore dissemination of the findings of the current study and further research into the phenomena can encourage normalising and self-compassionate responses from mothers and health professionals.

Furthermore, the collation of examples of the types of unusual thoughts identified in the non-clinical population can inform clinical assessment. Thoughts identified as prevalent in a sample of non-clinical mothers can be used as examples in assessment to aid in differentiating from more extreme thoughts experienced by mothers experiencing psychosis. Hence, avoiding pathologising, and aiding in the correct identification of mothers who require additional support.

Online research methods have been utilised throughout this study and interestingly online forums were the place that mothers in phase one reported feeling most comfortable and most regularly sought out information regarding their unusual thoughts. With the drive to increase technological innovation within the NHS (NHS England, 2015), online computerised cognitive behavioural therapy (CCBT) and Psychoeducation, have already been implemented in some areas of mental health service provision. Additionally Action for Postpartum Psychosis (APP) facilitates an online forum for mothers diagnosed with psychosis. A similar forum may be beneficial for providing information, support and opportunities to share and check mental health

experiences for women who experience unusual thoughts non-clinically. Recognising the opportunity to provide evidence-based information within a health-professional-led forum online; enabling mothers to access advice via a medium they feel comfortable with, could be beneficial in advancement of maternal psychological wellbeing.

8.3 Limitations of the Study

8.3.1 Sampling limitations

Convenience sampling methods were employed across both phases of the study, which may have impacted on how representative the sample was, for example only those with access to the Internet and ability to read English participated in either phase. Furthermore, demographic information indicated that participants across both phases one and two of the study were predominantly White British; married and aged 25-34. This lack of diversity limits the generalisability of the findings and it would be important for future research to include a more diverse sample of participants as amongst other factors differences in cultural contexts and beliefs are likely to play a key role in the interpretation of what are deemed to be unusual thoughts. It is also noted that across both phases of the study small participant numbers will impact on the validity and generalisability of findings. This may have been addressed in phase two through provision of paper versions of questionnaires at recruitment sites with a postal return option. Possibly increasing the size and generalisability of the sample through the potential to reach disadvantaged groups and those without Internet access.

Generalisability of the findings is also limited by the self-selecting nature of participation. Participants across both phases were those who specifically chose to opt-in to the research process, suggesting that there may be particular characteristics of this sample, which led to their interest in participation. Unfortunately, as demographic details of those who were provided with information on the study and chose not to participate were not collected, comparisons between the groups cannot be made.

It was noted that the mean self-reported HADS scores for anxiety and depression symptoms were relatively low in the current sample (HADS A = 6.42 (SD 4.20) and HADS D = 5.87 (SD =3.60). The mean anxiety score in particular was notably lower to that reported in previous non-clinical females samples (e.g. Caci, Bayle, Mattei, Dossios, Robert & Boyer (2003) HADS A= 8.57 (SD 3.56) and HADS D = 3.23 (SD 2.09)). This may be an indication that the sample of women who responded to the current survey is made up of those who experience particularly lower levels of anxiety post-birth. In the current sample this may reflect the predominance of married participants, who may feel more emotionally supported and therefore have higher levels of wellbeing. This suggests that, the findings of the current study may not generalise to women who do not share these characteristics. Interestingly, whilst both anxiety and depression symptoms are expected to be generally higher during the postpartum period, other studies have also reported similarly low levels in non-clinical postpartum samples. For example, Tuohy & McVey (2008) HADS A= 6.92 (SD 4.50) and HADS D = 5.03 (3.80) and Van Bussel, Spitz and Demyltenare (2009) mean postpartum HADS A = 4.11 (SD 2.94). The low scores across research into anxiety and depression symptoms during the postpartum period might be an indication that research samples tend to consist of women who feel able to participate due to having higher levels of wellbeing. In a replication of the study it would be important to access a more representative sample and consider whether anxiety and depression symptoms differ. In addition, the time constraints associated with a research degree impacted on the number of participants that were able to be recruited (N=60). It may be beneficial to repeat the study using a larger sample size in order to account for bias identified in statistical analysis (for example, outliers in the unusual thought data, normality assumptions), potentially strengthening the findings. In phase two it was decided not to conduct regression analyses on the data (as discussed on page 84), however further investigation and development of the findings should consider how regression analysis could be utilised to answer additional questions about predictive relationships.

8.3.2 Measurement limitations

A further consideration and possible limitation to validity is how the language used may have had bearing on the types of thoughts participants most frequently shared. For example, whilst the term 'unusual' was utilised in-line with psychological terminology for thoughts experienced in psychosis (e.g. unusual beliefs), it is noted that the word may have alternative interpretations and possibly carry negative connotations. The mothers in this study most frequently provided thoughts with negative content; related to harm or catastrophe. It is possible that rather than a true indication that these are thoughts most frequently experienced, higher reporting may have been an effect related to terminology. Additionally the specific nature of language used in survey item 13 (I have thought I'm not connected to my baby when not breastfeeding) may have led to under reporting of similar thoughts for mothers who were not breastfeeding. In further refinement of the questionnaire it may be beneficial to adjust the wording to 'feeding' or 'when not holding or caring for my baby' in order to increase generalisability, whilst still capturing thoughts related to disconnection from the infant.

It is also noted that some of the thought items derived from the postpartum psychosis literature were not apparent in phase one participant accounts, however were endorsed as being experienced by the survey participants in phase two. This suggests that a wider range of thoughts occur than were expressed by participants within the online focus group. It is possible that the range of thought content shared by participants within the group discussions was biased by social desirability, with participants tending not to share, or to under report, certain types of thoughts; possibly content deemed of a more sensitive nature or more commonly associated with psychotic beliefs. Women may still have been sensitive to sharing thoughts and being judged by others even within the online environment.

Whilst anonymous surveys and online data collection methods have limitations, the data collection method utilised in this research has been reported as useful in providing a safe environment for the disclosure of unusual thoughts in a non-clinical population (Freeman et al., 2005). This study has also identified and generated a number of helpful questions for use in clinical work and in future research.

8.4 Recommendations for Future Research

This study was exploratory and sought to establish whether or not evidence of unusual thought content exists as an aspect of non-clinical postpartum experience. In light of the findings, further research might focus on a larger prevalence study to investigate the occurrence in the wider postpartum population employing more robust controls for previous psychotic experience. Validation of findings in a larger more representative sample would be beneficial in development of a framework of unusual thought occurrence and further investigation is also required in establishing an explanatory model of the hypothesised postpartum psychosis continuum. In order to inform an explanatory model, further research might also investigate associated or predictive factors such as attachment, pre-pregnancy or antenatal anxiety and depression.

Additionally, whilst it was beyond the scope of this study to develop and investigate the psychometric properties of a measure of unusual thoughts, further research can be focused on refining and ascertaining validity and reliability of the Unusual Thought Questionnaire. For example, further exploratory factor analysis would be necessary to detect and establish correlations between the questionnaire items and calculation of Cronbach's alpha to ascertain whether the questionnaire as it stands has acceptable internal consistency. Additional investigation will be beneficial in addressing potential shortcomings of the measure and developing it further as a viable tool to assist in detecting and measuring unusual postpartum thought content.

8.5 Conclusions

This research study aimed to explore the occurrence of unusual thoughts in women during the postpartum period. A range of unusual thought content was identified and the main findings indicated that the majority of women in this non-clinical sample endorsed the experience of at least one unusual thought during the postpartum period. Both anxiety and depression symptoms were positively associated with the frequency of such unusual thought occurrence. Additionally, the content of thoughts reported across both phases of the study were found to be comparable with thoughts identified in accounts of postpartum psychotic thought content. Whilst there are a number of noted limitations, the study provides the foundation for further investigation into these phenomena. Furthermore, dissemination of the range of thoughts occurring in normative experience may enable more open dialogue between women and maternal health professionals and thus the provision of support or reassurance as necessary. Promoting understanding of such non-clinical experiences may in this way foster maternal psychological wellbeing and prevent secondary distress arising from concealment or suppression of unusual thoughts.

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APPENDICES

Appendix A: Phase one participant information sheet

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Appendix A: Phase one participant information sheet

**Leeds Institute of
Health Sciences**
FACULTY OF MEDICINE AND HEALTH

UNIVERSITY OF LEEDS

Information for Participants

Thoughts after childbirth

A research project exploring unusual or unexpected thoughts experienced by mothers' in the early period after giving birth.

Introduction

My name is Sherell Calame (Trainee Clinical Psychologist) and I am inviting you to take part in a research project. Before you decide to take part I would like to let you know about the research and what it will involve. Please take time to read the following information carefully and to decide whether or not you wish to take part. If there is anything that is not clear or if you would like more information about the study my contact details can be found at the bottom of this information page.

What is the purpose of the project?

This study is designed to find out about the types of thoughts that women have in the first few weeks/months after giving birth. It is hoped that it will provide a better understanding of unusual and even frightening thoughts, which mothers can experience as a normal part of the afterbirth recovery process.

Previous research suggests that many women have thoughts about their babies or themselves, which they tend not to share with others. We think that many of these thoughts are a normal response to the changes mothers' are experiencing after childbirth and the purpose of this study is to gain a better understanding of these thoughts.

The research is being carried out for an educational project (Doctorate in Clinical Psychology) with the University of Leeds.

Why are you being invited to take part?

We are inviting mothers to share their experiences and examples of the types of thoughts they had after giving birth. If you are a mother (aged 18 or over) who experienced thoughts or ideas about your baby, which were felt were unusual to you in any way, we would like to hear from you so that we can learn more about these experiences.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you can contact me by email for further information and details on how to get involved with our online discussion and share your thoughts and experiences.

What will happen to me if I take part?

I will be hosting an online discussion and if you decide to take part you will be one of a group of women who have agreed to join in the discussion about women's thoughts after birth.

You do **not** have to provide your name in the online discussion and you will be allocated an online username to maintain your confidentiality. You will be asked to provide an email address only so that I can contact you with further information about the study. If you do decide to take part in the study I will provide you with further details of how to register and access the online discussion. Any details you provide will remain confidential. You can contribute as many or few examples of thoughts you have experienced to the online discussion and you will be free to exit the website at any point.

What are the possible benefits of taking part?

People who take part in the forum discussion can claim a small token of appreciation in the form of your choice of a £10 Amazon or Boots voucher. Whilst there are no other immediate benefits for those people participating in the project, the knowledge we gain from the study will be beneficial in helping us to support mothers who find the thoughts they have after childbirth difficult.

What will happen to the results of the research project?

The research is part of a larger study and some examples of thoughts that are discussed in the focus group may be used to guide me in developing a survey to find out if other mothers have similar thoughts.

A report of the study will be submitted as part of a Doctorate in Clinical Psychology at the University of Leeds and the findings of the study will be publicised to other researchers and staff that support mothers post birth. All comments from the research will be presented anonymously in any reports or publications. Those who take part in the study will be asked if they would like to receive a brief summary of the results once they are available.

What types of questions will you ask me?

The research will ask women to describe the types of thoughts, which they experienced in the weeks after giving birth and specifically to tell us about any thoughts that they found unusual. The term unusual can refer to any thought that you found confusing, unexpected, frightening or just difficult to make sense of.

The purpose of collecting information about these thoughts is to allow us to establish whether most women experience similar kinds of thoughts after birth and whether certain types of thoughts are a common experience for mothers.

Who has given permission for the research to be conducted?

This study is being carried out by the Leeds Institute of Health Sciences and has received approval from the University of Leeds Research Ethics Committee.

Further information

If you have any questions regarding this study, please contact Sherell Calame at umsca@leeds.ac.uk **0113 3432732**

Thank you

Appendix B: Phase one participant consent form

**Leeds Institute of
Health Sciences**
FACULTY OF MEDICINE AND HEALTH

UNIVERSITY OF LEEDS

Consent to take part in -'Thoughts after childbirth'

A research project exploring unusual or unexpected thoughts experienced by mothers'
in the early period after giving birth.

Sherell Calame (Trainee clinical psychologist) umsca@leeds.ac.uk

0113 3432732

	Add your initials next to the statement if you agree
I confirm that I have read and understand the information sheet explaining the above research project and I have had the opportunity to ask questions about the project.	
I understand that my participation in the focus group is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline. I understand that If I withdraw from the study any personal information will be destroyed. Responses I have already provided within the focus group may be used anonymously.	
I give permission for members of he research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials and I will not be identifiable in the report or reports that result from the research. I understand that my responses will be kept strictly confidential unless I disclose my involvement in criminal activity or risk of significant harm to another or myself.	
I agree for the information collected to be used in relevant future research in an anonymised form.	
I have someone available after the focus group that I can talk to if necessary	

Appendix C: Phase one focus group topic guide

Focus Group Guide

Welcome to our online focus group discussion. Thank you for taking the time to share your thoughts and experiences with me. I am hosting this chat to help me with my research into the types of thoughts women have after childbirth. Before we get started can we all introduce ourselves…. I'll start…I am 30 year old working mum, I'm married and I have one daughter who is now seven years old…

Thank you all for sharing. I am now going to ask you all some questions about the types of thoughts you had after birth. There are no right or wrong answers and I am interested in hearing about both positive and negative thoughts and experiences. Please feel free to share your point of view even if it differs from what others have said and please be respectful of each other's views and experiences and do not use offensive language.

Please think back to the early weeks and months after you gave birth….

1) Can you describe some of the thoughts or feelings you were experiencing during this time?

(For example some women describe thoughts, which came up frequently or brief thoughts or images, which pop into their minds)

2) Can you describe any particular thoughts you had about yourself?

3) Can you describe any thoughts you had about your baby?

4) Do you recall any thoughts, which brought up strong emotions for you?

5) Was there ever a time you felt *'I shouldn't be thinking this'?* If so, what types of thoughts prompted this?

6) Did you ever have thoughts that you would describe as unusual or even bizarre?

7) Did the unusual thoughts or images, arise briefly or were they frequent?

8) Were any of your thoughts difficult to share with others? If so, what made it difficult to share these thoughts?

9) If any of your thoughts were unusual did you share these with a health professional? If not, why not?

10) Was there any advice/information, which you felt was/or would have been helpful in regards to your thoughts after birth?

11) If anyone would like to share any other thoughts/experiences offline please feel free to contact me after the group via email: umsca@leeds.ac.uk

Prompts:

Could you explain further?

Would you give an example?

Can you talk about that more?

1) Can you give examples of any of those thoughts?

2) How did you feel about the thoughts you were having?

Appendix D: Phase one participant online discussion instructions

Instructions to log on and get started

Thank you for agreeing to take part in the research project. Please find details below of how to log on to the University Site and take part in the discussion. If there is anything you don't understand or you have any trouble please contact Sherell on umsca@leeds.ac.uk or 07920013026

The link for the discussion page is:

`https://teamspace.leeds.ac.uk/sites/SYT/default.aspx`

Your username and password are displayed below:

Username: hssyt01

Password: Hzphcxr8
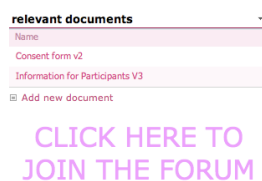
On the far right hand side of the page under '**relevant documents'** you will find the information sheet and consent form. If you have not already read and completed the consent form please

click the link to do so.

On the far right side of the page under you will notice the **'Click here to join the forum'.**

Use your curser to click on the link
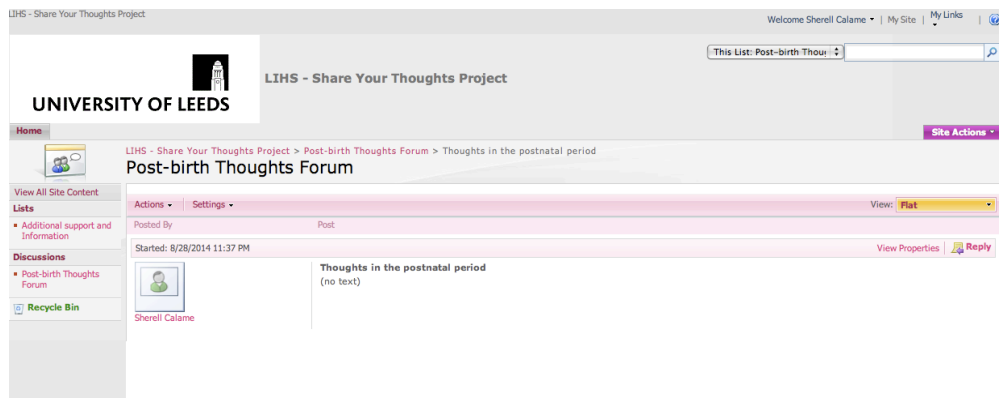
Once the page opens to start posting your messages please click on **'Reply'**, which is on the far right hand side of the page.
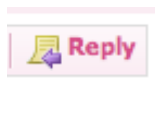
The discussion board is set to refresh every 20 seconds to ensure that you see the up to date posts of others involved in the discussion.

Click **'Home'** in the top left hand corner of the page to exit the discussion and return to the main page at any point.
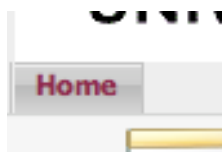
Additional support information

On the far left hand side of the homepage under '**lists'** you will find additional support information. If you feel that you would benefit from talking more about your thoughts and feelings at any stage there are a number of links to services, which may be helpful.

Appendix E: Extract of transcript

hssyt05

Posted: 10/21/2014 1:57 PM   View Properties   Reply

Thank you so much to you all for joining in and sharing your examples.

Sherell Calame

Posted: 10/21/2014 1:57 PM   View Properties   Reply

Yes, very reassuring :)

hssyt04

Posted: 10/21/2014 1:57 PM   View Properties   Reply

02 - thats me. I thought if i had of wanted to leave her why would it matter that we might not be able to find her? and if i was to run away now I HAVE to take her because she needs me so much, but then **** is so funny so i couldnt leave her and **** is so sweet so she'd have to come but then ***** is my little man i couldnt go without him - he saved me when he was born - and then of course i love my husband i wouldnt want to be without my best friend... so really we'd just all be moving house if i left !

[handwritten] Thoughts of running away but feeling baby/family need me   what might happen if + left the baby

hssyt05   ⏷ Show Quoted Messages

Posted: 10/21/2014 1:56 PM   View Properties   Reply

I'm going to have to go very soon as I'm taking my baby for her 2nd imms now, but it's been lovely "chatting" and reassuring we're all so similar in our thoughts!

[handwritten] Reassured by shared experiences

hssyt02

Posted: 10/21/2014 1:56 PM   View Properties   Reply

Yes, I had the odd thought of "running away" only when it was really overwhelming, her crying too much and me not knowing why and not being able to make her feel better

[handwritten] Thought of running away when overwhelmed not knowing how to help   running away - abandon

hssyt04

Posted: 10/21/2014 1:54 PM   View Properties   Reply

I think we all feel like running away from it all sometimes - I have but then I've thought I couldn't without the baby, and then I've thought well if I take the baby I have to take my other girls too so they wouldn't feel left out - and then I'm not really running away from it all am I?!

[handwritten] mixed thoughts/feelings wanting feeling like running away but cant be without baby at same time   running away abandoning the baby

hssyt02

Posted: 10/21/2014 1:53 PM   View Properties   Reply

I know for sure that I would feel exactly the same as you all if I couldn't breast feed with my 2nd baby

hssyt04

Posted: 10/21/2014 1:52 PM   View Properties   Reply

Posted: 10/21/2014 1:52 PM   View Properties   Reply

05 - that is shocking that some healthcare professionals can be like that! I was very worried what they would think, but the midwives in hospital, community midwife and health visitor were all very supportive in my decision. In the hospital the midwives were lovely trying to help me breastfeed at every feed and were lovely, but on day 3 she'd lost 10% of her birthweight and I'd decided if she'd lost 10% then I would go to bottle, and they were supportive of my decision knowing how much we'd tried

imagined judgement re inability / difficulties with breastfeeding

hssyt02

Posted: 10/21/2014 1:50 PM   View Properties   Reply

My husband. he fixed it though. He said that no matter what I might think or feel that he knows 100% that she is safe with me because I'm still me and he knows I could never do anything like that. whenever I feel overwhelmed now just remembering what he said really helps.

✘ Show Quoted Messages

Supported and comforted by husbands words.
neutralises impact
reduces distress

hssyt05

Posted: 10/21/2014 1:49 PM   View Properties   Reply

02 - i know what you mean, i felt like that when my 2 year old was little. not helped by a rather evil out of hours doctor telling me she had come out in this horrible all over angry looking rash because "she is too young to be drinking formula" !! she was 8 weeks and had dropped from the 51st to 2nd percentile through breastfeeding. I cried my eyes out. Makes me furious thinking about that!

✘ Show Quoted Messages

hssyt05

Posted: 10/21/2014 1:48 PM   View Properties   Reply

I only spoke about it to my partner really.

only shared with partner

hssyt04

Posted: 10/21/2014 1:48 PM   View Properties   Reply

I spoke to my husband and to 1 close friend about it. Also a little bit to my GP at my 6 week check-up as we've got a very good rapport through me signed off work this pregnancy and my previous miscarriage, and the usual trips with my other 2 daughters. All have been supportive although I think my husband struggles to understand.

Able to talk to husband & close friend
~~husband struggle~~
husband supportive but struggles to understand

hssyt02

Posted: 10/21/2014 1:47 PM   View Properties   Reply

05 that sounds like a difficult experience. Were you able to talk about the thought with anyone

✘ Show Quoted Messages

Sherell Calame

Posted: 10/21/2014 1:45 PM   View Properties   Reply

Sherell, I can't think of much else at the moment, apart from it being very daunting leaving the house for the first time with the baby, her being exposed to the outside. I had to go to a breast feeding group when she was 4 days old. Also, when I see children suffering on TV it makes me cry more than before I had a baby or when I see babies crying their eyes out in the streets and their mothers not comforting them it breaks my heart and I want to comfort them myself.

Fear of baby being exposed to outside / distress
daunting to take baby out
more emotional and in tune with other childrens

Appendix F

Hospital Anxiety and Depression Scale (HADS)

**Tick the box beside the reply that is closest to how you have been feeling in the past week.
Don't take too long over you replies: your immediate is best.**

D	A		D	A	
		I feel tense or 'wound up':			I feel as if I am slowed down:
	3	Most of the time	3		Nearly all the time
	2	A lot of the time	2		Very often
	1	From time to time, occasionally	1		Sometimes
	0	Not at all	0		Not at all
		I still enjoy the things I used to enjoy:			I get a sort of frightened feeling like 'butterflies' in the stomach:
0		Definitely as much		0	Not at all
1		Not quite so much		1	Occasionally
2		Only a little		2	Quite Often
3		Hardly at all		3	Very Often
		I get a sort of frightened feeling as if something awful is about to happen:			I have lost interest in my appearance:
	3	Very definitely and quite badly	3		Definitely
	2	Yes, but not too badly	2		I don't take as much care as I should
	1	A little, but it doesn't worry me	1		I may not take quite as much care
	0	Not at all	0		I take just as much care as ever
		I can laugh and see the funny side of things:			I feel restless as I have to be on the move:
0		As much as I always could		3	Very much indeed
1		Not quite so much now		2	Quite a lot
2		Definitely not so much now		1	Not very much
3		Not at all		0	Not at all
		Worrying thoughts go through my mind:			I look forward with enjoyment to things:
	3	A great deal of the time	0		As much as I ever did
	2	A lot of the time	1		Rather less than I used to
	1	From time to time, but not too often	2		Definitely less than I used to
	0	Only occasionally	3		Hardly at all
		I feel cheerful:			I get sudden feelings of panic:
3		Not at all		3	Very often indeed
2		Not often		2	Quite often
1		Sometimes		1	Not very often
0		Most of the time		0	Not at all
		I can sit at ease and feel relaxed:			I can enjoy a good book or radio or TV program:
	0	Definitely	0		Often
	1	Usually	1		Sometimes
	2	Not Often	2		Not often
	3	Not at all	3		Very seldom

Please check you have answered all the questions

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Appendix G: Pittsburgh Sleep Quality Index

The Pittsburgh Sleep Quality Index (PSQI)

Instructions: The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month. Please answer all questions.

During the past month,

1. When have you usually gone to bed? _____

2. How long (in minutes) has it taken you to fall asleep each night? _____

3. When have you usually gotten up in the morning? _____

4. How many hours of actual sleep do you get at night? (This may be different than the number of hours you spend in bed) _____

5. During the past month, how often have you had trouble sleeping because you...	Not during the past month (0)	Less than once a week (1)	Once or twice a week (2)	Three or more times a week (3)
a. Cannot get to sleep within 30 minutes				
b. Wake up in the middle of the night or early morning				
c. Have to get up to use the bathroom				
d. Cannot breathe comfortably				
e. Cough or snore loudly				
f. Feel too cold				
g. Feel too hot				
h. Have bad dreams				
i. Have pain				
j. Other reason(s), please describe, including how often you have had trouble sleeping because of this reason(s):				
6. During the past month, how often have you taken medicine (prescribed or "over the counter") to help you sleep?				
7. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?				
8. During the past month, how much of a problem has it been for you to keep up enthusiasm to get things done?				
	Very good (0)	Fairly good (1)	Fairly bad (2)	Very bad (3)
9. During the past month, how would you rate your sleep quality overall?				

The Birth Satisfaction Scale

Please respond to the following statements:

(1) I came through childbirth virtually unscathed.

| Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |

(2) I thought my labour was excessively long.

| Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |

(3) The delivery room staff encouraged me to make decisions about how I wanted my birth to progress.

| Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |

(4) I felt very anxious during my labour and birth.

| Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |

(5) I felt well supported by staff during my labour and birth.

| Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree |

(6) The staff communicated well with me during labour.

Strongly   Agree   Neither Agree   Disagree   Strongly
Agree   or Disagree   Disagree

(7) I found giving birth a distressing experience.

Strongly   Agree   Neither Agree   Disagree   Strongly
Agree   or Disagree   Disagree

(8) I felt out of control during my birth experience.

Strongly   Agree   Neither Agree   Disagree   Strongly
Agree   or Disagree   Disagree

(9) I was not distressed at all during labour.

Strongly   Agree   Neither Agree   Disagree   Strongly
Agree   or Disagree   Disagree

(10) The delivery room was clean and hygienic.

Strongly   Agree   Neither Agree   Disagree   Strongly
Agree   or Disagree   Disagree

Appendix I: End of survey statement

Thank you for completing the survey and sharing your thoughts and experiences. It is hoped that this survey will provide us with more knowledge of mums thoughts and experiences and how they might be linked to the emotional and physical changes women are experiencing post-birth.

For each individual the questions and topics covered in the survey may bring up different feelings. Some mums who have taken part in this research found that knowing other mums also experience unusual post-birth thoughts and the opportunity to share these thoughts anonymously has been reassuring.

The nature of unusual thoughts can be that they are unwelcome or unpleasant and you may find that you have feelings about these thoughts that are upsetting or difficult to dismiss.

If you would like to talk more about thoughts you have experienced or any other feelings, you may find the following information, agencies and websites helpful:

- http://familylives.org.uk

- Family lives Helpline: 0808 806 2222

- Family lives Email: parentsupport@familiylives.org.uk

- http://www.netmums.com/parenting-support/drop-in-clinic

- http://www.nhs.uk/conditions/pregnancy-and-baby/Pages/services-support-for-parents.aspx#close

- http://www.nhs.uk/conditions/postnataldepression/pages/introduction.aspx

If you are concerned about thoughts and feelings you have been experiencing since giving birth or have any concerns regarding your mental health please do not hesitate to contact your GP or Health Visitor who will be able to provide advise and support.

For more information about this research project or if you would like to receive a copy of the final report please contact:

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