Motherhood Experience and its Relationship to Postpartum Adjustment

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Summary

The early weeks of caring for a new baby are often a rewarding and enjoyable time. This is not, however, the case for all women. Some experience difficulty in making the adjustment to their new role. While stressful life events are one of the known risk factors for poorer postpartum adjustment, motherhood experience is generally not classified as a stressful life event. This is despite the fact that postpartum depression and anxiety are related to a number of individual infant-related stressors, including breastfeeding difficulties, infant colic and infant temperament.

This work examined the relationship between the ease or difficulty in managing the early weeks with a new baby and how well mothers adjust psychologically. In two quantitative studies, new mothers were assessed using a purpose-built self-report measure of motherhood experience, with postpartum adjustment assessed on indices of depression, anxiety and well-being. These studies were followed by a small qualitative study.

Study 1 investigated motherhood experience, and how it compared with antenatal expectations, as stressors for first-time mothers (N = 136). The effect of experience and the expectations-experience discrepancy on adjustment was tested, with strong relationships evident. To determine if parity was a factor in the relationship between experience and adjustment, Study 2 assessed first-time *and* multiparous mothers (N = 66) postnatally. Similar relationships were found between experience and adjustment to those in Study 1, regardless of parity. Study 2 also investigated whether multiparity might operate to benefit mothers through skills developed in relation to baby care. While this hypothesis was not supported, previous experience of caring for a baby was clearly beneficial, because multiparous mothers found motherhood experience with their current baby easier to manage than first-time mothers. Via semi-

structured interviews, Study 3 sought to gain greater understanding of the specific experience of primiparous and multiparous mothers (N = 17) in the early weeks postpartum, how this impacted them psychologically, and what did assist them or might help others. Challenges described by primiparous mothers were more specific to the infant compared with multiparous mothers, who noted the challenge of managing the demands of multiple children. Learning that both the enjoyable and the challenging aspects of motherhood were not permanent and passed with time was frequently reported. Mothers groups, both online and in person, were commonly noted as valuable.

Overall, the results of these studies suggest that mothers who struggle to manage the demands and changes that accompany the early weeks with a new baby may be at risk of emotional difficulties. The causal relationship between experience and adjustment could not, however, be definitively resolved in this research. Cause and effect could be addressed in further research testing the effect of an intervention targeting experience on adjustment. Should experience be confirmed as a causal factor in adjustment, it may provide opportunity for modification, unlike fixed or historical risk factors for postpartum difficulties. Irrespective of causality, in clinical settings, the assessment of motherhood experience may be a useful strategy in addressing postnatal depression and anxiety, including at sub-clinical levels.

Declaration

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Charlotte Tottman, B.A. (Hons)

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Chapter 1

Overview

Psychological difficulties are relatively common in women during the early weeks and months following childbirth. While there are many known risk factors for the development of depression and anxiety in the postpartum, little attention has been given to the idea that the ease or difficulty of managing this experience may itself be a factor in adjustment. There are indications that this might be the case, including the fact that postnatal adjustment is related to childcare stress, and several infant-related stressors. Broadly, this research aimed to test the relationship between motherhood experience and postpartum adjustment.

Chapter 1 provides a review of the prevalence, characteristics and possible causes of postpartum depression and anxiety and presents the argument for experience as a predictor of adjustment. Chapter 2 provides a review of the literature relevant to the experience of caring for a new baby. The case is expanded, that the actual experience of motherhood, and in comparison to antenatal expectations, is a risk factor for poorer adjustment. Chapter 3 presents the findings from Study 1, a prospective study of first-time mothers (N = 136), which investigated whether negative motherhood experience was a risk factor for poor postpartum adjustment. Study 1 also compared women's antenatal expectations of motherhood with their postnatal experience and examined whether a discrepancy between them related to postpartum adjustment. A purpose-built self-report scale assessed motherhood expectations and experience, specifically the ease or difficulty managing with a new baby. Postpartum adjustment was operationalised as scores on measures of depression, anxiety and well-being. Chapter 4 presents the findings of Study 2, which compared first-time and multiparous

mothers (N = 66) on measures of experience and adjustment, to determine the role of parity in the relationship. This study also investigated whether benefits of previous experience in the form of parity were moderated by skill-related as distinct from less controllable aspects of motherhood experience. Chapter 5 presents the findings of a small qualitative study of both primiparous and multiparous women, in which 17 women were individually interviewed about their experience with their most recent baby. Chapter 6 discusses and integrates the key findings from this research. Methodological strengths and limitations are considered, and clinical implications and suggestions for future research are discussed, before final conclusions.

Introduction

Becoming a mother is a significant and much anticipated event in a woman's life. New motherhood is a time of great change (Darvill, Skirton, & Farrand, 2010; Harwood, McLean, & Durkin, 2007; Leahy-Warren, McCarthy, & Corcoran, 2011, 2012; Miller, Pallant, & Negri, 2006; Parfitt & Ayers, 2014; Solmeyer & Feinberg, 2011). For all mothers to some degree, and first-time mothers in particular, there are new skills to learn, a new role to take on, and changes in almost all areas of a woman's life – physically, socially, occupationally and financially (Belsky & Pensky, 1988; Belsky, Rovine, & Fish, 1989; Campbell, Cohn, Flanagan, Popper, & Meyers, 1992; Correia & Linhares, 2007; Figueiredo & Conde, 2011; Reichle & Montada, 1994; Ruble et al., 1990; Wenzel, Haugen, Jackson, & Brendle, 2005; Winson, 2009). Caring for a new baby is often approached as a joyful, natural and automatic process. Some women do, however, experience difficulties in making the adjustment to their new role (Britton, 2008; Campbell et al., 1992; Leahy-Warren & McCarthy, 2007; Oppo et al., 2009; Stuart, Couser, Schilder, O'Hara, & Gorman, 1998). Difficulties can manifest as symptoms of

depression and anxiety at clinical or subclinical levels. Depression and anxiety are widely used to gauge postpartum adjustment difficulties, which is the focus of this research.

A number of reliable risk factors have been identified in relation to postpartum adjustment problems, including a history of psychological difficulties, poor social support and stressful life events (Beck, 2001; O'Hara & Swain, 1996; Robertson, Celasun, & Stewart, 2003; Robertson, Grace, Wallington, & Stewart, 2004). Poor postpartum adjustment can have negative consequences for mother and infant. In addition to the actual experience of psychological difficulties, it can affect mother-infant bonding, partner relationships, and infant cognitive and social development (Bobo & Yawn, 2014; Gjerdingen & Yawn, 2007; O'Hara & McCabe, 2013; Verbeek et al., 2012).

While relatively little attention has been given to the experience of being a mother itself as a factor in postpartum adjustment, there are indications in previous research that the quality of this potentially stressful period may play a role (Leigh & Milgrom, 2008; Terry, 1991a, 1991b; Terry, Mayocchi, & Hynes, 1996). Furthermore, several infant-related stressors are related to postpartum adjustment, including breastfeeding difficulties (Abou-Dakn, Schafer-Graf, Wockel, 2009; Kanotra et al., 2007; Mortazavi, Mousavi, Chaman, & Khosravi, 2014; Shakespeare, Blake, & Garcia, 2004; Smith, 1989; Watkins, Meltzer-Brody, Zolnoun, & Steube, 2011; Zubaran & Foresti, 2013), infant colic (Akman et al., 2006; Howell, Mora, & Leventhal, 2006; Vik et al., 2009), and inconsolable infant crying (Kurth et al., 2014; Oberklaid, 2000; Papousek & von Hofacker, 1998; Radesky et al., 2013; Vik et al., 2009). The easier and more enjoyable the motherhood experience, the better adjustment is likely to be. Similarly, if this period is difficult for new mothers, they may struggle psychologically. A key focus of

this thesis is whether the ease or difficulty in managing motherhood experience is a factor in postpartum adjustment.

As will be shown, there are three main reasons for testing this proposition. First, depression and anxiety can have different features in postpartum women compared with in the general population, suggesting that something distinct may be occurring for women at that time, acting as a stressor. Second, although stressful life events are a risk factor for postpartum depression, motherhood experience itself is usually not counted as a stressful event. Third, as a number of individual infant-related stressors have been identified as risk factors for postpartum adjustment difficulties, it follows that a collection of possible stressful aspects of being a mother would similarly impact adjustment. This argument will be expanded in this chapter and the next.

Postpartum Adjustment

The topic of postpartum adjustment is characterised by variations in the definition of the period under review. Definitions of the postpartum period vary in diagnostic systems, research and clinical settings. The World Health Organization (WHO, 1998) defines "postpartum" as the period immediately following childbirth and extending for about six weeks. In relation to postnatal depression, the two commonly used diagnostic systems differ slightly in specifying the timing of onset. The Diagnostic and Statistical Manual of Mental Disorders, 5th Rev. ed. (DSM-V; American Psychiatric Association [APA], 2013) defines postpartum as within 1 month, whereas the International Statistical Classification of Diseases and Related Health Problems, 10th Rev. ed. (ICD-10; WHO, 2008) defines postpartum as within 6 weeks. Regardless of these specifiers, diagnosis is not restricted to this period either clinically or in research (Matthey, 2007). Researchers have variously defined the postpartum period as 4 (Cox,

Connor, & Kendell, 1982; McCoy, Beal, Shipman, Payton, & Watson, 2006) or 8 weeks (Dennis & Ross, 2006; Johnstone, Boyce, Hickey, Morris-Yates, & Harris, 2001), 4 months (Nielsen, Videbech, Hedegaard, Salvig, & Secher, 2000) 6 months (Miller et al., 2006; Stowe, Hostetter, & Newport, 2005), and 12 months (Robertson et al., 2003, 2004). Further, both depression and anxiety are known to persist longer into the postpartum period than is often measured (Cooper & Murray, 1998; Evans, Heron, Francomb, Oke, & Golding, 2001; Goodman, 2004; Huang & Mathers, 2001; Kumar & Robson, 1984). In clinical practice, the postpartum period is increasingly defined as up to one year post childbirth (O'Hara, 2009). Variously defined postpartum periods probably capture mothers at different stages of motherhood experience, and at different stages of psychological adjustment. In this thesis, the postpartum period will be defined as four months.

Broadly, "adjustment" can be defined as the effectiveness with which an individual can function in changed circumstances (Lazarus, 1976). Postpartum adjustment is commonly assessed using measures of depression and anxiety (Cooper & Murray, 1998; Matthey, Barnett, Howie, & Kavanagh, 2003; Reck et al., 2008), such as the Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden, & Sagovsky, 1987). Postnatal depression has been defined in research as a non-psychotic depressive episode during the postpartum period (Cox, Murray, & Chapman, 1993; O'Hara, 1994; Watson, Elliott, Rugg, & Brough, 1984). It is distinct from the postpartum blues experienced by most women in the first two weeks after childbirth and from the relatively infrequent and more debilitating puerperal psychosis (Bobo & Yawn, 2014; Epperson, 1999; Gaynes et al., 1998-2005; O'Hara, 1987; Whiffen, 1991). Postnatal *anxiety* may present in one of several forms, including generalised anxiety disorder (GAD), panic disorder, obsessive-compulsive disorder, or posttraumatic stress disorder

(Ross & McLean, 2006). In research contexts, however, postnatal anxiety is often measured by assessing general anxiety symptoms, using scales such as the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970), with no specific tools developed to assess postnatal anxiety (Ross, Gilbert Evans, Sellers, & Romach, 2003).

Some studies have conceived and measured adjustment differently, with a focus on social and functional adjustment. For example, the 61-item Postpartum Adjustment Questionnaire (PPAQ; O'Hara, Hoffman, Philipps, & Wright, 1992) has been used to measure the social adjustment of women in the first 12 months after childbirth. It taps mothers' perceptions of their performance across 7 domains; a) work in home, b) work on job, c) family, d) friends, e) new baby, f) other children, and g) spouse. Additionally, the 45-item Inventory of Functional Status After Childbirth (IFSAC; Fawcett, Tulman, & Myers, 1988) assesses maternal functioning based on a full return to pre-childbirth functioning across 6 activities subscales; household, personal care, child care, social and community, occupational, and educational.

In the current research, consistent with the approach common to much of the risk factor literature, postpartum adjustment is defined as how a woman adjusts psychologically to changes and demands after having a baby, and is assessed on indices of depression, anxiety and well-being. Following the trend in the literature, the words postnatal and postpartum are used synonymously.

Postnatal Compared to More General Depression and Anxiety

Research on postpartum adjustment might seem to presuppose that anxiety and depression during this time are distinct from anxiety and depression more generally. Several studies have addressed the issue of whether they do differ (Cooper et al., 2007; O'Hara, Zekoski, Philipps, & Wright, 1990; Stowe, Casarelle, Landry, & Nemeroff, 1995;

Toohey, 2012; Whiffen, 1991, 1992; Whiffen & Gotlib, 1993). Although the clinical symptoms of postpartum depression and postpartum anxiety are usually the same as depression and anxiety more generally, there are some notable differences in relation to diagnosis, course and severity. These differences, along with characteristics of known risk factors for postpartum adjustment, imply that psychological difficulties during the postpartum may relate to events occurring at that time, including new mothers' day-to-day experience. While this would be consistent with research showing a link between stressful current events and psychological difficulties (Monroe & Simmons, 1991; Zuckerman, 1999), it has not received much attention in the literature to date; a situation this research sought to address.

Incidence and prevalence. While the reported prevalence of postnatal depression varies depending on methodology, assessment instrument and clinical cut-off scores, socio-demographic differences, parity, length of study and cultural diversity (Halbreich & Karkun, 2006; Leahy-Warren & McCarthy, 2007; Vesga-Lo´pez et al., 2008), the largest systematic review of this subject (O'Hara & Swain, 1996) found the rate to be 13% of mothers. More recently in Australia, the National Perinatal Depression Initiative (NPDI) reported approximately 16% of mothers are diagnosed with postpartum depression between 6 and 8 weeks postpartum (Buist et al., 2008; Highet & Purtell, 2012), and a greater number of women experience subclinical depressive symptoms (Parent-Infant Research Institute and Infant Clinic [PIRI], 2009).

Studies that have compared the prevalence of depression during the postpartum with non-postpartum (and non-pregnant) women have produced mixed results. Some report a difference (Eberhard-Gran, Tambs, Opjordsmoen, Skrondal, & Eskild, 2003; Vesga-Lo´pez et al., 2008) and others do not (Cox et al., 1993; Gavin et al., 2005; O'Hara et al., 1990; van Bussel, Spitz, & Demyttenaere, 2006). Eberhard-Gran et al. found

unadjusted rates of depression and anxiety were lower in postpartum than non-postpartum groups, but when other risk factors were controlled, the risk of depression was greater for postpartum women, adjusted OR 1.8, 95% CI:1.1-2.9 (*N*= 2730). The National Epidemiologic Survey on Alcohol and Related Conditions (NESARC; Vesga-Lo´pez et al., 2008) used DSM-IV (APA, 1994) criteria to determine prevalence of psychiatric disorders. Similar rates of psychiatric disorders in postpartum (*n* = 994) and non-postpartum women (*n* = 13,025) were found, with the exception of major depressive disorder, which was higher for postpartum women after adjusting for other risk factors, AOR 1.52, 95% CI:1.07-2.15. On the other hand, Gavin et al. (2005) reviewed three studies comparing prevalence of depression in groups of childbearing and nonchildbearing women. They compared rates at 2 antenatal and 11 postnatal time periods and found no significant differences. A study of 324 childbearing women was compared to a matched control group of women who did not deliver in the following 3 years (van Bussel et al., 2006). Using the 12-item General Health Questionnaire (GHQ-12; Goldberg & Williams, 1988), no difference in the prevalence of common mental health disorders was found between groups.

Findings are also mixed regarding differences in antenatal and postnatal rates of depression. Van Bussel et al. (2006) found no difference in the prevalence of common mental health disorders in childbearing women before, during and after pregnancy (*N* = 324). In contrast, in their prospective study, Leigh and Milgrom (2008) found the rate of moderate to severe depression at 28 to 32 weeks gestation was 16.9% compared to 11.2% at 10 to 12 weeks postpartum (*n* = 161), using the Beck Depression Inventory (BDI; Beck & Steer, 1987). Giardinelli et al. (2012) found a similar pattern, with an antenatal depression rate of 21.9% and a postnatal depression rate of 13.2%, indicated by EPDS scores of 10 or more (*N* = 590). Likewise, using EPDS scores above 12, the rate

of antenatal depression at 32 weeks was 13.5%, and postnatal depression at 8 weeks was 9.1% (*N* = 9028, Evans et al., 2001).

Less information is available on the prevalence of postnatal anxiety, consistent with the smaller amount of research directed at anxiety than depression in the postpartum (Bener, Gerber, & Sheikh, 2012; Britton, 2008; Matthey et al., 2003; Miller et al., 2006; Moss, Skouteris, Wertheim, Paxton, & Milgrom, 2009; Reck et al., 2008; Ross & McLean, 2006; Wenzel, 2011; Wenzel, Gorman, O'Hara, & Stuart, 2001; Wenzel, Haugen, Jackson, & Robinson, 2003; Wenzel et al., 2005; Yelland, Sutherland, & Brown, 2010). Several individual studies have found rates of postnatal anxiety at 10% and above (Matthey et al., 2003; Reck et al., 2008; Stuart et al., 1998), albeit using different criteria. Matthey et al. used DSM-IV (APA, 1994) criteria for panic, phobia and generalised anxiety disorder without duration, Reck et al. used DSM-IV criteria for anxiety disorders, and Stuart et al. used anxiety symptoms on the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988) and the STAI (Spielberger et al., 1970). In comparison, lifetime prevalence rates of GAD range from 4.3% (Wittchen & Jacobi, 2005) to 11.9% (Kessler et al., 2008). Further, in their systematic review of anxiety disorders during pregnancy and the postpartum, Ross and McLean (2006) found rates of GAD or adjustment disorder with anxiety ranged from 4% to 8% in the postpartum compared to 3% in a community sample. Thus, as with depression, whether there is a difference in the rate of anxiety during the postpartum compared to other times is not certain.

Just as depression and anxiety are often comorbid in wider mental health populations (Maser & Cloninger, 1990; Matthey et al., 2003; Sanderson, Di Nardo, Rapee, & Barlow, 1990; Sartorius, Ustun, Lecrubier, & Wittchen, 1996), so they are in the postpartum (Austin et al., 2010; Britton, 2008; Grant, McMahon, & Austin, 2008;

Matthey et al., 2003; Miller et al., 2006; Reck et al., 2008; Ross & McLean, 2006; Stuart et al., 1998; Wenzel et al., 2001, 2003, 2005; Yelland et al., 2010). At clinical levels, in 25% to 50% of cases where anxiety or depression is present, the other is too, depending on the specific anxiety disorder, and from 10% to 50% at sub clinical levels (Wenzel et al., 2005). Large population studies have found comorbid major depression with generalised anxiety disorder at rates of 39% (Judd et al., 1998) and 54% (Massion, Warshaw, & Keller, 1993). Comorbidity can indicate greater severity, reflected in higher levels of treatment resistance, delayed therapeutic benefits, lower recovery rates, and poorer medication compliance (Andrews, Sanderson, & Beard, 1998; Brown, Schulberg, Madonia, Shear, & Houck, 1996; Emmanuel, Simmonds, & Tyrer, 1998; Lecrubier, 1998; Maier, Gansicke, & Weiffenbach, 1997; Masi et al., 2004; Rivas-Vasquez, Saffa-Biller, Ruiz, Blais, & Rivas-Vasquez, 2004). Importantly, prevalence statistics based on the use of the most common measure of postnatal depression, the EPDS (Cox et al., 1987), may reflect the prevalence of postnatal depression or postnatal anxiety, either individually or in combination (Matthey, Fisher, & Rowe, 2013). Thus, if the EPDS is used in isolation, this has obvious implications for prevalence and incidence statistics, potentially overestimating postnatal depression rates, and underestimating postnatal anxiety rates.

Timing of onset, course and severity. The timing of onset of postnatal depression and anxiety during the early weeks and months after childbirth could imply a relationship to concurrent events. The widely accepted theory of the development of psychological distress, the diathesis-stress model (Beck, 1967; Brown, Bifulco, & Harris, 1987; Ingram & Luxton, 2000; Lewinsohn, Hoberman, Teri, & Hautzinger, 1985), holds that psychological disorders relate to environmental stressors, in conjunction with a pre existing vulnerability. Thus, the timing of onset suggests that factors operating at the same time may be influencing mothers' emotional functioning.

The use of criteria specifying a recent or concurrent stressor in the diagnosis of postnatal anxiety is similarly consistent with this notion. Although the symptoms of postnatal anxiety may resemble generalised anxiety disorder, a GAD diagnosis requires symptoms to be present for at least 6 months, precluding many mothers of young babies (Matthey et al., 2003; Ross & McLean, 2006). The diagnostic criteria for "Adjustment disorder with anxiety" relate to a stressful life event: "Criterion A: the development of clinically significant emotional or behavioral symptoms in response to an identifiable psychosocial stressor or stressors occurring within 3 months of the onset of the stressor" (DSM-V; APA, 2013).

Moreover, if motherhood experience acts as a stressor, then de novo cases of depression and anxiety might be expected in the postpartum period. That is, some women should experience their first episode after childbirth. Small numbers of de novo cases of depression (Cooper & Murray; 1995; Gotlib, Whiffen, Mount, Milne, & Cordy, 1989; Phillips, Sharpe, Matthey, & Charles, 2010) and anxiety (Matthey et al., 2003) have been identified in the postnatal period. In a population of 674 women, Cooper and Murray reported 40 (5.9%) were diagnosed with de novo major depression based on a minimum score of 13 on the EPDS (Cox et al., 1987) at 6 weeks postpartum followed by a psychiatric or psychological interview at 2 to 3 months. A greater percentage (12.1%) was reported by Phillips et al. in their study of 157 women, whereby 19 mothers who had never experienced depression met the criteria for major or minor depression using the Structured Clinical Interview for DSM-IV diagnosis (SCID-I research version; First, Gibbon, Spitzer, & Williams, 2002). The assessments were, however, conducted on admission to a mother-infant residential unit when the baby was less than 2 weeks of age and this may have inflated the number of women meeting diagnostic criteria.

In relation to de novo anxiety in the postpartum, as mentioned, a diagnosis of GAD is not possible given the 6 month duration requirement (Matthey et al., 2003; Reck et al., 2008). Thus, using GAD criteria and duration of at least 2 weeks, Reck et al. found de novo onset of anxiety postnatally in 19 of 1024 women. Of course, de novo cases of psychological disorders during the postpartum may be coincidental and relate to other factors separate from motherhood experience. Likewise, a recurrence or continuation of previous psychological difficulties does not exclude an effect or discount the importance of the day-to-day experience of motherhood.

In addition, patterns of onset and trajectories during the perinatal period fit with the impact of an unfolding stressful experience. For example, postpartum anxiety demonstrated an upward trajectory on the state subscale of the STAI (STAI-S; Spielberger et al., 1970) from childbirth to one month postpartum (Britton, 2008, *N* = 296) and on the Crown–Crisp experiential index (CCEI; Crisp, Jones, & Slater, 1978) from 8 weeks to 8 months (Heron, O'Connor, Evans, Golding, & Glover, 2004, *N* = 8323). In further research, anxiety measured at 2, 6 and 12 months postpartum (*N* = 159) was highest at 12 months (Moss et al., 2009). However, the same study found significantly lower depression scores at 6 and 12 months postpartum than during the third trimester and early postpartum. This difference could be explained by other factors relating to higher anxiety later in the postpartum.

Postpartum depression is shorter and milder than depression more generally, which fits with the idea that symptoms remit as mothers become familiar with and adjust to changed circumstances (Leahy-Warren et al., 2011). Large studies found that more than half of postpartum depressive episodes met the criteria for Minor rather than Major Depression and remitted after a shorter period than depression more generally (Gotlib et al., 1989; Hobfall, Ritter, Lavin, Hulsizer, & Cameron, 1995; Whiffen, 1991).

Most experiences of postpartum depression resolve within 3 to 6 months (Cooper & Murray, 1995; Goodman, 2004; Howard, 2005), although a significant subgroup does go on to become chronic (Vliegen, Casalin, & Luyten, 2014).

In summary, despite mixed results from postpartum and non-postpartum prevalence comparisons, features of postnatal depression and anxiety including timing of onset, diagnostic criteria and course are consistent with a stressor operating during the postpartum period, which could be motherhood experience.

Risk Factors

Some well-established risk factors could point to motherhood experience itself as a stressor. Although the risk factors for postnatal depression are better established than for postnatal anxiety, reflecting the relatively greater volume of research in this area, unsurprisingly, there is some overlap.

History of psychopathology. One of the most robust predictors of postpartum adjustment problems is previous experience of depression and anxiety, whether antenatally or prior to pregnancy (Britton, 2008; Grant et al., 2008; Matthey et al., 2003; Milgrom et al., 2008; Moss et al., 2009; Wenzel et al., 2005). This is well-illustrated by the results of a comprehensive, large-scale prospective study by Milgrom et al. (2008; *N* = 40,333). Measures were taken antenatally (*M* gestation = 25.1 weeks, *SD* = 9.0) and again at 6 weeks postpartum. The strongest predictors of postnatal depression were antenatal depression, an earlier history of depression, and inadequate partner support assessed antenatally. Antenatal anxiety, major life events, and practical/emotional support were also identified as risk factors.

The relationship of previous history of psychological difficulties to each of postnatal depression and anxiety is highlighted in additional studies. In a postnatal

prospective study (*N* = 296) that assessed new mothers pre hospital discharge and at one month postpartum, predictors of anxiety at one month included high trait anxiety, low education, a history of depressed mood and a perception of high potential stress around childbirth and new motherhood (Britton, 2008). While together, these four variables explained 50% of the variance in postpartum state anxiety, trait anxiety alone accounted for 41%. Further, in a study of 408 women before pregnancy, during pregnancy, and 6 weeks postpartum, 66% of women with a history of an anxiety disorder and 29% with a history of a depressive disorder went on to develop either postnatal anxiety or depression (Matthey et al., 2003). Grant et al. (2008) assessed 100 Australian women during late pregnancy and at 7 months postpartum. They found that antenatal anxiety disorder was associated with a nearly 5-fold increase in postnatal anxiety and postnatal depression, after controlling for demographics and antenatal depressive disorder. Furthermore, in the same study, self–reported antenatal trait anxiety was associated with a more than 6-fold increase in both postnatal anxiety and postnatal depression. Similarly, Wenzel et al. (2005) found that a personal history of psychological difficulties, including substance abuse, predicted higher anxiety (β = .20) and depression (β = .19) postnatally, using the BAI (Beck et al., 1988) and the BDI (Beck & Steer, 1987). Lastly, Moss et al. (2009) found anxiety in late pregnancy predicted symptoms of anxiety (*r* = .66) and depression (*r* = .30) at around 7 weeks after childbirth, and accounted for most of the variance, with only a small reduction in the strength of the relationship when pre-pregnancy depression and social support were controlled. In addition, depression in late pregnancy predicted depression at 7 weeks postpartum (*r* = .51), but not anxiety. Thus, of depression and anxiety, a previous history of anxiety relates to broader vulnerability to later psychological difficulties.

The fact that a history of anxiety or depression predicts postpartum symptoms points to pre-existing, individual vulnerability. This, in combination with a stressor, fits with the diathesis-stress model (Beck, 1967; Brown et al., 1987; Ingram & Luxton, 2000; Lewinsohn et al., 1985) in the development of psychological distress, and allows for the possibility of motherhood experience as one such stressor. Vulnerability to later distress as a function of a *familial* history of psychopathology is likewise suggested by the relationship of this variable to postpartum adjustment (Johnstone et al., 2001; Meltzer-Brody, Boschloo, Jones, Sullivan, & Penninx, 2013; Wenzel et al., 2005). A family history of psychological difficulties, including substance abuse, predicted higher scores on the BAI ($\beta = .22$; Wenzel et al., 2005) and likewise, women with mothers with a history of depression or postnatal depression were more likely to develop postnatal depression (Johnstone et al., 2001). However, while a personal history leaves room for a recurrence or continuation of depression or anxiety into the postpartum in relation to previous events, onset of distress in the postpartum and vulnerability in the form of familial history suggests the stressor could be events occurring during the postpartum period.

In addition, the interpretation of personal history of psychopathology as evidence of postnatal depression or anxiety as a continuation or re-occurrence may not take account of the factor of impending childbirth. That is, rather than antenatal and postnatal psychological difficulties being directly connected, they may be separate events, each related to the woman's circumstances at that time. Anxiety during pregnancy can reflect understandable concerns about labour, delivery and the health of the baby (Alipour, Lamyian, Hajizadeh, & Vafaei, 2011; Johnson & Slade, 2003; Spice, Jones, Hadjistavropoulos, Kowalyk, & Stewart, 2009; Toohill, Fenwick, Gamble, & Creedy, 2014) but postnatal depression and anxiety may relate to day-to-day

motherhood experience. Stressors related to caring for a new baby include sleep deprivation (Crouch & Manderson, 1993; Dorheim, Bondevik, Ebergard-Gran, & Bjorvatn, 2009; Gay, Lee, & Lee, 2004; Lee & DeJoseph, 1992; Mercer, 1986; Parfitt & Ayers, 2014; Smith, 1989), a crying baby (Kurth et al., 2014; Oberklaid, 2000; Papousek & von Hofacker, 1998; Radesky et al., 2013; Vik et al., 2009), demands on time (Mercer, 1986), and changes in relationships (Belsky & Pensky, 1988; Belsky et al., 1989; Campbell et al., 1992; Correia & Linhares, 2007; Figueiredo & Conde, 2011; Reichle & Montada, 1994; Ruble et al., 1990; Wenzel et al., 2005; Winson, 2009).

The notion of different stressors antenatally and postnatally is supported by differences in adjustment at pre versus post birth. Several prospective studies found lower levels of depression and anxiety postnatally than antenatally (e.g., Evans et al., 2001; Green & Murray, 1994; Heron et al., 2004; Ross et al., 2003). Heron et al.'s large study (N = 8323) found a significant decrease in depression symptoms on the EPDS (Cox et al., 1987) from 32 weeks gestation (M = 6.62, SE = 0.05) to 8 weeks postpartum (M = 5.78, SE = 0.05), and similarly for anxiety, from (M = 4.91, SE = 0.04) to (M = 3.27, SE = 0.04).

Social support. Social support is also a significant factor in adjustment. It has consistently been negatively related to postpartum depression (Chaaya et al., 2002; Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993; Cutrona, 1982, 1984; Cutrona & Troutman, 1986; Demyttenaere, Lenaerts, Nijs, & Van Assche, 1995; Dennis & Ross, 2006; Gjerdingen & Chaloner, 1994; Howell et al., 2006; Leadbeater & Linares, 1992; Leahy-Warren et al., 2011; Nielsen et al., 2000; O'Hara, 1986; O'Hara, Rehm, & Campbell, 1983; Oppo et al., 2009), with moderate effect sizes. Social support also predicts postpartum anxiety (Aktan, 2012; Navarrete, Lara-Cantú, Navarro, Gómez, & Morales, 2012). The finding that mothers' emotional functioning benefits from support implies

the presence of a stressor mitigated by assistance from others, and this could be the actual experience of managing with a new baby.

This assumes, however, that social support occurs *during* the postpartum period. Methodological differences are therefore important in clarifying whether the studied predictor is concurrent social support in the postpartum (Aktan, 2012; Chaaya et al., 2002; Dennis & Ross, 2006; Gjerdingen & Chaloner, 1994; Howell et al., 2006; Leahy-Warren et al., 2011; O'Hara et al., 1983), social support during pregnancy (Collins et al., 1993; Cutrona, 1984; Forman, Videbech, Hedegaard, Salvig, & Secher, 2000; Navarrette et al., 2012), or *anticipated* postpartum social support measured antenatally (Miller, Hogue, Knight, Stowe, & Newport, 2012). There are indications that postnatal social support is a stronger predictor of postnatal adjustment than antenatal support. For example, in their prospective study of 534 women in their third trimester and two weeks postpartum, Xie, He, Koszycki, Walker, and Wen (2009) found postnatal social support was more strongly related to postnatal depression, adjusted OR 9.64, 95% CI:4.09-22.69, than antenatal social support, adjusted OR 3.38, 95% CI:1.64-6.98. Similar results were found in relation to family support pre and post childbirth (Xie, Yang, Liao, Walker, & Wen, 2010). Notwithstanding the likely stronger relationship between concurrent measures than those taken at different times, these findings support the idea of different stressors impacting women antenatally and postnatally.

Other distinctions in social support are relevant to the proposition of experience as a stressor. Leahy-Warren et al. (2011) conceptualised social support as structural (members of mother's social network), or functional (informational, instrumental, emotional and appraisal activities). Compared to those who had high levels of functional support, mothers who received low and medium levels had 12 and 6 times the risk of developing postnatal depression at 6 weeks. Additionally, the risk of postnatal

depression at 12 weeks was 5 times greater for mothers with low than high functional support. The benefit of functional support suggests mothers may experience stress in relation to managing the practical aspects of caring for a new baby, thus supporting the possibility of motherhood experience as a stressor.

Stressful events. It is well-established that stressful life events involving loss and major life changes are related to psychological well-being generally (Cooke & Hole, 1983; Lazarus & Folkman, 1984; Lovibond & Lovibond, 1995). It is therefore not surprising that stressful life events are a moderate to strong predictor of postpartum adjustment (Beck, 2001; O'Hara & Swain, 1996; Robertson et al., 2003, 2004). The onset of major depression and generalised anxiety disorder in relation to stressful events has been shown to usually occur within a month of the stressful event (Kendler, Karkowski, & Prescott, 1998, 1999). This is consistent with motherhood experience as a factor in postpartum adjustment, unless it is a continuation.

The catch-all variable "stressful life events" in relation to postpartum adjustment has encompassed more specific variables, including perinatal and obstetric stress (Affonso et al., 1991; O'Hara, Neunaber, & Zekoski, 1984; O'Hara, Schlechte, Lewis, & Varner, 1991), childcare stress (Beck, 1996, 2001; Cutrona, 1984; O'Hara et al., 1984, 1991; Robertson et al., 2003, 2004; Terry, 1991b, 1994), along with stressful life events (Johnstone et al., 2001; O'Hara et al., 1982, 1984, 1991; Paykel, Emms, Fletcher, & Rassaby, 1980; Shimizu & Kaplan, 1987; Whiffen, 1988). When combined as a "Life Stress" group, in a prospective study of 361 mothers, perinatal and obstetric stress, childcare stress and stressful life events explained 8% of variance in depression symptoms at 9 weeks postpartum (O'Hara et al., 1984, 1991), after controlling for socio demographics. Strong relationships have also been found between individual life stress variables and postnatal depression (e.g., Johnstone et al., 2001). In addition, the number

of recent child-related stresses was fairly strongly related to depression scores among 71 first-time mothers at both 2 weeks (r = .54) and 8 weeks (r = .46) postpartum (Cutrona, 1984). Risk factor meta-analyses (Beck, 1996, 2001; Robertson et al., 2003, 2004) likewise established a moderate to strong relationship between childcare stress and postpartum depression.

Limited attention has been given to postnatal *anxiety* and stressful life events. The relationships found between them were small. For instance, a study of 296 mothers found a small, positive relationship between antenatal stressful life events and postnatal anxiety at one month (r = .16; Britton, 2005, 2008). Likewise, a small relationship was found between postnatal recent and concurrent stressors and postnatal anxiety at 3 months (β = .16) among 123 mothers (Terry, 1991a). Another study of anxious first-time mothers (N = 147) found that highly anxious mothers were more likely to report more recent life events, although when neuroticism was controlled for, the relationship weakened, implying that anxiety may have been a determinant in the relationship (Barnett & Parker, 1986).

Studies of postpartum stress tend to use general measures of stressful life events. They typically take the form of life event checklists, with items weighted for severity, and which have occurred in the recent past, usually the previous 6 to 12 months. Examples include the Pilkonis Life Events Schedule (PLES; Pilkonis, 1979; Pilkonis, Imber, & Rubinsky, 1985) and the Life Events Inventory (LEI; Cochrane & Robertson, 1973). Checklist life event scales reflect items from broad categories, such as role, relationships and loss. Typical items include the death of a loved one, divorce, loss of a job, moving house and going to court. Motherhood experience is not represented in these checklists. It is also of note, that although pregnancy and childbirth are included in some of these measures, the life event of becoming a parent is not. Yet for most women,

new motherhood experience incorporates several of the items listed in these life inventories, such as significant changes in role, income and relationships (Belsky & Pensky, 1988; Belsky et al., 1989; Campbell et al., 1992; Correia & Linhares, 2007; Figueiredo & Conde, 2011; Reichle & Montada, 1994; Ruble et al., 1990; Wenzel et al., 2005; Winson, 2009). Of course, these changes are not necessarily linked to the experience of motherhood per se, and could be related to other circumstances.

Parenting is recognised as a stressor for mothers of young children and babies and there are a number of dedicated measures of stress related to parenting, although most do not focus on new motherhood. For example, the Parenting Daily Hassles Scale (PDH; Crnic & Greenberg, 1990) comprises 20 items that are rated on frequency and intensity. They reflect challenging child behaviour such as "being nagged or whined to" and "kids resist or struggle over bedtime". The Childcare Stress Inventory (CSI; Cutrona, 1982) and the Parenting Stress Inventory (PSI; Terry, 1991b) assess stress related to caring for infants and children. While these scales do address many aspects of the early weeks caring for a new baby, there is scope to expand them to provide coverage of broader motherhood experience.

In summary, stressful life events have been consistently linked to postpartum adjustment. General measures of life events do not provide information about motherhood experience and limited attention is given to this in parenting scales. Thus, there may be a benefit in assessing stressful experience specifically in relation to new motherhood.

Meta-analyses of prospective risk factor studies. The findings above regarding key risk factors are underscored by three meta-analyses (Beck, 2001; O'Hara & Swain, 1996; Robertson et al., 2003, 2004). They agreed on the most consistent risk factors for postpartum depression. Inclusion criteria were that studies prospectively

investigated the relationship between predictors and postnatal depression, that postnatal depression was assessed at least two weeks postpartum, and that sufficient statistics were available to conduct meta-analytic calculations. Random or quasi-random sampling, and measures with proven reliability and validity were also required. Robertson et al. analysed some studies not included in the earlier meta-analyses, along with studies published subsequent to them.

The meta-analyses identified more than a dozen well-established risk factors for postnatal depression. The key factors are listed in Table 1.01, and are grouped according to common features; psychological history, relationships, and stressful events (O'Hara & Wisner, 2014). To enable comparison, all effect sizes are reported as *d.* This was achieved by converting *r* to *d* where necessary (Rosenthal, 1994). The strength of each risk factor was then classified according to Cohen's (1977, 1988) benchmarks; 0.8 indicates a strong relationship, 0.5 is moderate and 0.2 is weak.

Table 1.01

Key Risk Factors for Postnatal Depression Identified in Meta-analyses by (1) O'Hara and Swain, N = 12,810 (1996), (2) Beck, N ≈ 3,000 (2001), by Group, Mean Effect Size (d), Relative Strength and Number of Studies

Risk factor Group	Risk factor	Mean *d*		Strength	No. of studies
Psychological History	Depression during pregnancy*	(1)	0.75	Moderate	13
		(2)	0.98	Strong	21
	Anxiety during pregnancy*	(1)	0.68	Moderate	5
		(2)	0.90	Strong	4
	Previous history of psychopathology*	(1)	0.57	Moderate	12
		(2)	0.85	Strong	11
Relationships	Lack of social support*	(1)	0.63	Moderate	5
		(2)	0.77	Moderate	27
	Quality of marital relationship*	(1)	0.24	Weak	8
		(2)	0.85	Strong	14
	Baby's father support	(1)	0.53	Moderate	5
		(2)	-	-	-
Stressful Events	Stressful life events during pregnancy or the early puerperium*	(1)	0.60	Moderate	15
		(2)	0.82	Strong	16
	Childcare stress*	(1)	-	-	-
		(2)	1.04	Strong	7
	Difficult infant temperament*	(1)	-	-	-
		(2)	0.70	Moderate	10

Note. * Strength of risk factor reported in meta-analyses (1) and/or (2) confirmed in meta-analysis by Robertson et al., *N*≈24,000 (2003, 2004).

Two features of established risk factors suggest merit in investigating motherhood experience as a possible influence on postpartum adjustment. First, the

strongest predictors share an historical nature, in that they pre-date as opposed to co-exist with the postpartum period. These include a history of psychological difficulties, antenatal depression, and antenatal anxiety. While these factors are important in that they may be reflected in a vulnerability to later psychological difficulties, they cannot be modified and therefore present no opportunity for improvement in adjustment. In contrast, concurrent factors, such as the experience of caring for a new baby, may be modifiable. Second, while concurrent predictors include some individual infant-related stressors, such as childcare stress, infant temperament, colic or breastfeeding difficulties, these might not fully represent the changes and demands involved in becoming a mother. These points will be expanded below.

Infant-related stressors. As mentioned, several infant-related stressors have been identified as predictors of postnatal depression. This demonstrates that aspects of caring for a new baby can be stressful and are associated with mothers' psychological functioning. In addition to common experience of the demands of a new infant, with inevitable sleep deprivation as well as change in multiple life domains, some mothers experience breastfeeding difficulties (Kanotra et al., 2007; Mortazavi et al., 2014; Shakespeare et al., 2004; Smith, 1989; Zubaran & Foresti, 2013), infant colic (Akman et al., 2006; Howell et al., 2006; Vik et al., 2009), and inconsolable infant crying (Kurth et al., 2014; Oberklaid, 2000; Papousek & von Hofacker, 1998; Radesky et al., 2013; Vik et al., 2009). Also consistent with the idea that this period may be stressful are common reasons for mothers to seek professional help, including prolonged infant crying, frequent night-time waking, short daytime sleeps and feeding difficulties (Morrell, 1999; Oberklaid, 2000).

In addition to their identification in meta-analyses (Beck, 2001; O'Hara & Swain, 1996; Robertson et al., 2003, 2004), individual studies have investigated "childcare

stress" and "difficult infant temperament" as predictors of postnatal adjustment (Britton, 2011; Cutrona & Troutman, 1986; Hopkins, Campbell, & Marcus, 1987; Mantymaa, Puura, Luoma, Salmelin, & Taaminen, 2006; Mayberry & Affonso, 2009; McMahon, Barnett, Kowalenko, Tennant, & Don, 2001; Porter & Hsu, 2003; Solmeyer & Feinberg, 2011). The relationship between infant temperament and postnatal depression is well-established. In a study of 124 mothers, infant difficultness was significantly related to mothers' mental distress (r = .48; Mantymaa et al., 2006). Similarly, negative infant temperament correlated with two measures of distress; postnatal depression (r = .20) and parenting stress (r = .31), in a study of 139 mothers (Solmeyer & Feinberg, 2011). Infant difficultness has also predicted postnatal anxiety. For instance, Britton found a small to moderate correlation between them (r = .24) in his study of 296 mothers. Further, McMahon et al. compared a group of mothers in a residential unit of a parentcraft hospital, most of whom were depressed, with a group of demographically matched mothers and found the inpatient group had higher state and trait anxiety scores and rated their infants as more difficult than the comparison group.

Despite these findings, a question remains as to the direction of any causal relationship between infant temperament and depression and anxiety, because more distressed mothers might perceive their infants' behaviour more negatively (Armstrong, van Haeringen, Dadds, & Cash, 1998; Austin, Hadzi-Pavlovic, Leader, Saint, & Parker, 2005; Britton, 2011; Papousek & von Hofacker, 1998). There are other infant-related stressors for which the causal direction is probably clearer, in that the physical difficulties themselves are more likely to cause than be caused by psychological distress. These include breastfeeding difficulties (Abou-Dakn et al., 2009; Kanotra et al., 2007; Mortazavi et al., 2014; Shakespeare et al., 2004; Smith, 1989; Watkins et al., 2011; Zubaran & Foresti, 2013) and infant colic (Akman et al., 2006; Howell et al., 2006; Vik et

al., 2009). In a study of 2586 mothers, those who experienced severe breastfeeding pain in the first 2 weeks were more likely to be depressed at 2 months than those who did not experience pain related to breastfeeding (Watkins et al., 2011). Howell et al. found that mothers with depressive symptoms were more likely than non-depressed mothers to have an infant with colic, OR 1.79, 95% CI:1.29-2.50. Colic was assessed as part of an interview, whereby mothers indicated they did or did not have a colicky baby. While these results were likely open to reporting bias, results from other studies may be less so, given the use of specific criteria to assess colic. Vik et al. (*N* = 1015) and Akman et al. (*N* = 78) both used duration and frequency criteria (e.g., paroxysms of irritability, fussing, or crying lasting for a total of more than three hours per day and occurring on more than three days in any one week; Wessel, Cobb, Jackson, Harris, & Detwiler, 1954) and found higher EPDS scores for mothers who had infants with colic than for those without.

Overall, it is clear that individual infant-related stressors are linked to postpartum adjustment. It is conceivable that multiple, co-existing stressors could impose an accumulative burden, and exert a greater psychological impact. This is consistent with the stress literature, which acknowledges greater stress in relation to multiple stressors (Cohen, 2000; Lepore & Evans, 1996; Martimportugues-Goyenechea & Gomez-Jacinto, 2005; Turner & Lloyd 1995).

Historical nature of some risk factors. It is noteworthy that the majority of reliable risk factors for postpartum adjustment problems are not unique to the perinatal period and thus to the timing of the experience of becoming a mother per se. Risk factors can be classed as vulnerability factors related to previous history of psychological difficulties, or situational factors related to concurrent circumstances (Wenzel et al., 2005). Of the predictors in Table 1.01, only “high levels of childcare

stress" and "difficult infant temperament" can be considered specific to the experience of motherhood. Neither of these factors represents the broader experience of motherhood, leaving room for investigation of this as a factor.

Just as the focus on postpartum adjustment in the literature has been somewhat skewed towards postnatal depression, the focus on risk factors for postpartum adjustment has been somewhat skewed towards antenatal or historical factors, as distinct from concurrent or postnatal factors. As outlined in Table 1.01, the risk factor group "psychological history" is part of women's personal history. Additional risk factors, such as social support and relationship quality, which might be assumed to be concurrent in the postpartum rather than historical factors, have been measured postnatally in some studies and antenatally in others. By contrast, the focus of this research was on the impact of events occurring *during* the postpartum period. As adjustment is likely to be determined by current experience as well as historical factors, examining the role of motherhood experience may clarify if this is a factor to consider in relation to mothers' mental health. Further, as experience is potentially modifiable, results may have implications in the prevention or remediation of postnatal psychological distress, in the form of strategies to improve experience and thus adjustment.

Summary

The possibility that motherhood experience may be a factor in postpartum adjustment has been largely overlooked in the literature. Characteristics of postnatal anxiety and depression are consistent with the presence of a concurrent stressor. These include the common diagnosis of postnatal anxiety as an adjustment disorder in response to a stressor, the generally milder and shorter nature of postpartum

depression and the trajectory of depression and anxiety antenatally to postnatally and within the postpartum. With several individual infant-related stressors identified, it is clear that aspects of motherhood can be stressful, although the experience as a whole is not classified as such. This research will add to these findings, by investigating the impact on mothers of the broader experience caring for a new baby.

The next chapter will expand the argument for experience as a factor in adjustment, by outlining research with a more specific focus on the expectations and experience of the early weeks of motherhood.

Chapter 2

Motherhood Experience and Postpartum Adjustment

Specific aspects of motherhood experience are related to postnatal depression and anxiety, providing support for broader motherhood experience as a stressor. As experience may be coloured by prior expectations, research that has investigated differences between expectations and experience of motherhood is also relevant. This chapter will address both of these concepts.

Motherhood Experience

Obviously motherhood can provide opportunities for joy, love, fun and personal growth and fulfilment (Green & Kafetsios, 1997), although for many women motherhood includes a mix of positive and less positive experiences (Darvill et al., 2010; Harwood et al., 2007; Lupton, 2000). In a survey of 1285 women at 6 weeks postpartum, the majority found motherhood was a positive experience (Green & Kafetsios, 1997). Two-thirds gave maximum possible ratings for enjoying looking after the baby, 79% for being proud of being a mother and 72% reported no disappointments about motherhood.

Nonetheless, mothers of new babies, whether for the first-time or subsequently, must contend with a variety of daily, labour-intensive activities in caring for a baby, (Fedele, Golding, Grossman, & Pollack, 1988; Kanotra et al., 2007; Matthey, 2007, 2011; McVeigh, 1997; Rowe & Fisher, 2010; Sword & Watt, 2005; Wisner, Parry, & Piontek, 2002). This time is also characterised by often temporary, but nonetheless significant, physical and hormonal changes (Asher et al., 1995; Bloch, Rotenberg, Koren, & Klein, 2005; Mortazavi et al., 2014). While much previous research has given attention to mothering babies irrespective of parity, the outcomes inform understanding of the

experience of first-time mothers. Primiparous mothers in particular are dealing with significant changes in their lives, which may include their occupation or role, their income, and their intimate, familial and social relationships (Barclay, Everitt, Rogan, Schmied, & Wyllie, 1997; Kanotra et al., 2007; Parfitt & Ayers, 2014; Reichle & Montada, 1994). Mothers of more than one child may experience additional changes, specifically in relation to managing the competing demands of multiple children (Fish & Stifter, 1993; Mercer & Ferketich, 1995). For these reasons, this research will distinguish between primiparous and multiparous mothers and use samples of each.

The infant-related stressors mentioned in the previous chapter indicate that motherhood experience may include stressful aspects. Additional stressors include sleep interruption and deprivation (Crouch & Manderson, 1993; Dorheim et al., 2009; Gay et al., 2004; Lee & DeJoseph, 1992; Mercer, 1986; Parfitt & Ayers, 2014; Smith, 1989), developing the requisite skills to care for an infant (Kanotra et al., 2007; Mercer, 1986), body image concerns (Smith, 1989), reduced personal time (Mercer, 1986), no longer being in paid employment, income reduction, social isolation, reduced intellectual stimulation (Winson, 2009), hormonal fluctuations (Taylor, Glover, & Kammerer, 2007), lack of variety, and the constant presence and demands of a dependent and sometimes unsettled infant (McMahon et al., 2001; Phillips, Charles, Sharpe, & Matthey, 2009).

That the *overall* motherhood experience can be stressful was indicated in Matthey's (2007) retrospective study of 221 first-time mothers at one year postpartum. At least one period of difficulty coping lasting more than 2 weeks was reported by 24% of mothers, with half indicating this occurred after 6 weeks postpartum. This also suggests there are individual differences in the timing of infant care stressors. Frequently reported stressors included baby-care, fatigue, household chores, infant

illness, financial concerns, lack of support, lack of confidence and tension with family members.

Motherhood Experience and Postpartum Adjustment

It would seem surprising if the combined impact of the demands in caring for a new baby, accompanied by multiple life changes, did not challenge new mothers' ability to cope psychologically and adjust to her new role. Maternal anxiety in the postpartum may manifest as fears about the health and safety of the new baby (Matthey et al., 2003; Wenzel et al., 2001), managing the household, and concerns about their appearance and finances (Wenzel et al., 2003). Mothers may feel lonely, guilty, worthless, insecure, and experience a loss of control, pleasure and former identity (Barclay et al., 1997; Beck, 1992, 1993; Leahy-Warren & McCarthy, 2007).

While individual stressors, such as breastfeeding difficulties (Kanotra et al., 2007; Shakespeare et al., 2004; Smith, 1989; Zubaran & Foresti, 2013), infant colic (Akman et al., 2006; Vik et al., 2009), infant temperament (Britton, 2011; Cutrona & Troutman, 1986; Hopkins et al., 1987; Mantymaa et al., 2006; Mayberry & Affonso, 2009; McMahon et al., 2001; Porter & Hsu, 2003; Solmeyer & Feinberg, 2011; Whiffen & Gotlib, 1989), and sleep interruption and deprivation (Crouch & Manderson, 1993; Dorheim et al., 2009; Mercer, 1986; Parfitt & Ayers, 2014; Smith, 1989), are related to postpartum adjustment, the collective challenges of motherhood has received limited attention as a factor in postpartum adjustment (Howell et al., 2006).

Results from two studies showed a relationship between a collection of stressors and maternal adjustment. A study of 71 primiparous mothers investigated the impact of up to 21 recent child-related stresses, including labour and delivery and problems relating to infant care. The number of recent child-related stresses accounted for 16%

of the variance in depression scores at two weeks postpartum, although this relationship was not evident at 8 weeks postpartum (Cutrona, 1984). Similarly, in a longitudinal study of 123 couples expecting their first child, Terry (1991b) examined the impact of "strain" via the incidence and difficulty of 23 parenting stress items using the PSI (Terry, 1991b) at 4 weeks postpartum. Results indicated that strain was the strongest predictor of psychological well-being at 4 weeks post childbirth ($\beta = -.47$) and remained a predictor at 18 weeks ($\beta = -.17$). In a more recent study, maternal stress explained 12% of the variance in depressive symptoms at 4 weeks, with infant fussiness being the strongest predictor (Terry et al., 1996). Further, EPDS scores at 4 months postpartum strongly correlated ($r = .52$) with worries about infant caretaking (Høivik, Burkeland, Linaker, & Berg-Nielsen, 2013).

Qualitative studies have also studied the emotional impact of changes in a woman's life following childbirth. While these studies report mothers' experience and associated feelings, the frequency of comments made is often unclear (i.e., the proportion of the sample who made similar comments), as is the contribution of comments to each theme identified. This, together with the use of language, may result in undue emphasis on particular issues. In one qualitative study of 55 first-time mothers, focus groups were conducted between 2 and 26 weeks postpartum to identify the changes in becoming a mother (M = 12 weeks; Barclay et al., 1997). Six categories were distinguished, as follows; "realizing the consequences", "unready", "drained", "aloneness", "loss" and "working it out".

Factors related to postpartum *well-being*, as distinct from depression and anxiety, also support the idea of a relationship between motherhood experience and adjustment. These include previous experience with infants (Curry, 1983), information about normal infant sleeping and crying patterns (Smart & Hiscock, 2007), and pram walking

(Currie, 2001; Currie & Develin, 2002). These suggest things that improve experience have a positive effect, and this is not only consistent with a relationship between experience and adjustment, but suggests experience may *influence* adjustment.

The findings above suggest that ease or difficulty managing with aspects of caring for a new baby is related to mothers psychological functioning. While studies have addressed individual and some collective stressors related to infant care, there remains room to explore the role of a broader measure of motherhood experience.

That motherhood experience might act as a stressor and affect postpartum adjustment fits with the well-established diathesis-stress model of the development of psychopathology (Beck, 1967; Brown et al., 1987; Ingram & Luxton, 2000; Lewinsohn et al., 1985). This model combines a predisposition or vulnerability, which may often take the form of a history of psychological difficulties, with a stressor. In the context of motherhood, vulnerability could relate to previous depression or anxiety, antenatally or pre-pregnancy. The model has been put forward in the context of postpartum adjustment and life stress, whether as general life events or parenting stress (Grazioli & Terry, 2000; Leathers, Kelley, & Richman, 1997; O'Hara et al., 1984, 1991). The predicted relationship between experience and adjustment is also consistent with the "vulnerability" life stress process model (Dohrenwend & Dohrenwend, 1981), which takes account of stressful life events, along with the person and their environment, in the development of psychopathology (Dohrenwend, 1979, 1986; Dohrenwend & Dohrenwend, 1984).

Maternal Self-efficacy

If experience is related to adjustment, mothers' competence and confidence in the experience should play a role, that is, maternal self-efficacy. Maternal parental self-

efficacy has been defined as "beliefs a [mother] holds of their capabilities to organise and execute a set of tasks related to parenting a child" (Leahy-Warren, McCarthy, & Corcoran, 2012, p. 389). Some of the demands of motherhood may challenge women's beliefs in their own competence, prompting thoughts of self-doubt, inadequacy and low confidence regarding capacity to cope with the demands of the new role. Women may become anxious about their ability to adequately care for and protect their infant. Challenges and subsequent changes self-efficacy beliefs may result in negative affect (Bandura & Locke, 2003). Conversely, ease in managing motherhood experience may promote self-efficacy through the experience of mastery (Bandura, 1997).

Studies have demonstrated a negative relationship between maternal self-efficacy and postnatal depression (Coleman & Karraker, 1997; Cutrona & Troutman, 1986; Donovan & Leavitt, 1989; Donovan, Leavitt, & Walsh, 1990; Gondoli & Silverberg, 1997; Howell et al., 2006; Jackson, 2000; Leahy-Warren & McCarthy, 2011; Maciejewski, Prigerson, & Mazure, 2000; Olioff & Aboud, 1991; Teti & Gelfand, 1991), although there are some inconsistencies in findings. A phone survey of 720 mothers between 2 and 6 weeks postpartum found depressed women were more likely to have lower self-efficacy scores, OR 0.90, 95% CI:0.86-0.94 (Howell et al., 2006). On the other hand, a study of 61 primiparous women did not find a relationship with depressive symptoms at one month postpartum, although maternal self-efficacy was correlated with anxiety (r = -.42; Porter & Hsu, 2003). In relation to a specific aspect of motherhood experience, breastfeeding self-efficacy is also negatively correlated with postpartum depression (r = -.35; Zubaran & Foresti, 2013). In a meta-analysis of eight studies of maternal self-efficacy in the postpartum, Leahy-Warren and McCarthy (2011) highlighted the negative relationship between maternal self-efficacy and postnatal anxiety. In addition, maternal self-efficacy has been shown to mediate relationships between postnatal

depression and each of social support (Cutrona & Troutman, 1986; Haslam, Pakenham, & Smith, 2006), stressful life events (Maciejewski et al., 2000), and infant temperament (Cutrona & Troutman, 1986).

While it is clear that mothers' perceptions of their competence and confidence are related to postnatal adjustment, it stands to reason that these perceptions will also be related to how well they manage caring for a new baby. In this research, it is therefore anticipated that the relationship between motherhood experience and postpartum adjustment will be mediated by the mechanism of maternal self-efficacy. This may clarify *how* experience impacts adjustment and thus postnatal psychological well-being.

Motherhood Expectations-Experience Discrepancy

As briefly mentioned earlier, women's experience may be interpreted in the context of their prior expectations. Commonsense dictates that some expectations develop through experience, where previous learning shapes ideas of things to come. However, in the absence of experience, expectations may develop from information obtained from the environment (Darvill et al., 2010). This information may not always be an accurate reflection of motherhood experience. Motherhood may be idealised concept, projected in a positive light (Hays, 1996; Liamputtong, 2006; Liamputtong, Yimyam, Parisunyakul, Baosoung, & Sansiriphun, 2004; Lupton, 2000; Manne, 2005; Maushart, 1997; McMahon, 1995). Similarly biased is the idea that there is an automatic bond between mother and infant and that mothers know, by instinct, how to care for their new infant (Bobel, 2002; Eyer, 1994; Hays, 1996; Miller, 2007; Oakley 1979; Polatnick, 1996; Rich, 1977). These sociocultural perspectives are reflected in positive images of motherhood in the media (Nicholson, 1993; Saunders, 2003). Women's

magazines portray a romantic, idealised version of motherhood, showing images of radiant and relaxed celebrity mothers with happy babies, projecting an easy adjustment to motherhood (Douglas & Michaels, 2005; Wickham, 2004; Winson, 2009). Further, the media and popular culture largely ignore the physical and emotional difficulties of motherhood, like sleep deprivation, the constant demands of a new infant, and the often-associated anxiety (Dunnewold & Sanford, 1994; Ussher, 1992). On the other hand, in a content analysis of treatment by the media of postpartum psychiatric disorders (Martinez, Johnston-Robledo, Ulsh, & Chrisler, 2000) it has been argued that the press "pathologized and sensationalized" postnatal psychological difficulties (Held & Rutherford, 2012, p. 117).

Thus, while it would not be surprising for some women to develop unrealistically positive expectations of life after childbirth, negative antenatal expectations are also possible (Luoma et al., 2004). Previous research comparing maternal expectations of motherhood to actual experience shows they do not always match (Callahan Churchill & Davis, 2010; Darvill et al., 2010; Harwood et al., 2007; Kalmuss, Davidson, & Cushman, 1992; McIntosh, 1993; Miller, 2002; Pancer, Pratt, Hunsberger, & Gallant, 2000; Read, Crockett, & Mason, 2012; Shakespeare et al., 2004; Tammentie, Paavilainen, Astedt-Kurki & Tarkka, 2004; Wardrop & Popadiuk, 2013; Young, 2008). Indeed, of 69 mothers interviewed at 3 months postpartum, 94% reported experiencing at least one "surprise" that is, an "unforeseen act of mothering a newborn" (Callahan Churchill & Davis, 2010, p.57). The researchers classified 9.5% as positive surprises, 84.6% as negative, and 5.9% as ambiguous.

Notably, much of the research relevant to this topic is qualitative and retrospective in nature, with small samples, so findings should be interpreted with caution. One study of 9 mothers suffering postnatal depression determined by EPDS

scores at 6 to 8 weeks postpartum found women were surprised at the lack of time for themselves, compared themselves unfavourably to their mothers and to their positive recollections or expectations of family life (Tammentie et al., 2004). Similarly, a qualitative study of 11 first-time mothers in the year following childbirth found mothers felt unprepared for the baby care and fatigue aspects of motherhood (Young, 2008). Mothers' comments included "it was a big shock", "it was overwhelming, the responsibility of it all", and "it was chaos" (p. 29). In addition, the content analysis of written comments of 79 new mothers at 6 weeks postpartum reflected the nature of discrepancies between motherhood expectations and experience (McVeigh, 1997). Comments, albeit unquantified, were classified into six categories; conspiracy of silence about the realities of motherhood, why didn't someone tell me it would be so hard?, no one told me I would be so tired, there is no time left for me, nothing prepared me for the realities of 24-hour-a-day infant care, I don't know what I would have done without his support.

Given the above, it is clear that antenatal expectations of motherhood may be discrepant to actual experience. The implications of this discrepancy for postpartum well-being are outlined next.

Motherhood Expectations-Experience Discrepancy and Postpartum Adjustment

When events do not turn out as well as expected, there is often a sense of disappointment and a lack of satisfaction (Higgins, 1987). If there is a mismatch between maternal antenatal expectations and postnatal experience of motherhood, it may affect how well they adjust to the changed conditions (Harwood et al., 2007; Kalmuss et al., 1992). Women who are overly optimistic antenatally may fail to anticipate some of the challenges to come and are thus more likely to find motherhood

harder than expected, and feel the negative psychological impact of that. Where a negative discrepancy does occur, it may lead to negative personal evaluations of self, or self in comparison to others. A discrepancy could challenge pre-existing beliefs about themselves as new mothers, how they appear in their own eyes and in the eyes of significant others. Related feelings may include sadness and disappointment that it is more difficult, less intuitive and fulfilling than expected, guilt in not enjoying the experience, self-doubt and self-criticism at difficulty managing, and anxiety about sharing their difficulties with others. Understanding whether differences between expectation and experience influences adjustment is important because it may clarify perceptions of experience, which in turn may imply avenues to address and improve.

As with experience, if discrepancy acts as a stressor and there is an existing vulnerability, the diathesis-stress model (Beck, 1967; Brown et al., 1987; Ingram & Luxton, 2005; Lewinsohn et al., 1985) fits the proposed relationship of discrepancy with adjustment. Other theoretical models specifically reference expectations. These reflect the intuitive logic that when expectations are more positive than experience, the greater the disparity the greater the disruption and difficulty in regaining psychological equilibrium and adjusting to the new conditions. These theories include cognitive dissonance theory (Festinger, 1957), self-discrepancy theory (Higgins, 1987), expectancy violation theory (EVT; Burgoon, 1978) and the theory of balanced expectations (Pancer, Pratt, & Hunsberger; 2000).

Harwood et al.'s (2007) prospective study provides evidence that the correspondence between expectations and experience is related to adjustment. They assessed 71 first-time mothers during pregnancy and again at four months postpartum. Notably, results reflect a direct comparison of an antenatal measure of expectations with a postnatal measure of experience (Harwood, 2004). A 55-item self-report

measure was developed to assess antenatal expectations and postnatal experience of being a new mother (Harwood, 2004). The scale comprised four subscales, addressing infant care, partner relationship, social relationships, and personal well-being. Many of the 55 items in this scale relate to the tasks and changes in becoming a mother, with a significant number focused on feelings, including "I will feel proud to be a parent", "Being a parent will be the most important thing in my life" and "Being a mother will make me feel fulfilled as a woman". Scores from pre and post childbirth assessments were used to calculate an expectation discrepancy score. The EPDS (Cox et al., 1987) was used to measure depression. The results revealed that for 35% of women, the experience of motherhood was less positive than expected. Further, expectation discrepancy was associated with more severe depression symptoms and accounted for 19% of the variance in depressive symptoms, after controlling for antenatal depression.

A retrospective comparison of expectations and experience in items related to child and parenting is incorporated in a well-validated measure of parental distress (Parenting Stress Index – Short Form; PSI; Abidin, 1995). Item examples are "My child turned out to be a lot more of a problem than I had expected" and "My child smiles at me much less than I expected", with higher scores indicating a greater negative discrepancy between expectations and experience. When 139 mothers completed this measure and a 14-item Center for Epidemiological Studies Depression scale (CES-D; Radloff, 1977) at 4 to 8 months postpartum, a moderate correlation (r = .43) was found between parenting stress that included unmet expectations, and depressive symptoms (Solmeyer & Feinberg, 2011).

Several qualitative studies have also suggested that the match between expectations and experience is a factor in adjustment. Kalmuss et al. (1992) telephone interviewed 473 women antenatally about their parenting expectations and at 12

months postpartum about their experience. Questions covered 9 domains; relations with spouse, extended family and friends, physical and financial well-being, employment, maternal competence and satisfaction and caregiving assistance from spouse. The same questions were asked pre- and post-birth, with the latter phrased in relation to actual experience or amounts of change. Perceived adjustment to parenthood was assessed in a summary measure covering ease of transition, stress and satisfaction. Findings showed that in seven of the nine domains, expectations differed significantly from experience. Mothers expected things to be better than they proved to be in five domains (relationship with spouse, relationship with friends, physical well-being, maternal competence, caregiving assistance from spouse) and worse than they proved to be in two (economic situation, desire to work). Adjustment was more difficult when expectations exceeded experience.

Likewise, Pancer et al. (2000) used a structured interview with 69 couples to measure antenatal expectations and postnatal experience about being a parent. The researchers were interested in the relationship between the way parents think and postpartum adjustment, so responses were coded for "complexity of thinking", that is, the tendency to take into account both the positive and negative aspects of the parenting experience. Outcome measures included the CES-D (Radloff, 1977) for depression and the Self-Esteem Scale (SES; Rosenberg, 1965). Antenatal complex thinking was positively related to adjustment; depression $\beta = -.28$, self-esteem $\beta = .27$. These findings suggest that unqualified, unrealistic, or exclusively positive expectations, or a lack of preparedness for the more challenging aspects of motherhood are likely to be linked to future maladjustment.

The importance of motherhood expectations relative to experience was also highlighted in Beck's (2002) meta-synthesis of 18 qualitative studies. It included studies

of primiparous and multiparous mothers suffering postnatal depression, published between 1990 and 1999. Beck identified four main themes; including incongruity between expectations and reality of motherhood. Some mothers' expectations related to beliefs about being "a good mother" and struggled to live up to that image. Some experienced unhappiness and depression, which was at odds with their expectations of being happy with their baby. Others needed help in caring for the baby, when they expected to be able to cope.

The above findings support the possibility of an expectations-experience discrepancy as a factor in postpartum adjustment. Accordingly, one of the aims of this research was to investigate the role of discrepancy.

Summary

Overall, the experience of motherhood is potentially stressful, and does not always correspond to expectations. Adjustment may relate to concurrent events, such as the experience of motherhood, itself, or in comparison to antenatal expectations. This makes sense even if depression and anxiety in new mothers is a re-occurrence or continuation of previous psychological difficulties. That is, whether or not women are vulnerable to psychological difficulties, the ability to adjust psychologically will likely be influenced by the ease or difficulty in managing motherhood experience. Limited attention has been given to this issue to date. Addressing this gap in the literature is important because motherhood experience may be modified and improved, with a corresponding benefit to psychological well-being. This research will test the proposition that the experience of motherhood itself, and in comparison to antenatal expectations, is related to postpartum psychological adjustment. To this end, Study 1

will survey first-time mothers about their antenatal expectations and postnatal experience of motherhood, and their psychological well-being at both time points.

Chapter 3

Study 1

Overview

The aim of Study 1 was to test the propositions that first-time motherhood experience predicts postpartum adjustment, and similarly the discrepancy between antenatal expectations and postnatal experience of motherhood. This involved assessing antenatal mood and expectations of motherhood, and postnatal mood and actual experience of motherhood in first-time mothers. This study focused on the experience of first-time mothers, given the greatest change almost certainly occurs with first rather than subsequent babies. Motherhood experience was assessed using a 50-item measure of the ease or difficulty in managing the care of a new baby. A broad measure of experience was used, rather than focusing on individual aspects experienced only by some mothers. Thus, the findings of this study may be relevant to more new mothers. Adjustment was assessed using measures of depression and anxiety, with a measure of well-being also included given its positive content. To be able to control for established risk factors for postpartum adjustment difficulties, a measure of social support was included, while data about previous psychological history was collected in antenatal mood scores and responses to self-report questions. In addition, the study aimed to test the mediational effect of maternal self-efficacy on the relationship between experience and adjustment, in an effort to understand a possible mechanism at work.

Over and above the reasons provided for the selection of each of measure, consideration was given to the requirement for continuous rather than categorical outcomes common in clinical settings, to address the larger number of women who

experience postnatal depression and anxiety at sub-clinical levels (Blazer, Kessler, McGonagle, & Swartz, 1994; Gibson, McKenzie-Mcharg, Shakespeare, Price, & Gray, 2009; Matthey, Henshaw, Elliott, & Barnett, 2006; PIRI, 2009).

Hypotheses

The hypotheses were as follows:

1. Difficulty of managing motherhood experience would be positively related to depression and anxiety, and negatively related to well-being.
2. Difficulty of managing motherhood experience would predict postpartum adjustment after controlling for antenatal adjustment, expectations of motherhood and social support.
3. Negative discrepancy between expectations and experience of motherhood would predict poorer postpartum adjustment.
4. The discrepancy between expectations and experience of motherhood would predict postpartum adjustment after controlling for antenatal adjustment and social support.
5. The relationship between motherhood experience and postpartum adjustment would be mediated by maternal self-efficacy.

Method

Participants

Participants were primarily recruited via hospital antenatal classes. The classes were attended by the researcher, who outlined the study and asked interested women to provide an email address so that further information could be sent to them. Across one public and one private hospital in Adelaide, South Australia, 325 women pregnant with their first child agreed to receive an email containing a link to the first of 2 online

surveys, or a hardcopy of the first survey. Of these potential participants, 238 came from the public hospital and 87 from the private hospital. Other potential participants could access the surveys online, where they were posted as secure links in the forums of four pregnancy and birth information websites as follows; www.huggies.com.au, www.birth.com.au, www.bubhub.com.au, www.motherandbaby.ninemsn.com.au.

From across all of the recruitment avenues, a total of 136 mothers completed both the antenatal and postnatal survey. The majority were relatively highly qualified, with more than 80% having a TAFE, trade or university qualification. In addition, the participants were predominantly living with their partners and at less than 10%, there were too few un-partnered women to allow any test of its effects. The characteristics of the sample are in Table 3.01.

Table 3.01

Sample Characteristics (N = 136)

	M	*SD*
Age	30.71	5.30
	n	*%*
Nationality		
Australian	111	81.62
Other	25	18.38
Educational level		
Less than Year 12	3	2.21
Year 12	21	15.44
TAFE or trade qualification	39	28.68
University qualification	73	53.67
Living arrangements		
With partner	126	92.65
Alone	4	2.94
With family or other adult	6	4.41
Employment status (antenatal)		
Employed full-time	65	47.79
Employed part-time	23	16.91
Not working	48	35.29
Self-reported personal history of		
Depression	35	25.73
Anxiety	45	33.09
Other psychological problems	5	3.68
None	51	37.50
Childbirth		
By caesarean section	52	38.24
With complications	64	47.06

Design

A prospective design was used. The effect of experience and expectations-experience discrepancy on postpartum depression, anxiety and well-being was investigated. Data were collected at two time points via self-report surveys (Appendix C) that included the same measures of mood and motherhood. Participants completed the first survey in their third trimester of pregnancy and the second approximately six weeks after childbirth, so that mothers had had some time to experience life with a new baby. The timing of data collection was also consistent with postnatal depression research practice of avoiding assessment in the first 2 weeks to prevent results being confounded by the temporary and mild postpartum blues common to this period (Beck, 2001; O'Hara & Swain, 1996; Robertson et al., 2003, 2004). Additionally, timing was determined to capture maximum data, given it was expected that some women may have returned to work from about 6 weeks postpartum.

Measures

Motherhood expectations and experience. The measure of antenatal expectation and postnatal experience of motherhood was intended to capture the ease or difficulty managing the day-to-day aspects of caring for a new infant. The New Motherhood Questionnaire (NMQ), comprising 50 self-report items, was developed for this study. The development of the questionnaire was guided by the desire to compile a list of the activities, many brief, frequent and repetitive, which make up much of the experience of being a new mother. It was inspired by and used some items from the PSI (Terry, 1991b, 1994) and the CSI (Cutrona, 1982). Additional items were based on the Barkin Index of Maternal Functioning (BIMF; Barkin et al., 2010) and the Parenting Expectations measure (Harwood, 2004; Harwood et al., 2007). Other items related to

the specific personal and practical aspects of motherhood were also incorporated. Some of the items concerned potentially challenging aspects of motherhood (e.g., "experiencing a lack of sleep", "managing and coordinating my daily routine at home"). Items related to the *positive* aspects of motherhood were also included (e.g., "cuddling my baby", "singing to my baby"), partly in recognition of the positive aspects of parenting and partly to be able to take account of the absence of expected positive experiences.

Following Harwood et al. (2007), two versions of the questionnaire were developed, differently worded to assess expectations pre-childbirth and experience post-childbirth. The items were the same in each version. Participants rated their expectations and actual experience on a 7-point rating scale, from 1 (*very easy to manage*) to 7 (*very hard to manage*). A bipolar scale was adopted to enable participants to reflect both the positive and the negative expectations of motherhood. A "not applicable" response option was also provided, providing the opportunity for participants to register items not expected to be or actually relevant (e.g., breastfeeding difficulties if they intended to or did bottle-feed).

Total scores for each scale were determined by calculating the mean of all responses. A "not applicable" response was treated as an unanswered question and thus excluded from the calculation of the mean. Higher scores indicated more negative expectations or a harder to manage experience. An expectations/experience discrepancy score, which reflected how well experience matched expectations, was calculated by deducting the mean experience score from the mean expectations score. Resulting positive values indicated an experience better than expected, and negative values indicated an experience worse than expected.

Postpartum adjustment. Postpartum adjustment was assessed using measures of postnatal depression, anxiety and well-being, in relation to the previous 7 days.

Depression. The Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987) is one of the most widely used perinatal adjustment measures, and is appropriate for both antenatal and postnatal use (Gibson et al., 2009; Oppo et al., 2009). It is a 10 item self-report measure designed to assess symptoms of depression. Items include "I have been able to laugh and see the funny side of things", "I have felt scared or panicky for no very good reason" and "Things have been getting on top of me". Participants select one of four possible responses per item, indicating intensity or frequency, with different response options per item. Scores can range from 0 to 3 per item, giving a minimum test score of 0 and a maximum of 30. Negatively worded items (items 3, 5 through 10) are reverse scored. A cut-off of ≥ 10 is indicative of minor depression and a cut off of ≥ 13 indicates major depression (Dennis, 2004). A cut-off of ≥ 13 was selected for this research. In their 1987 study, Cox et al. validated the EPDS. They compared the EPDS to the major and minor Research Diagnostic Criteria (RDC; Spitzer, Endicott, & Robins, 1978) for a diagnosis of depression. Using a cut-off of ≥ 13, results indicated sensitivity of 86% and specificity of 78%. The positive predictive value of the EPDS for depression was 73%. The split-half reliability was .88 and Cronbach's α was .87. In addition to its sound psychometric properties, and suitability to antenatal and postnatal use, the EPDS was used in this study because of its simplicity and brevity.

Anxiety. The State-Trait Anxiety Inventory for Adults (STAI; Spielberger et al., 1970) is a 40-item measure designed to assess and distinguish between temporary state anxiety and long standing personality trait anxiety. There are two sections of 20 items each: the S-Anxiety subscale which measures how participants feel at the time of

administration, and the T-Anxiety subscale, which measures how participants feel "generally". Following a number of other studies of maternal adjustment (Austin et al., 2007; Moss et al., 2009; Skouteris, Wertheim, Rallis, Milgrom, & Paxton, 2009), for this study, the Trait subscale (STAI-T) was selected in preference to the State subscale because the items are more suitable for assessing how women have been feeling over a period of time, rather than how they feel *at that moment*. For this study, the scale was completed in relation to the past week. Trait anxiety items include "I am a steady person", "I feel like a failure" and "I have disturbing thoughts". Participants responded in relation to the past week on a scale from 1 (*almost never*) to 4 (*almost always*). Total scores can range from 20 to 80, with higher scores indicating greater anxiety. Questions that relate to an absence of anxiety are reverse scored. In previous studies, selected cut-offs for the STAI-T indicative of clinical anxiety range have ranged from 40 (Dennis, Coghlan, & Vigod, 2013; Grant et al., 2008) to 46 (Austin, Tully, & Parker, 2007; Nasreen, Kabir, Forsell, & Edhborg, 2011). A cut-off of STAI-T > 45 was selected for this research. The psychometric properties of the STAI-T include test-retest reliability of .86 (Spielberger et al., 1970) and Cronbach's α of .90 (Tanaka-Matsumi & Kameoka, 1986). Spielberger, Reheiser, Ritterband, Sydeman, and Unger (1995) found that it positively correlated with other measures of anxiety as follows; r = .75 with the IPAT Anxiety Scale (Cattell, 1957) and r = .80 with the Taylor Manifest Anxiety Scale (MAS; Taylor, 1953). In addition to its sound psychometric properties, the STAI-T was selected because of its wide use in the assessment of anxiety and because of its simplicity.

Well-being. The Warwick-Edinburgh Mental Well-being Scale (WEMWBS; Tennant et al., 2007) is a 14 item self-report measure of well-being, which focuses on the positive aspects of psychological health. It covers positive affect, satisfying interpersonal relationships and positive functioning, personal development,

competence and autonomy. Items include "I've been feeling useful", "I've had energy to spare" and "I've been feeling close to other people". Participants respond using a 5-point scale (none of the time, rarely, some of the time, often, all of the time). Scores can range from 1 (*none of the time*) to 5 (*all of the time*) for each item. The overall score is the mean of all responses, with any items not answered excluded. Higher scores indicate better psychological well-being. Tennant et al. (2007) validated the WEMWBS and found it to be "short, acceptable and meaningful to general population groups" (p. 10). They found it does not show ceiling effects and is not susceptible to social desirability bias, suggesting it may be appropriate for measuring overall improvements in mental well-being. In the general population it had good internal reliability (Cronbach's $\alpha = .91$) and good test-retest reliability after one week ($r = .83$). The WEMWBS strongly correlated with other measures of well-being, including WHO-5 ($r = .77$; Bech, 2004) the Short-Depression Happiness Scale ($r = .73$; Joseph, Linley, Harwood, Lewis, & McCollam, 2004), Satisfaction with Life Scale ($r = .73$; Diener, Emmons, Larsen, & Griffin, 1985), and Scales of Psychological Wellbeing ($r = .74$; Ryff & Keyes, 1995). In addition to its sound psychometric properties, this measure was selected in particular because of its positive content, as a counter to the less positive content in the other selected scales, thereby presenting a more balanced set of questions for participants.

Maternal self-efficacy. To determine how confident and prepared women feel about motherhood, a self-efficacy scale was included in both the antenatal and postnatal surveys. No existing self-efficacy scale could be found to assess self-efficacy specifically in relation to the practical aspects of motherhood. Thus, a 10-item scale was developed to assess how confident and prepared women felt. Participants were asked to rate each item on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*). Examples included "I don't feel prepared for new motherhood" and "I will easily be able to adjust

my life around the needs of my new baby". Three items (2, 5 and 6) were reverse coded. The overall score was the mean value of all responses, with higher scores indicating greater self-efficacy.

Social support. Perceived social support was measured using questions based on the Modified Kendler Social Support Interview (MKSSI; Kendler, Myers, & Prescott, 2005; Spoozak, Gotman, Smith, Belanger, & Yonkers, 2009) as used in perinatal populations (Buist, Gotman, & Yonkers, 2011; Spoozak et al., 2009). Nine items were used to assess three aspects of perceived social support from each of a woman's partner, family and friends. Examples include "my partner understands the way I feel and think about things", "my family listen to me if I need to talk about my worries or problems", and "my friends go out of their way to help me if I really need it". Participants rated each item on a three-point scale from 1 (*not nearly enough*) to 3 (*as much as I need*). A not applicable option was also provided. The overall score was the mean value of all responses provided, and ranged from 1 to 3, with higher scores indicating greater perceived social support.

Retrospective discrepancy between expectations and experience of motherhood. To test the validity of the expectations-experience discrepancy score, the postnatal survey also included a five-item scale that assessed participants' subjective perception of their actual experience of motherhood in comparison to their antenatal expectations. Participants were asked to rate each item on a 7-point scale, from 1 (*much easier than I expected*) to 7 (*much harder than I expected*). A not applicable option was also provided. Examples included "Taking care of my baby" and "Taking care of my own needs". The overall score was the mean value of all responses, with any items not answered excluded. Higher scores indicate greater levels of difficulty in managing than expected.

Known risk factors. In the antenatal survey, following Milgrom et al. (2008), participants were also asked to provide yes or no responses to questions about whether they had a previous history of depression, anxiety or other psychological difficulties, and if so, whether they received treatment. The postnatal survey included four questions about the experience of pregnancy and birth. These included "Was pregnancy and enjoyable experience for you? Was your baby born full-term? Did you give birth to your baby via caesarean section? Did you experience any delivery complications?".

Demographic information. Demographic information collected included age, nationality, level of education, postcode, living situation, employment status and occupation, and baby's due (antenatal) and actual (postnatal) date of birth.

Procedure

Prior to completing the first survey during the third trimester of their pregnancy, each participant was provided with an information sheet and consent form (Appendix B). Participants could choose to complete the first survey online or in hardcopy. Those who selected the online version could click on a link to a secure website. In the antenatal survey, participants were asked to indicate the due date of their baby and to provide an email address in order to receive an email with a link to the second survey during the first few weeks postpartum. Approximately 6 weeks after the due date of their baby, participants were emailed the link to the postnatal survey. An opt-out option was provided in the email, which participants could action if they did not wish to complete the second survey, and ensured they did not receive reminder emails. The option to have the postnatal survey sent by mail rather than email was also provided. To ensure anonymity and to enable each participant's responses from the first and second surveys to be matched for comparison, participants were asked to provide a

unique 4 digit code based on the first two letters of their surname followed by their day of birth (e.g., SM06 for Jane Smith born on the 6th of the month). Participants who completed both surveys were automatically entered into a draw to win one of five supermarket vouchers, each worth $100. Participants were also able to elect to receive a summary of the results of the study. Data collection occurred from January through November 2012. The study was approved by the Southern Adelaide Clinical Human Research and Ethics Committee and the Calvary Health Care Adelaide – Human Research and Ethics Committee.

Results

The results of Study 1 are presented below. To begin with, details are presented regarding data preparation, reliability analyses, descriptive statistics, patterns of responses in relation to the motherhood experience measure, and the prevalence of depression and anxiety in the sample. This is followed by results specific to each hypothesis.

Data Preparation

In total, 190 antenatal and 144 postnatal surveys were completed. Data cleaning of the antenatal surveys reduced 190 cases to 173. Those deleted comprised 4 duplicate entries, 7 containing no data, 4 containing responses to the first measure only, and 2 containing less than 30% data. Data cleaning of the postnatal surveys reduced 144 cases to 136. Those deleted comprised 7 containing no data and one survey matched to an antenatal survey containing no data. The resulting attrition rate, reflecting the decrease from 173 pre to 136 post, was 21%.

Missing data. Missing data were less than 1% on any individual scale and 0.23% in total, well below levels of 5% and above considered problematic (Schafer, 1999)

(Appendix A, Table A.01). No pattern was discernible in the missing data, that is, no individual items in any of the scales were missed more than others. It was concluded therefore that missing data were not the result of a problem with any particular item. To retain as many cases as possible, missing data were replaced with the mean of the other items in the scale, as suggested by Tabachnick and Fidell (2007).

To ensure that motherhood experience scores appropriately reflected the ease or difficulty of items expected or experienced, "not applicable" responses on the antenatal and postnatal NMQ were excluded from the calculation of total scores for individual participants. On average, "not applicable" was selected less than 3% on 49/50 antenatal NMQ items, and less than 6% on the items postnatally. This is further discussed below.

Normality. Distributions of scores were inspected to assess normality. Skewness and kurtosis z scores were assessed using the cut-off suited to a sample size between 50 and 300, of ±3.29 (Kim, 2013; Tabachnick & Fidell, 2001). Expectations and experience of motherhood were normally distributed, as were antenatal and postnatal well-being (Table 3.02). Antenatal and postnatal depression and anxiety both demonstrated a positive skew. However, given that both of the scales (EPDS and STAI-T) used in this study are also used as screening tools for clinical depression and anxiety respectively, a positive skew may be typical for these measures, reflecting the normal population prevalence rates (e.g., Jardri et al., 2006).

Table 3.02

Skewness and Kurtosis Z Scores by Variable (Antenatal N = 173, Postnatal N = 136)

	Skewness (*z* score)		Kurtosis (*z* score)	
Variable	Antenatal	Postnatal	Antenatal	Postnatal
Motherhood Experience	0.91	2.46	-1.25	-1.26
Depression	4.16*	4.57*	2.63	1.65
Anxiety	3.96*	4.82*	0.43	1.13
Well-being	-1.57	-1.21	0.81	-0.60
Self-efficacy	-2.61	-3.43*	3.74*	1.59
Social Support	-8.76*	-10.09*	6.54*	15.60*

Note. * skewness or kurtosis > ±3.29 (Kim, 2013; Tabachnick & Fidell, 2001). Antenatal sample includes data for which no follow up data were available.

Both antenatal and postnatal social support scores were severely negatively skewed and showed ceiling effects, in that the modal score was 3, which is the maximum possible score on the scale. The social support measure was thus considered not informative in this study and was not included as a predictor in multiple regression analyses as originally intended.

Outliers. Following Tabachnick and Fidell (2013), for a sample size larger than 80, univariate outliers were identified by a z score cut-off of ±3. Antenatally, there were 2 outliers on the EPDS, maternal self-efficacy and social support, and one on the STAI, WEMWBS. Postnatally there were two outliers on maternal self-efficacy and social

support, and one on the EPDS and the STAI, (Appendix A, Table A.02). As they had no effect on the pattern of results, they were retained for analyses.

Reliabilities

The reliability values for each scale at each data collection point are presented in Table 3.03. All were satisfactory.

Table 3.03

Cronbach's α Reliability Test Results per Scale

Scale	Number of items	Cronbach's α	
		Antenatal (N = 173)	Postnatal (N = 136)
NMQ	50	.97	.98
EPDS	10	.86	.88
STAI-T	20	.93	.94
WEMWBS	14	.91	.93
Self-efficacy	10	.88	.89
Social Support	9	.79	.82
Retrospective Expectations-Experience Discrepancy	5	-	.87

Note. NMQ = New Motherhood Questionnaire; EPDS = Edinburgh Postnatal Depression Scale; STAI–T = State-Trait Anxiety Inventory Trait Subscale; WEMWBS = Warwick-Edinburgh Mental Well-being Scale.

Descriptive Statistics

Preliminary analyses found that in relation to psychological functioning, mean depression and anxiety were low both antenatally and postnatally. In both periods, mean scores on measures of depression and anxiety were at the lower end of the

spectrum, and those for well-being and self-efficacy were at the higher end. In addition, the mean antenatal expectations and postnatal experience scores on the NMQ were below the midpoint of the scale in the "easy to manage" half. Paired samples t-tests were used to test differences between antenatal and postnatal scores. Table 3.04 provides means and standard deviations for each variable, and indicates significant differences and effect sizes.

Table 3.04

Antenatal and Postnatal Means and Standard Deviations and Change Across Childbirth with Effect Size, Cohen's d (N = 136)

Variable	Scale	Possible range	Antenatal		Postnatal		*d*
			M	*SD*	*M*	*SD*	
Motherhood Expectations-Experience***	NMQ	1 – 7 (easy to hard)	3.36	.85	2.86	.97	0.55
Depression*	EPDS	0 - 30	7.34	4.77	6.54	4.62	0.17
Anxiety**	STAI-T	20 - 80	35.86	9.82	33.77	9.93	0.21
Well-being	WEMWBS	1 - 5	3.67	.55	3.72	.60	0.09
Self-efficacy***		1 - 6	4.20	.68	4.73	.73	0.75
Social Support		1 - 3	2.69	.39	2.69	.43	0.00
Retrospective Discrepancy		1 – 7 (easier to harder)	-	-	3.46	1.35	-

Note. NMQ = New Motherhood Questionnaire; EPDS = Edinburgh Postnatal Depression Scale; STAI–T = State-Trait Anxiety Inventory Trait Subscale; WEMWBS = Warwick-Edinburgh Mental Well-being Scale. *$p < .05$, **$p < .01$, ***$p < .001$.

Regarding the change across childbirth, in general, women reported higher levels of maternal self-efficacy, $t(135) = -11.19$, $p < .001$, and were less depressed, $t(135) = 2.04$, $p = .043$, and anxious, $t(135) = 3.19$, $p = .002$, after childbirth than before. While the effect size for the difference in maternal self-efficacy was large, the effect sizes for changes in anxiety and depression were small. There was no significant difference in well-being scores before and after childbirth. Regarding differences between expectations and experience of motherhood, the motherhood rating scale was such that high scores reflected harder to manage expectations or experience. A comparison of antenatal and postnatal scores on this scale was designed to calculate the difference between expectations and experience of motherhood. In general, women found experience slightly better than expected, $t(135) = 7.03$, $p < .001$, with a medium effect size.

Following Harwood et al. (2007) for each participant, an "expectations-experience discrepancy" score was calculated by subtracting the mean experience score from the mean expectations score on the NMQ. A negative discrepancy score resulted from a higher experience than expectations score, and a positive discrepancy score resulted from a higher expectations than experience score. On average, the discrepancy score was positive ($M = 0.49$, $SD = 0.82$). The distribution of scores (Figure 3.01) reflects a positive discrepancy for the majority of participants, and a negative discrepancy for just over 25% of women. For most of these women the negative discrepancy was small, at less than 1.00.

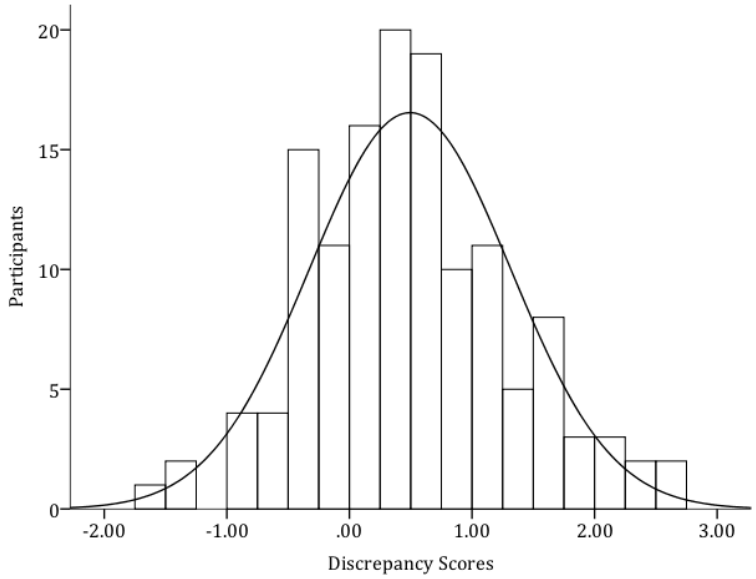

Figure 3.01. Frequency distribution of discrepancy between antenatal expectations of motherhood and postnatal experience scores. Discrepancy = 0 indicates expectations scores matched experience scores; positive scores indicate experience scores were lower than expectation scores; negative scores indicate experience scores were higher than expectation scores.

This study also included a 5-item retrospective measure where women directly compared their experience of motherhood with what they had expected, using a rating scale from 1 (*much easier than I expected*) to 7 (*much harder than I expected*). The scale covered 5 broad issues that are listed in Table 3.05. The overall mean over the five questions was just below the mid-point of the scale (M = 3.46, SD = 1.35), indicating that when they looked back at their expectations, on average, women perceived the actual experience of motherhood to be just a little easier than they anticipated. These findings were consistent with the comparison of NMQ antenatal expectation and postnatal experience scores, with a moderate correlation between the retrospective scale and the

NMQ expectations-experience discrepancy, $r(134) = .47$, $p < .001$. However, the retrospective scale was highly correlated with experience $r(134) = .78$, $p < .001$ and moderately correlated with expectations $r(134) = .43$, $p < .001$, suggesting the discrepancy score was more representative of current experience than discrepancy.

As shown in Table 3.05, on the retrospective measure, in general women found baby care, social changes, and relationship changes easier than they expected, with mean scores for each of these at the lower end of the scale. Women's experience of household matters and self-care were generally experienced as they expected, being around the mid-point of the scale.

Table 3.05

Means and Standard Deviations for 5-Item Retrospective Scale Directly Comparing Expectations and Experience of Motherhood Measured Postnatally (N = 136)

Item	*M*	*SD*
Changes in my social life	3.00	1.51
Changes in my relationship with my partner or family	3.09	1.59
Taking care of my baby	3.16	1.71
Taking care of my own needs	3.94	1.75
Dealing with household routines and tasks	4.11	1.73

To determine whether there was a difference in the aspects expected to be more challenging and those found to be so, individual item scores on the antenatal and postnatal versions of the 50-item NMQ were compared. In general, expectation and experience scores corresponded. Nine items were common to the top 10 expected and top 10 actual most difficult to manage items (Table 3.06). The exceptions were not having enough money for non-essential items or services (expected; $M = 4.06$, $SD =$

1.74) and returning to my normal physical self within a few months (actual; *M* = 3.71, *SD* = 1.76).

Table 3.06

Means and Standard Deviations for Motherhood Items Common to Top 10 Expected and Actual Most Difficult to Manage

	Antenatal		Postnatal	
NMQ item	*M*	*SD*	*M*	*SD*
My baby having colic	4.89	1.54	4.28	1.82
My baby crying for long periods of time	4.83	1.64	4.10	1.80
Experiencing a lack of sleep	4.70	1.50	3.70	1.61
Being tired and fatigued	4.48	1.41	3.73	1.68
My baby being difficult to settle	4.47	1.42	3.82	1.65
Having sore and/or cracked nipples from breastfeeding	4.42	1.61	3.61	1.95
My sleep being interrupted	4.37	1.62	3.61	1.72
My baby sometimes being distressed	4.18	1.47	3.76	1.64
Finding time to shower, clean, cook, wash clothes	4.01	1.37	3.73	1.58

Note. NMQ = New Motherhood Questionnaire.

These results show that the greatest challenges in day-to-day life were aspects of baby care, particularly a distressed or unwell infant, along with tiredness and finding time for household tasks, consistent with previous research into individual infant-related stressors (Akman et al., 2006; Britton, 2011; Shakespeare et al., 2004). Mean scores per item across all items in the postnatal NMQ indicated that in general, new mothers found caring for a new baby reasonably easy. Not surprisingly, the easiest to manage items

related almost exclusively to enjoyable activities with baby, and did not differ greatly from the expected top 10 easiest to manage, with 8 items common to the expected and actual top 10. Women were able to predict with reasonable accuracy the type of aspects of motherhood likely to be the easiest and the most challenging, even if there was a discrepancy in how easy or hard they would be to manage.

As previously mentioned, a "not applicable" option was provided for each item in the motherhood scale. It was assumed that a "not applicable" selection *antenatally* reflected an expectation that this item would not be experienced, and that a "not applicable" selection *postnatally* reflected that it had not been experienced. Thus, the number of "not applicable" responses per item provided information about the proportion of women who anticipated and experienced each item. For the antenatal expectations NMQ, very few women selected "not applicable" for each individual item, with a maximum of 6% on any one item, except for bottle-feeding at 28%, reflecting possibly the one item where a decision prior to childbirth may have been made (i.e., to breastfeed). In comparison, on the postnatal experience NMQ "not applicable" responses were more common, reflecting that there were some aspects not experienced by as many women as they expected. Table 3.07 summarises those items for which "not applicable" was indicated more than 10% on the postnatal measure, with the corresponding "not applicable" rate per item on the antenatal measure. Similar percentages were found if the data used were only from those participants who provided both pre and post scores.

Table 3.07

Percentage of Participants Rating "Not Applicable" > 10% on Motherhood Experience Items and the Corresponding Percentage on Expectation Items

NMQ item	Experience percentage "not applicable" rating (N = 136)	Expectation percentage "not applicable" rating (N = 173)
My baby having colic	52	3
Bottle feeding my baby	51	28
My baby having a nappy rash or cold	40	2
Having sore and/or cracked nipples from breastfeeding	32	3
Not having enough money for non-essential items or services	24	4
Having more periods of boredom	18	6
My baby crying for long periods	14	2

Note. NMQ = New Motherhood Questionnaire.

Only half the sample experienced a baby with colic, two-thirds a baby with a rash or cold, and one-third had sore or cracked nipples from breastfeeding, even though almost all provided an expectation rating for these occurrences. These differences reflect the unpredictable and uncontrollable nature of specific aspects of the motherhood experience.

Rates of depression and anxiety. Clinical cut-offs for depression and anxiety were ≥ 13 for the EPDS (Grant et al., 2008; Lanes, Kuk, & Tamin, 2011; Matthey, 2011; Matthey et al., 2006; Micali, Simonoff, & Treasure, 2011; Reck et al., 2008) and > 45 for the STAI-T (Austin et al., 2007; Moss et al., 2009; Skouteris et al., 2009). As detailed in

Table 3.08, the rate of postnatal depression was 11%, comparable to rates in the general postpartum population of 10-15% (Leahy-Warren & McCarthy, 2007; O'Hara & Swain, 1996).

Table 3.08

Percentage of Participants With Clinical Levels of Antenatal/Postnatal Depression and Anxiety (N = 136)

	Percentage with clinical depression	Percentage with clinical anxiety
Antenatal overall	12.5	17.8
Postnatal overall	11.0	14.1
Antenatal only	9.6	9.6
Postnatal only	8.1	5.9
Antenatal + Postnatal	2.9	8.2
Neither	79.4	76.3

Note. Clinical depression: EPDS ≥ 13, Clinical anxiety: STAI-T > 45.

Similarly consistent, the rate of postpartum anxiety was 14% (Austin et al., 2010; Miller et al., 2006; Wenzel et al., 2005). More than three quarters of the sample did not experience clinical levels of depression or anxiety in the third trimester or in the first two months after the birth of their first baby. Chi square analyses indicated that the percentage of women who experienced depression (13%) in the lead-up to childbirth was similar to that in the early weeks following childbirth (11%), $\chi^2(1, N = 136) = 3.09$, $p = .08$, $\varphi = .15$. In contrast, the rate of anxiety was significantly higher during the antenatal period (18%) than during the postnatal period (14%), $\chi^2(1, N = 136) = 24.35$, $p < .001$, with a medium effect size, $\varphi = .43$. This might reflect the fact that the prelude to the birth of a first child is a time of concern for many women, who may be worried about the childbirth experience itself, or about having a healthy baby (Alipour et al., 2011; Austin et al., 2007), or about the unknown experience of being a mother. Indeed,

10% of women in this study experienced depression or anxiety only antenatally and recovered once the antenatal period, childbirth, and accompanying concerns were past (Table 3.08). A smaller but nonetheless meaningful percentage of women did not experience antenatal depression, but did experience depression (8%) in the postpartum period, and likewise for anxiety (6%).

Motherhood Experience and Postpartum Adjustment

The focus of this study was the relationship between motherhood experience and postpartum adjustment. Consistent with Hypothesis 1, Pearson correlation analyses found a strong positive relationship between difficulty of managing motherhood experience and depression and anxiety, and a strong negative relationship between difficulty of managing and well-being (Table 3.09). Difficulty of managing motherhood experience was also negatively related to maternal self-efficacy.

Table 3.09

Correlation Matrix of Postpartum Variables (N = 136)

Variable	Motherhood experience	Depression	Anxiety	Well- being	Social support
Depression	.60***	_			
Anxiety	.67***	.84***	_		
Well-being	-.72***	-.75***	-.84***	_	
Social Support	-.34***	-.23**	-.32***	.36***	_
Self-efficacy	-.77***	-.66***	-.75***	.72***	.22*

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

However, given the likely bi-directional nature of relationships between motherhood and postnatal mood, it could not be determined from the correlations whether experience actually influenced postpartum adjustment. In an effort to shed some light on this, relationships between motherhood and mood variables pre and post childbirth (Tables 3.09 and 3.10) were considered, as well as relationships between mood variables and motherhood variables across childbirth (Figure 3.02). Differences in mood/motherhood relationships antenatally and postnatally might indicate variation in the effect of the independent variable depending on the stability of the dependent variable across childbirth. As shown in Figure 3.02 the relationship postnatally

Table 3.10

Correlation Matrix of Antenatal Variables (N = 173)

Variable	Motherhood expectations	Depression	Anxiety	Well- being	Social support
Depression	.37***	_			
Anxiety	.44***	.85***	_		
Well-being	-.40***	-.70***	-.81***	_	
Social Support	-.23**	-.39***	-.45***	.44***	_
Self-efficacy	-.69***	-.38***	-.45***	.38***	.10

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

between experience and adjustment was stronger than antenatally between expectations and adjustment. While this might suggest experience is a significant factor in postpartum mood, it is noted that antenatal and postpartum adjustment scores were strongly correlated with one another. So, from the bivariate correlations, antenatal

adjustment is a fairly strong predictor of postpartum adjustment, consistent with previous research (e.g., Barnett & Parker, 1986; Beck, 2001; Bergant, Heim, & Illmensee, 1999; Heron et al., 2004; Matthey et al., 2003; Milgrom et al., 2008), and not necessarily less than experience. Thus, controlling for adjustment might shed some more light in assessing the effect of motherhood experience on adjustment.

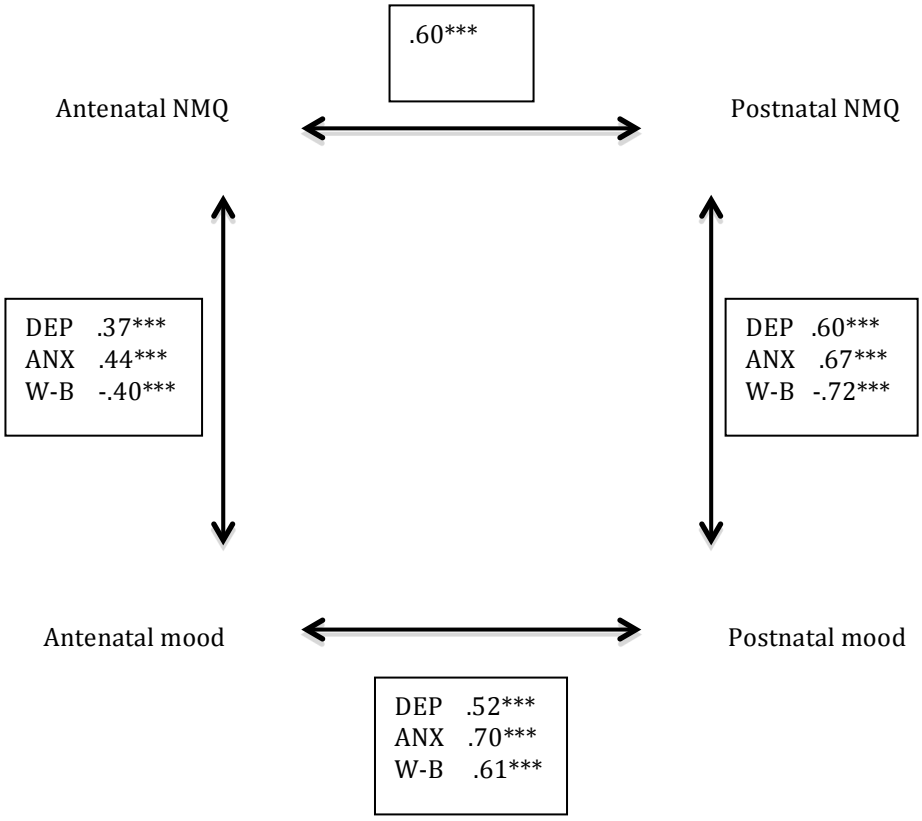

Figure 3.02. Correlations of motherhood expectations (Antenatal NMQ) and experience (Postnatal NMQ), with antenatal and postnatal depression (DEP), anxiety (ANX) and well-being (W-B).

Note. NMQ = New Motherhood Questionnaire. ***$p < .001$.

The strong correlations between depression, anxiety and well-being at both time points did imply some redundancy among the adjustment measures. Despite this, they were analysed separately in accordance with previous studies (Matthey et al., 2003;

McMahon et al., 2001; Rallis, Skouteris, McCabe, & Milgrom, 2014; Whisman, Davila, & Goodman, 2011) rather than being combined into one measure of adjustment. This decision in part reflected a desire not to continue the trend of less research attention to perinatal anxiety than depression. Further, the strong correlations suggest that maladjustment comprises a *combination* of feelings and behaviours, rather than those specific to one condition, such as depression or anxiety, and is consistent with well-established findings that depression and anxiety often co-occur (Judd et al., 1998; Maser & Cloninger, 1990; Massion et al., 1993; Matthey et al., 2003; Sanderson et al., 1990; Sartorius et al., 1996). Results of this study reflected just this; 67% of women suffering clinical postnatal anxiety or depression experienced comorbid postnatal depression or anxiety. The rate of comorbid clinical depression and anxiety in the sample was 10.5% in the lead-up to childbirth and 8.8% at 6 weeks postpartum, consistent with a prospective study of postpartum adjustment by Grant et al. (2008; $N = 100$).

Hypothesis 2 predicted that after controlling for antenatal mood and expectations of motherhood, difficulty of managing motherhood experience would predict postnatal psychological well-being. Three hierarchical multiple regression analyses (HMRA) tested the effects of motherhood experience on each outcome measure after controlling for antenatal scores on that measure and motherhood expectations. For each HMRA, antenatal mood and expectations of motherhood were entered in Step 1 and motherhood experience was entered in Step 2 (Table 3.11).

Table 3.11

Hierarchical Multiple Regression Predicting Postpartum Adjustment Variables from Motherhood Experience after Controlling for Antenatal Scores and Expectations of Motherhood (N = 136)

Step and predictor variable		ΔR^2	β	*B*	*SE*
		Dependent variable: Postpartum depression			
1	Antenatal depression	.291***	.464***	.449	.078
	Motherhood expectations		.142	.769	.434
2	Antenatal depression	.170***	.357***	.345	.070
	Motherhood expectations		-.134	-.721	.445
	Motherhood experience		.531***	2.522	.391
Step and predictor variable		ΔR^2	β	*B*	*SE*
		Dependent variable: Postpartum anxiety			
1	Antenatal anxiety	.496***	.661***	.668	.071
	Motherhood expectations		.082	.949	.819
2	Antenatal anxiety	.150***	.534***	.540	.062
	Motherhood expectations		-.161*	-1.876	.786
	Motherhood experience		.505***	5.160	.691
Step and predictor variable		ΔR^2	β	*B*	*SE*
		Dependent variable: Postpartum well-being			
1	Antenatal well-being	.391***	.538***	.586	.082
	Motherhood expectations		-.161*	-.112	.053
2	Antenatal well-being	.239***	.375***	.409	.067
	Motherhood expectations		.154*	.108	.048
	Motherhood experience		-.640***	-.394	.043

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

Motherhood experience explained 17% additional variance in postpartum depression, $\Delta R^2 = .170$, $\Delta F(1, 132) = 41.56$, $p < .001$, 15% in postpartum anxiety, $\Delta R^2 = .150$, $\Delta F(1, 132) = 55.79$, $p < .001$, and 24% in postpartum well-being, $\Delta R^2 = .239$, $\Delta F(1, 132) = 85.08$, $p < .001$. Thus, the hypothesis was supported.

The regression findings also revealed that antenatal scores on each adjustment variable together with antenatal expectations accounted for 29%, 50%, and 39% of variance in postnatal depression, anxiety and well-being respectively. To understand the role of history in relation to perinatal adjustment and to expectations and experience of motherhood, women were categorised on the basis of yes and no responses in the antenatal survey to having a previous history of each of depression, anxiety and other psychological difficulties. More than 70% of the sample reported no history of depression and nearly two thirds reported no history of anxiety. To test the effect of history on adjustment both antenatally and postnatally, t-tests compared mean scores on the adjustment variables between women with and without a history of depression or anxiety (Table 3.12). On average, at both time points, women with a history scored higher on measures of depression and anxiety than those without, with a moderate effect size. Similarly, those with a history of anxiety both *expected* and *found* motherhood to be a bit harder than those without, but no such difference was evident in relation to a history of depression. Thus, while a self-reported history of anxiety or depression seemed to have an effect on perinatal psychological functioning, a history of anxiety is also likely to impact expectations and experience of motherhood.

Table 3.12

Means (and Standard Deviations) of Antenatal and Postnatal Scores on Measures of Depression, Anxiety and Motherhood for Women With and Without History of Depression and Anxiety, With Significant Differences and Effect Sizes

Scale	Depression			Anxiety		
	History	No history	*d*	History	No history	*d*
	(*n* = 48)	(*n* = 123)		(*n* = 60)	(*n* = 111)	
Antenatal EPDS	10.12 (5.14)	6.55 (4.05)	0.77***	9.06 (4.50)	6.74 (4.55)	0.51**
Antenatal STAI-T	41.46 (11.01)	33.83 (7.79)	0.80***	39.86 (10.46)	33.88 (8.12)	0.64***
Antenatal NMQ	3.49 (.91)	3.23 (.83)	0.30	3.57 (.82)	3.16 (.85)	0.49**
	(*n* = 35)	(*n* = 101)		(*n* = 45)	(*n* = 91)	
Postnatal EPDS	9.40 (5.71)	5.55 (3.72)	0.80***	7.94 (4.93)	5.85 (4.32)	0.45*
Postnatal STAI-T	39.56 (12.41)	31.77 (8.07)	0.74***	37.20 (10.80)	32.08 (9.07)	0.51**
Postnatal NMQ	3.12 (1.05)	2.77 (.93)	0.35	3.19 (1.06)	2.70 (.89)	0.50**

Note. NMQ = New Motherhood Questionnaire; EPDS = Edinburgh Postnatal Depression Scale; STAI–T = State-Trait Anxiety Inventory Trait Subscale. *$p < .05$, **$p < .01$, ***$p < .001$.

To determine the relative frequency of previous and de novo cases of psychological difficulties, chi-square analyses tested differences in rates of depression and anxiety both antenatally and postnatally, according to self-reported history. As shown in Table 3.13, a higher percentage of women with a previous than no history experienced antenatal depression, $\chi^2(1, N = 136) = 11.13$, $p = .001$, with a small effect

size, φ = .29, and similarly for antenatal anxiety, $\chi^2(1, N = 136) = 7.26$, $p = .007$, φ = .23. The same pattern was evident for postnatal depression, $\chi^2(1, N = 136) = 14.78$, $p < .001$, with a medium effect size, φ = .33, and postnatal anxiety $\chi^2(1, N = 136) = 9.40$, $p = .002$, with a small effect size, φ = .26. Of those women with no reported history of depression, 12% experienced depression for the first time before and/or after childbirth, and for anxiety, it was nearer 20%. De novo clinical depression occurred in the postpartum for 4% of women, with a similar percentage for de novo anxiety in the postpartum.

Table 3.13

For Participants With and Without Previous History, Percentage With Clinical Levels of Antenatal and Postnatal Depression and Anxiety (N = 136)

	Clinical depression		Clinical anxiety	
	History *(n = 35)*	No history *(n = 101)*	History *(n = 44)*	No history *(n = 91)*
Antenatal Overall	28.6	6.9	29.5	12.1
Postnatal Overall	28.6	5.0	27.3	7.7
Antenatal Only	20.0	5.9	13.6	7.7
Postnatal Only	20.0	4.0	11.4	3.3
Antenatal + Postnatal	8.6	1.0	15.9	4.4
Neither	51.4	89.1	59.1	84.6

Note. Clinical depression/anxiety determined by EPDS ≥ 13, STAI-T > 45.

Motherhood Expectations-Experience Discrepancy and Postpartum Adjustment

Hypothesis 3 predicted a relationship between negative expectations-experience discrepancy and poorer postpartum psychological well-being. Correlation analyses found moderate relationships between expectations-experience discrepancy scores and indices of postpartum adjustment (Table 3.14). Higher discrepancy scores were

associated with lower depression and anxiety scores and with higher well-being scores. That is, the more women found motherhood to be better than they expected, the lower their symptoms of depression and anxiety.

Table 3.14

Postpartum Correlation Matrix Including Motherhood Expectations-Experience Discrepancy (N = 136)

Variable	Motherhood expectations-experience discrepancy	Depression	Anxiety	Well-being	Social support
Depression	-.36***	_			
Anxiety	-.37***	.84***	_		
Well-being	.44***	-.75***	-.84***	_	
Social Support	.16	-.23**	-.32***	.36***	_
Self-efficacy	.44***	-.66***	-.75***	.72***	.22*

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

Hypothesis 4 predicted that after controlling for antenatal mood, the expectations-experience discrepancy would explain additional variance in postpartum psychological well-being. Similar to the analyses of experience and adjustment, three hierarchical multiple regression analyses were conducted. The effects of expectations-experience discrepancy on each outcome measure were tested after controlling for antenatal scores on that measure (Table 3.15).

Table 3.15

Hierarchical Multiple Regression Predicting Postpartum Adjustment Variables from Motherhood Expectations-Experience Discrepancy after Controlling for Antenatal Scores (N = 136)

Step and predictor variable		ΔR^2	β	*B*	*SE*
		Dependent variable: Postpartum depression			
1	Antenatal depression	.274***	.524***	.507	.071
2	Antenatal depression	.109***	.504***	.488	.066
	Motherhood expectations-experience discrepancy		-.330***	-1.860	.384
Step and predictor variable		ΔR^2	β	*B*	*SE*
		Dependent variable: Postpartum anxiety			
1	Antenatal anxiety	.491***	.701***	.709	.062
2	Antenatal anxiety	.104***	.679***	.686	.056
	Motherhood expectations-experience discrepancy		-.324***	-3.923	.670
Step and predictor variable		ΔR^2	β	*B*	*SE*
		Dependent variable: Postpartum well-being			
1	Antenatal well-being	.371***	.609***	.664	.075
2	Antenatal well-being	.148***	.571***	.622	.066
	Motherhood expectations-experience discrepancy		.387***	.283	.044

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

The discrepancy between antenatal expectations and postnatal experience of motherhood explained additional variance in each of postpartum depression, $\Delta R^2 = .109$, $\Delta F(1, 133) = 23.43$, $p < .001$, anxiety, $\Delta R^2 = .104$, $\Delta F(1, 133) = 34.27$, $p < .001$ and well-being, $\Delta R^2 = .148$, $\Delta F(1, 133) = 40.96$, $p < .001$. The hypothesis was therefore supported. Relative to the variance explained by antenatal mood (27% depression, 49% anxiety, 37% well-being) the expectations-experience discrepancy accounted for smaller, but nonetheless meaningful, variance in postpartum adjustment variables (11% depression,

10% anxiety, 15% well-being). Further, relative to the variance explained by the motherhood experience, and as suggested by the correlations, the expectations-experience discrepancy explained less additional variance and was therefore a weaker predictor of postpartum adjustment.

Mediation by Maternal Self-efficacy

Hypothesis 5 predicted that the relationship between motherhood experience and postpartum adjustment would be mediated by maternal self-efficacy. The Baron and Kenny (1986) procedure for testing mediation was followed and their preconditions for mediation were met as indicated by the correlations. To test the hypothesis of motherhood experience on postpartum adjustment, hierarchical multiple regressions were conducted, with antenatal mood and expectations in Step 1, maternal self-efficacy in Step 2, and motherhood experience in Step 3. In Step 3, the effect of experience on postpartum depression, $\Delta R^2 = .01, \Delta F(1, 131) = 3.02$, $p = .085$, and anxiety, $\Delta R^2 = .006, \Delta F(1, 131) = 2.92$, $p = .09$, was no longer significant after controlling for maternal self-efficacy, indicating full mediation. In relation to postpartum well-being, the relationship with experience was weaker, but remained significant after the introduction of maternal self-efficacy, $\Delta R^2 = .047, \Delta F(1, 131) = 19.14$, $p < .001$, indicating partial mediation.

As recommended for small samples, bootstrapping analyses tested the statistical significance of the indirect effect (Preacher & Hayes, 2004) of experience on adjustment variables. Results indicated a significant indirect effect for each adjustment measure (Table 3.16). Thus the hypothesis was supported.

Table 3.16

Results of Bootstrapping Analyses re Mediation by Maternal Self-efficacy of Motherhood Experience on Postpartum Adjustment Variables, Based on 5000 Samples and 95% Confidence Interval (N = 136), with Standardised Regression Coefficients

Outcome variable		*B*	*LLCI*	*ULCI*	β
Postnatal Depression					
	TE	2.52 (.39)***	1.75	3.30	.53
	DE	.85 (.49)	-.12	1.82	.18
	IE	1.67 (.42)	.90	2.54	-.66
Postnatal Anxiety					
	TE	5.16 (.69)***	3.79	6.53	.51
	DE	1.35 (.79)	-.21	2.91	.13
	IE	3.81 (.73)	2.47	5.34	-.75
Postnatal Well-being					
	TE	-.39 (.04)***	-.48	-.31	-.64
	DE	-.24 (.05)***	-.34	-.13	-.38
	IE	-.16 (.04)	-.25	-.08	.72

Note. LLCI = Lower level confidence interval, *ULCI* = Upper level confidence interval, *TE* = Total Effect, *DE* = Direct Effect, *IE* = Indirect Effect, Standard error appear in parentheses. *$p < .05$, **$p < .01$, ***$p < .001$.

Discussion

The primary aim of Study 1 was to investigate whether the experience of first-time motherhood predicted postpartum adjustment, alone or in contrast to antenatal expectations. The study also sought to investigate the role of maternal self-efficacy as a mediator of the relationship between experience and adjustment.

First-time Motherhood Experience and Postpartum Adjustment

On average, the women assessed in Study 1 found motherhood experience easier than harder to manage, indicated by mean scores on the experience measure. They also generally found motherhood easier than they had expected, consistent with previous research (Green & Kafetsios, 1997; Harwood et al., 2007). Motherhood experience was strongly associated with the three measures of postpartum adjustment, and explained additional variance in each after controlling for antenatal adjustment. This implies that events occurring in the postpartum play a significant role in first-time mothers' psychological functioning. This is further supported by the stronger correlation between experience and adjustment postnatally than antenatally. The findings also imply that concurrent motherhood events are more relevant to adjustment than those imagined in the future. Nonetheless, the study design precludes any firm conclusions about cause and effect, as discussed in detail later in relation to the overall set of results.

In determining the broader motherhood experience itself as a potentially stressful life event, this study extended previous research findings of specific aspects of motherhood as stressful, including colic (Akman et al., 2006; Vik et al., 2009), breastfeeding (Shakespeare et al., 2004) and infant temperament (Britton, 2011; Hopkins et al., 1987; Mantymaa et al., 2006; McMahon et al., 2001). That motherhood experience may act as a stressor for first-time mothers, predicting their adjustment, is

consistent with theories regarding the relationship of stress to psychopathology. Specifically, it fits with the diathesis-stress model (Beck, 1967; Brown et al., 1987; Ingram & Luxton, 2005; Lewinsohn et al., 1985), whereby psychological distress arises as a result of a predisposition or vulnerability together with life stressors. In this study, given the small proportion of de novo cases of depression and anxiety postpartum, vulnerability would likely be a function or previous psychological difficulties, either antenatally or pre-pregnancy. Stressful life events have been consistently linked to the development of psychopathology generally (Bebbington, Sturt, Tennant, & Hurry, 1984; Blazer, Hughes, & George, 1987; Brown & Harris, 1978; Costello, 1982; Finlay-Jones & Brown, 1981; Hammen, 2005; Kendler et al., 1998; Kendler, Hettema, Butera, Gardner, & Prescott, 2003; Kessler, 1997; Mazure, 1998; Monroe & Hadjiyannakis, 2002; Paykel, 1978, 1994, 2003; Surtees et al., 1986; Tennant, 2002) and in the postpartum (Affonso et al., 1991; Beck, 2001; Johnstone et al., 2001; O'Hara et al., 1984, 1991; Paykel et al., 1980; Robertson et al., 2003, 2004; Shimizu & Kaplan, 1987; Whiffen, 1988).

The relationship in this study between a broad measure of experience and postpartum adjustment is consistent with and extends previous findings. A *combination* of child-related stressors (Cutrona, 1983, 1984; O'Hara et al., 1984; Terry, 1991b, 1994) and concerns about infant-caretaking (Høivik et al., 2013) have been shown to be negatively related to postnatal psychological functioning. Motherhood is a complex experience, with the combination of demands, activities and life changes unique to each mother. The variation between mothers in motherhood experience was highlighted by percentages of "not applicable" ratings on some postnatal NMQ items, which implied the item was not experienced. Given the broad experience measure, the findings of this research may be relevant to a greater number of mothers than the subset impacted by individual infant-related stressors.

Maternal Self-efficacy as a Mediator

As predicted, maternal self-efficacy mediated the relationship between motherhood experience and postpartum depression and anxiety. This is consistent with previous findings of self-efficacy as a mediator between risk factors and postpartum depression, including infant temperament (Cutrona & Troutman, 1986), social support (Cutrona & Troutman, 1986; Haslam et al., 2006) and stressful life events (Maciejewski et al., 2000). As with the emphasis on postnatal depression more widely, greater attention has been given to the relationship of maternal self-efficacy to postnatal depression than to postnatal anxiety. Very few studies have investigated direct relationships between maternal self-efficacy and postnatal anxiety, or self-efficacy as a mediator between a stressor and postnatal anxiety. For example, in a recent review of maternal self-efficacy in the postpartum period (Leahy-Warren & McCarthy, 2011), postnatal anxiety was examined in only one (Porter & Hsu, 2003) of the eight studies analysed. As found in the current study, maternal self-efficacy was negatively correlated to postnatal anxiety (Kohlhoff & Barnett, 2013; Porter & Hsu, 2003), reflecting the logic that ease or difficulty managing with a new baby will likely promote or undermine self-efficacy and subsequently reduce or increase anxiety about ability to manage. The issue of cause and effect in this relationship is cloudy nonetheless.

In his theory of self-efficacy, Bandura (1994) identified "enactive attainment", that is, the experience of mastery, as the most important factor determining self-efficacy, stating "successes build a robust belief…..failures undermine it" (p. 72). When considered in the context of motherhood experience, this provides some insight into the possible mechanism operating between experience and adjustment. New mothers' self-efficacy may be negatively affected by difficulty managing, or *mastering the experience*, with a new baby, and conversely, promoted by ease in this situation. Struggling to

manage may challenge mothers' beliefs about their competence, provoking self-doubt, and decreased self-confidence and concerns about their capacity to cope and care for their baby, with this in turn affecting their mood (Bandura & Locke, 2003).

Expectations-Experience Discrepancy and Postpartum Adjustment

In accordance with Harwood et al.'s (2007) results, first-time mothers generally found motherhood easier to manage than they expected, with lower ratings of difficulty managing the early weeks with a new baby postnatally than antenatally, with a medium effect size. In similar accordance, adjustment was generally better postnatally than antenatally. This was also consistent with previous findings of the trajectory of depression and anxiety pre to post childbirth (Evans et al., 2001; Figueiredo & Conde, 2011; Grant et al., 2008; Green & Murray, 1994; Heron et al., 2004; Kinsella & Monk, 2009; Moss et al., 2009; Ross et al., 2003).

Just as experience predicted adjustment, so too did the discrepancy between expectations and experience. Thus, as has been proposed and found before (Harwood et al., 2007), what women expect about motherhood compared to their actual experience may be a factor in their postnatal psychological functioning. The discrepancy was reflected in a positive or negative score, indicating experience was better or worse than expected, respectively. A moderate negative relationship was found between the discrepancy score and postpartum adjustment and the discrepancy explained additional variance after controlling for antenatal scores. This finding suggests that when the experience of motherhood is more difficult than expected, this negative discrepancy may act as a stressor.

While unrealistic antenatal expectations of motherhood may develop in some women, it is of note that in this study, mean expectations of motherhood were neither

particularly optimistic nor pessimistic, and negative discrepancies were relatively uncommon (25% of the sample). Indeed, there was general correspondence between the top 10 expected and actual most difficult to manage items. Harwood et al. (2007) suggested that negative discrepancies may occur because women develop overly optimistic expectations about motherhood, which are not then matched by their experience. As noted earlier, this may relate to social and cultural ideals (Eyer, 1994; Lee, 1997, 1998) and idealised media portrayals (Douglas & Michaels, 2005; Wickham, 2004; Winson, 2009). Discrepancies may also be a result of insufficient or inaccurate information. That is, information from social supports and/or antenatal education programmes may not have adequately prepared women expecting their first child for what is to come; either in skill development or in understanding what are common and normal occurrences and patterns for new babies and new mothers, leaving them psychologically and practically underprepared (Barnes et al., 2008). Qualitative research has identified unexpected challenges or inadequate preparation as sources of difficulty and report that women indicated they would have benefitted from being better prepared and having more realistic expectations (Beck, 2002; Tammentie et al., 2004; Young, 2008).

This is distinct from the understandable antenatal concerns of some women about childbirth and mothering, particularly for those who have not experienced either. While a pessimistic outlook may improve the likelihood of a motherhood experience more positive than expected, it should be noted that the antenatal correlations between expectations and mood variables in this study imply that unduly negative or trepidatious expectations may be accompanied by poorer antenatal psychological functioning. Of course there are other factors operating during the lead-up to childbirth, with previous research for example finding a relationship between antenatal anxiety

and fear of childbirth (Alipour et al., 2011; Johnson & Slade, 2003; Spice et al., 2009). Thus, expectations and antenatal mood may have been impacted by anxiety regarding childbirth, along with worries about the prospect of caring for a new baby.

As with experience, the finding that discrepancy predicted adjustment fits with the diathesis-stress model (Beck, 1967; Brown et al., 1987; Ingram & Luxton, 2005; Lewinsohn et al., 1985), where previous history functions as the vulnerability and discrepancy as the stressor. The relationship between discrepancy and adjustment is also consistent with expectancy violation theory (EVT; Burgoon, 1978), which explicitly takes account of discrepancy, whether positive or negative, and adjustment.

Despite the finding of a relationship between discrepancy and adjustment, the interpretation of this is limited because it is uncertain specifically what discrepancy was being measured. The antenatal measure assessed an imagined, novel event in the future, informed by social commentary, the experience of others known to the mother, media and culture. This measure could not take account of whether individual aspects of motherhood would actually occur (like colic or difficulty breastfeeding), and if so, how often, for how long, or at what degree of difficulty. By contrast, the postnatal measure assessed actual experience, and inevitably incorporated incidence, frequency, duration and severity of specific components of being a new mother. Thus, whilst the discrepancy was clearly having an effect, it is not entirely clear why. For instance, it could be that predicted events occurred and were more difficult than expected, or it could be that events occurred that were not anticipated. In spite of this, there is evidence in favour of a pre/post comparison to determine discrepancy, rather than a single retrospective measure. Study 1 included a retrospective measure in the postnatal survey, which was moderately negatively correlated with the pre/post discrepancy score, and highly correlated with experience. This suggests that the retrospective

measure reflected women's current experience rather than the difference between what they had expected antenatally and their postnatal experience. This is consistent with known limitations of retrospective self-report measures, including memory bias (Schacter, 1999).

History of Previous Psychological Difficulties

In the context of new motherhood, one form of a previous history of psychological difficulties is depression and anxiety antenatally, and another is depression or anxiety pre-pregnancy. Consistent with previous studies (Cooper & Murray, 1995; Heron et al., 2004; Phillips et al., 2010; Reck et al., 2008), for those women with no self-reported history, only a small percentage of de novo cases of depression and anxiety were detected in the postpartum period (based on cut-off scores). For those women with a self-reported history of depression or anxiety, approximately one quarter experienced a repeat or a continuation, with clinical levels of depression or anxiety in the first few weeks after childbirth. Furthermore, mean scores for depression and anxiety indicated that women with a history experienced greater levels of distress than those with no history. This suggests that women with previous experience of anxiety and/or depression are at greater risk of emotional difficulties during the postpartum and is consistent with the body of literature regarding previous psychopathology as a well-established predictor of future psychological difficulties generally (Dobson & Dozois, 2011) and in the postpartum population (Beck, 2001; O'Hara & Swain, 1996; Robertson et al., 2003, 2004). In the diathesis-stress model proposed in this research to explain the experience-adjustment relationship, previous history almost certainly acts as a vulnerability component. That antenatal depression and anxiety scores predicted postnatal also corresponds with previous history as a

vulnerability factor.

Where continuation of depression or anxiety antenatally to postnatally occurs, the stability in psychological functioning is not necessarily reflective of stability in stressor. That is, the nature of the stressor likely changes pre to post childbirth. This is supported in the trajectory of anxiety and depression antenatally to postnatally shown in this and other studies, where symptoms persist pre to post, albeit at lower levels postnatally (Figueiredo & Conde, 2011; Grant et al., 2008; Kinsella & Monk, 2009). Antenatally, stressors may concern the impending childbirth event and the health of the baby (Alipour et al., 2011; Evans et al., 2001; Figueiredo & Conde, 2011; Heron et al., 2004; Johnson & Slade, 2003; Ross et al., 2003; Spice et al., 2009). These issues are ipso facto resolved with childbirth and may be replaced by postnatal stressors, including current experience with a new baby. Thus, in the context of a continuation of depression or anxiety antenatally to postnatally, the relationships identified between postpartum adjustment and each of experience and discrepancy fit with a diathesis-stress model in which current environmental stressors are operating (Beck, 1967; Brown et al., 1987; Ingram & Luxton, 2005; Lewinsohn et al., 1985; Mazure, 1998).

Cause and Effect

The above explanation of the results notwithstanding, the relationships between experience and adjustment and discrepancy and adjustment do raise the issue of cause and effect. The contemporaneous measurement of mood and experience variables in Study 1 does not allow firm conclusions about causality. Although day-to-day stressors are very likely to affect psychological well-being, it is also likely that well-being influences the way in which motherhood is perceived and therefore responses to the experience measure (Milgrom, Westley, & McCloud, 1995; Murray & Cooper, 1997;

Rowe, Fisher & Loh, 2008). In the context of this study, this means the participants' ratings of the ease or difficulty of managing various aspects of motherhood could be impacted by how they are feeling psychologically. It is well established in more general populations that depressed mood or anxiety influences perceptions and interpretations of events (Forgas, 1992, 1995, 2002; Fiedler, 2001; Innes-Ker & Niedenthal, 2002; Niedenthal & Setterlund, 1994). Furthermore, Bandura (1989) suggested that dysphoric moods act as a cognitive filter, with the result that information biased towards the negative is perceived and retained in memory. This is supported by findings that mothers with depressive symptoms evaluate their parenting abilities more negatively than mothers without such symptoms (Gross, 1989; Gross, Conrad, Fogg, & Wothke, 1994), as also evidenced in Study 1. A range of other factors unrelated to becoming a mother may influence the emotions of new mothers. For example, the continuation of a pre-existing psychological condition, social supports, health factors and major life events may negatively impact emotional functioning and this may then affect perceptions of motherhood experience. This idea is consistent with the theory of a reciprocal relationship between negative thinking and depressed mood (Teasdale, 1983). Indeed, a study of 367 mothers regressed postnatal depression on parenting stress and vice versa and found each predicted the other (Leigh & Milgrom, 2008).

One obvious method of establishing whether experience is *causal* is to test whether psychological adjustment is improved by interventions that target child-care skills or other potentially stressful elements of the motherhood experience. Some studies have tested this, with indications that improving experience does improve psychological adjustment (Fisher, Wynter, & Rowe, 2010; Milgrom, Schembri, Ericksen, Ross, & Gemmill, 2011).

Investigating *if* and *how* previous experience benefits caring for a new baby, for instance how parity effects motherhood experience and postpartum adjustment, may increase understanding of what improves motherhood experience. This question could not be investigated in data from Study 1, as the sample comprised only primiparous mothers. While a key part of the argument was the novelty of the experience, the primiparous sample restricted conclusions drawn as applicable only to first-time mothers. Consequently, it is uncertain whether it is the experience of caring for any new baby, first or subsequent, that impacts adjustment, or whether is it the novelty of doing it for the first time. If the hypothesis holds that the novelty of demands on first-time mothers imposes extra stress, then higher levels of depression or anxiety might be expected in primiparous than multiparous women. Existing research paints a mixed picture of the relationship between parity and poorer adjustment, with evidence variously provided of a relationship, and no relationship, as follows.

Several meta-analyses (Beck, 2001; O'Hara & Swain, 1996; Robertson et al., 2004) have found no significant association between parity and postnatal depression. Similar findings have resulted from several individual studies, both cross-sectional (Breitkopf et al., 2006; Wenzel et al., 2005; Yelland et al., 2010) and prospective (Oppo et al., 2009; Rubertsson, Wickberg, Gustavsson, & Radestad, 2005; Wickberg & Hwang, 1997). Other studies have, however, found higher rates of depression in multiparous than primiparous women (Figueiredo & Conde, 2011; Grant et al., 2008; Ho-Yen, Bondevik, Eberhard-Gran, & Bjorvatn, 2007; Nielsen et al., 2000; Panthangi, West, Savoy-Moore, Geeta, & Reickert, 2009; Righetti-Veltema, Conne-Perreard, Bousquet, & Manzano, 1998; Segre, O'Hara, Arndt, & Stuart, 2007). A study of 260 couples found higher levels of postnatal depression in multiparous than primiparous mothers at 3 months postpartum (Figueiredo & Conde, 2011). Additionally, in a study of 100 mothers,

multiparous mothers were significantly more likely than primiparous to meet the diagnosis for postnatal depression at 7 months (Grant et al., 2008). By contrast, in a study of 416 women, primiparous were more likely than multiparous mothers to have EPDS scores of at least 10, albeit at 6 weeks postpartum, Adjusted OR 3.1, 95% CI:1.2-9.1 (Eberhard-Gran, Eskild, Tambs, Samuelsen, & Opjordsmoen, 2002). Further, in a prospective study of 33 women pre and post childbirth, postnatal depression was associated with lower parity (Da-Silva, Moraes-Santos, Carvalho, Martins, & Teixeira, 1998).

While relatively less attention has been given to the relationship between parity and postnatal anxiety, there are similarly mixed findings. Studies show a positive relationship with multiparity (Figueiredo & Conde, 2011; Grant et al., 2008; Skari et al., 2002), primiparity (Gameiro, Moura-Ramos, & Canavarro, 2009; Giakoumaki, Vasilaki, Lili, Skouroliakou, & Liosis, 2009; Paul, Downs, Schaefer, Beiler, & Weisman, 2013), and no relationship (Breitkopf et al., 2006; Yelland et al., 2010). For example, while two prospective studies found higher levels of postnatal anxiety in multiparous than primiparous mothers (Figueiredo & Conde, 2011; Grant et al., 2008), another study of 90 mothers found that multiparity predicted psychological distress at 0-4 days after birth, but not at 6 weeks or 6 months postpartum (Skari et al., 2002). Parity predicted the trajectory of postnatal anxiety from 6 weeks to 2 years such that it increased in primiparous mothers and declined in multiparous mothers, albeit with small effect (Dipietro, Costigan, & Sipsma, 2008). On the other hand, a study of 4366 women at 6 months postpartum found no relationship between parity and postnatal anxiety (Yelland et al., 2010).

Methodological differences, such as design, timing of data collection, samples, and measures may explain the inconsistency in these results. To begin with, parity is

often considered as a demographic variable to describe perinatal samples. Other studies compared depressed and non-depressed perinatal populations. The relevant result from these studies was usually a correlation coefficient of the relationship between parity and postnatal depression or anxiety. This contrasts with the fewer studies that compared groups of multiparous and primiparous mothers (Figueiredo & Conde, 2011; Gameiro et al., 2009; Grant et al., 2008). Among the individual studies discussed above, 7 were cross-sectional and 13 prospective, with sample size ranging from 33 to 5262 mothers. Many of the studies were based on a population in one country, with 11 culturally diverse countries thus represented, including USA, Nepal and Switzerland. While the EPDS was most commonly used to measure depressive symptoms, other measures included also the Beck Depression Inventory-II (BDI-II; Beck et al., 1996), the Inventory to Diagnose Depression (IDD; Zimmermann, Coryell, Corenthal, & Wilson, 1986), the Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995), the General Health Questionnaire (GHQ-28; Goldberg & Hillier, 1979) and ICD-9 criteria applied to medical records. Further, the timing of data collection in the postpartum varied considerably, including 2 to 5 days; 4, 6, and 8 weeks; and 6, 8, and 12 months.

Furthermore, the definition of multiparous has varied among studies. In some instances, instead of mothers being categorised as primiparous or multiparous, the number of children was investigated as a predictor. In each of these studies, categorised number of children was positively related to postpartum depression. For example, in a cross sectional study of 426 women in Nepal, mothers of 1-3 and mothers of 4 or more children were compared on symptoms of postnatal depression (Ho-Yen et al., 2007). Similarly, comparisons between mothers of 0, 1-2 and > 2 children were made in a study of 5252 women (Nielsen et al., 2000), and of mothers of 0, 1, 2, and ≥ 3 children in a study of pre and post medical records (Dietz et al., 2007).

Aside from methodological considerations, the inconsistency around any relationship between parity and postnatal psychological distress may reflect the effect of other variables. For example, on the one hand multiparous mothers might find experience easier due to previous learning, but on the other hand, they may experience an overall increase in carer burden and challenges in integrating another person into the existing family structure (Figueiredo & Conde, 2011; Skari et al., 2002), as well as the effect of other factors, such as income, marital status, and occupational status (Segre et al., 2007).

Thus, whether parity plays a role in experience and adjustment merits further investigation. A clearer relationship is evident between parity and maternal self-efficacy and this suggests *how* multiparity might benefit experience. Not surprisingly, multiparity is associated with greater maternal confidence and self-efficacy, as shown in a study of 49 mother-infant pairs followed for 8 months from birth (Zahr, 1991) and similarly in a prospective study of 372 postpartum women in Taiwan (Liu, Chen, Yeh, & Hsieh, 2012). Particularly relevant to the current research are the findings of significant relationships between multiparity and five infant care tasks; feed, burp, diaper, bathe, and hold (Froman & Owen, 1990). In addition, Fish and Stifter (1993) found that parity moderated the relationship between a laboratory measure of infant crying and mothers' level of self-efficacy at 5 months postpartum. It was suggested that multiparous mothers may have interpreted infant crying more positively than primiparous mothers, as a function of their higher confidence levels.

It has been suggested that the effects of parity on maternal self-efficacy are related to infant caretaking experience (Sallinen, Gilles, & Hayes, 2007). Women who have had a child already may have experienced and learned the skill-related aspects of caring for a baby. This may in turn positively impact how well they manage in caring for

each subsequent baby. Some aspects of motherhood are arguably more amenable to learning via experience and thus more likely to be impacted by parity. For example, bathing, dressing, breastfeeding, wrapping and settling a baby are skill-related, while others such as sleep interruption and deprivation, and having less time for oneself are unavoidable and less controllable parts of the experience. There are also other less predictable aspects, such as having a sick or colicky baby. If parity matters in the form of skill development, then multiparous women should experience greater ease in managing the skill-related aspects with a new baby than primiparous mothers.

Thus, Study 2 will test *if* parity has an effect on experience and adjustment by comparing primiparous and multiparous mothers on measures of experience and adjustment. The study will further investigate *how* previous experience might matter, by comparing scores in relation to managing skill-related and less controllable aspects of early motherhood experience for primiparous and multiparous mothers.

Methodological Considerations

Study 1 used a purpose-built measure to assess the overall experience of motherhood. By measuring the impact of a collection rather than individual aspects of motherhood, the results of this study are more reflective of the whole experience of being a new mother, and are arguably applicable to first-time mothers generally rather than only those who experience individual infant-related stressors. Following Harwood et al. (2007), the use of the same measure pre and post to provide a direct comparison of expectations and experience provided an objective measure of discrepancy.

Study 1 was unable to detect meaningful results regarding social support, which is an established predictor of postpartum adjustment. The measure of social support used (Kendler et al., 2005) showed ceiling effects and social support status could not be

investigated as a factor as over 90% of participants in this study were living with their partner. The consequence of this was that social support could not be controlled for in the regression analyses, thus limiting the findings.

Clinical Implications

With the caveat that the issue of cause and effect requires resolution, Study 1's findings suggest that it may be beneficial to acknowledge motherhood as a potentially stressful experience, and include a measure of stresses related to motherhood in the individual assessment of mothers in the clinical setting. Whether or not difficulty managing with a new baby is a cause or a symptom of poor adjustment, acknowledgement and normalising of this seems appropriate. Assessing child-care stress and other stressors in motherhood could provide a straightforward identification method of possible reasons for psychological difficulties in the postpartum.

Additional items of practical importance in the assessment and treatment of women experiencing postpartum distress are that the majority of women experiencing clinical levels of postnatal depression or anxiety in Study 1 had a history of psychological difficulties, and that depression and anxiety were similarly affected by the predictors under investigation.

Summary

In summary, Study 1 identified motherhood experience, alone and in contrast to antenatal expectations, as a predictor of the three indices of postpartum adjustment. The study acknowledges the impact of the wide-ranging motherhood experience on psychological functioning, extending the results of previous studies of individual infant-related stressors and parenting stress. Further, the finding of maternal self-efficacy as a mediator of the relationship between experience and adjustment implies a possible

mechanism, and thus an avenue to target in strategies to improve adjustment.

This study assessed only primiparous mothers, for whom the impact of change and new tasks may be most applicable. The role of parity in relation to experience and adjustment is yet to be investigated. It may be that some specific aspects are amendable to experience, like skill-related activities, while others such as lack of sleep and time for self–care are not.

Chapter 4

Study 2

Overview

The aim of Study 2 was to test the proposition that previous experience caring for a baby would benefit multiparous mothers' subsequent motherhood experience, and their postpartum psychological adjustment. While Study 1 found that motherhood experience predicted adjustment, the sample comprised only primiparous women. Consequently, it could not be determined whether it was the experience of caring for any new baby, first or subsequent, that impacted adjustment, or whether it was the novelty of doing it for the first time. As outlined above, the relationship between parity and adjustment is unclear (Beck, 2001; Breitkopf et al., 2006; Figueiredo & Conde, 2011; Gameiro et al., 2009; Giakoumaki et al., 2009; Grant et al., 2008; Ho-Yen et al., 2007; Nielsen et al., 2000; O'Hara & Swain, 1996; Oppo et al., 2009; Panthangi et al., 2009; Righetti-Veltema et al., 1998; Robertson et al., 2004; Rubertsson et al., 2005; Segre et al., 2007; Skari et al., 2002; Wenzel et al., 2005; Wickberg & Hwang, 1997; Yelland et al., 2010).

That previous motherhood experience benefits subsequent motherhood experience is consistent with the theory of experiential learning. This is the process of learning skills and knowledge from direct experience, or "learning by doing", and then reflecting on it to gauge what is working or failing (Haynes, 2007; Kolb, 1984). The present study focused particularly on the benefit of experience related to skill development. There are many aspects to caring for a new baby; some are skill-related, like bathing, breastfeeding, wrapping and settling a baby, and some are less controllable, such as sleep interruption and deprivation, and having less time for oneself. There are

also less predictable aspects, such as having a sick or colicky baby. It may be that the skill-related aspects are more amenable to learning via experience than less controllable or predictable aspects, and thus may be impacted by parity. It seems reasonable that less controllable or unpredictable aspects of motherhood would be difficult for all mothers to manage irrespective of parity. By contrast, skill-related aspects may be more difficult to mange for first-time than multiparous mothers, given first-time mothers lack of previous experience. In that event, given the expected relationship between difficulty managing and indices of adjustment, it would be anticipated that multiparous women would have greater ease in the skill-related aspects of caring for a new baby, and higher well-being and lower depression and anxiety than primiparous women.

No previous research could be found that has tested whether it is possible or meaningful to distinguish between day-to-day challenges that might be mitigated by experience and those that cannot be. If the findings indicate that differences in experience result in corresponding differences to adjustment, this may clarify the causal direction of the experience adjustment relationship by demonstrating a difference in adjustment *following* a change in experience. Further, findings may impact suggestions for interventions. For example, they may imply benefit in skill development prior to childbirth and/or in education around the less controllable and predictable aspects of motherhood.

Study 2 compared groups of primiparous and multiparous women on measures of experience, maternal self-efficacy and adjustment, in relation to their current baby. Both skill-related and less controllable aspects of experience were assessed, and were collapsed to measure the day-to-day aspects of infant care. As for Study 1, history of psychological difficulties and social support were measured. Social support was

assessed on subscales of importance and support received. While support received was expected to relate to adjustment (Aktan, 2012; Chaaya et al., 2002; Dennis & Ross, 2006; Gjerdingen & Chaloner, 1994; Howell et al., 2006; Leahy-Warren et al., 2011; O'Hara et al., 1983), the importance of support was expected to relate to perceptions of ease of difficulty managing.

Hypotheses

The hypotheses were as follows:

1. The difference between multiparous and primiparous mothers will be greater for skill-related than less controllable aspects of motherhood experience.
2. Self-rated difficulty in managing day-to-day tasks will predict postpartum anxiety and depression symptoms after controlling for psychological history and social support but skills-based aspects will be a stronger predictor of adjustment in first-time mothers than in multiparous mothers.

Method

Participants

Women aged 18 years and over with a baby aged 4 to 16 weeks were invited to participate. Only women who experienced single births were included. Several recruitment strategies were employed. Invitations to participate were emailed to women who participated in Study 1 and had expressed a willingness to be contacted about future research. Participants were also directly recruited via a midwifery group practice that operates in southern metropolitan Adelaide. As part of postpartum care, midwives from this practice visit mothers at home at around 5 weeks postpartum, and during these visits they invited their clients to participate in the study, providing them with the participant information sheet. A targeted media campaign to boost

participation numbers resulted in one newspaper and two online articles about the research. In addition, social media was used to promote community awareness of the study and encourage a word of mouth campaign inviting new mothers to take part.

The sample of 66 women was almost equally divided between first-time mothers and mothers of more than one child. The *primiparous* group comprised 35 mothers and the *multiparous* group comprised 31 (*M* number of children = 2.39, *SD* = .56). The age of youngest baby was similar in the two groups (multiparous *M* = 53 days, *SD* = 16; primiparous *M* = 56, *SD* = 18). Participants were relatively highly qualified, with more than 85% having a TAFE, trade or university qualification. In addition, they were mostly living with their partners and at less than 5%, there were too few un-partnered women to allow any test of its effects. The sample characteristics are in Table 4.01.

Table 4.01

Sample Characteristics (N = 66) for Mothers with Baby Aged 4 to 16 Weeks

	M	*SD*
Age	32.00	4.59
Age of youngest child (weeks)	7.79	2.45
Age of next youngest child (years)	3.21	1.52
Difference in ages of youngest 2 children (years)	3.07	1.53
	n	*%*
Parity		
1	35	53.0
≥ 2	31	47.0
Nationality		
Australian	55	83.30
Other	11	16.7
Educational level		
Year 12	7	12.30
TAFE or trade qualification	13	22.80
University qualification	37	64.90
Living arrangements		
With partner	56	96.6
With parents or siblings	1	1.70
Alone	1	1.70
Employment status (antenatal)		
Employed full-time	28	48.28
Employed part-time	25	43.10
Not working	5	8.62
Childbirth		
Full-term	54	93.10
By caesarean section	22	37.90
With complications	24	41.40

Design

A mixed, 2 (parity: primiparous, multiparous) x 2 (mothering domain: skill-related, less controllable) design was used. Dependent measures were postnatal depression, anxiety and well-being. To control for known risk factors, social support and previous history of psychological difficulties were also assessed. Data were collected by self-report survey (Appendix C) between 4 and 16 weeks postpartum.

Measures

Motherhood experience. A revised version of the New Motherhood Questionnaire from Study 1 was used. Refinement of the original NMQ was completed using data from Study 1, as described below. The objectives were to remove redundant items and ensure skill-related and less controllable aspects of motherhood experience were represented.

Inter-item correlations and item-total statistics were analysed to identify obvious duplicates and items that did not make a meaningful contribution. Inter-item correlations ranged from -.14 to .82 (M = .35) and those > .70 (18 pairs) were selected for further review (Ferketich, 1991; Kline, 1993). One item in each pair could possibly be deleted with the loss of little information, for example "my sleep being interrupted" or "experiencing a lack of sleep" (r = .79). Less obviously similar items that nonetheless correlated strongly, included "losing my independence" and "changes in the relationship with my partner" (r = .65). Twelve items were deleted. Item total correlations were assessed for consistency with other items and 2 items < .30 ("my baby having nappy rash or a cold" and "my baby having colic") were identified as unacceptable (Ferketich, 1991, Kline, 1993; Nunnally & Bernstein, 1994). This may be because a proportion of mothers did not experience these aspects of motherhood. One (colic) was retained,

given its established relationship to postpartum adjustment (Akman et al., 2006; Howell et al., 2006; Vik et al., 2009). Review of the item content for face duplication, verified via inter-item correlation, identified a further 6 items for deletion. In summary, a total of 19 of the original 50 items were deleted (Appendix A, Table A.03), leaving a 31-item scale. Internal reliability results indicated that the scale would not be diminished as a result of the deletions, with little change from the original (Cronbach's $\alpha = .96$) to the 31-item version (Cronbach's $\alpha = .94$).

To ensure skill-related and less controllable aspects of motherhood experience were represented, the 31-item scale was further adjusted. The objective was to ensure the scale could assess these in number and balance. Three items marked for deletion ("experiencing a lack of sleep", "my baby being difficult to settle", and "having sore and/or cracked nipples from breastfeeding") were retained given their established relationships to postpartum adjustment. Three items were added ("having a fussy baby", "learning to burp my baby", and "having an unwell baby, with a minor ailment like a rash or a cold") as being representative of early mothering and not captured by other items. The resulting experience scale thus comprised 37 items and is referred to as NMQ-37 (Table 4.02). The two mothering domain subscales comprised 19 of the 37 items; skill-related (9 items) and less controllable (10 items). They are combined to represent motherhood experience most closely related to the day-to-day care of the baby, and are later referred to as NMQ-19 (Appendix A, Table A.04)

Table 4.02

Items Comprising the 37-item Motherhood Experience Questionnaire (NMQ-37), with Mothering Domain Indicated

No.	Item	Mothering domain	
		Skill - related	Less controllable
1.	Finding time to shower, clean, cook, wash clothes		
2.	Cuddling my baby		
3.	My baby establishing a feeding and sleeping routine	•	
4.	Taking my baby with me to do errands	•	
5.	Changing my baby's nappy frequently	•	
6.	Experiencing a lack of sleep		•
7.	Being uncertain about whether my baby's health and progress are within normal limits		
8.	Being interrupted by my baby in the middle of doing something		
9.	Learning to breastfeed my baby	•	
10.	Taking my baby for walks outside		
11.	Reaching agreement with my partner or another adult about sharing childcare tasks		
12.	Bottle feeding my baby	•	
13.	Lacking intellectual stimulation		
14.	Playing with my baby		
15.	Changes in the relationship with my partner		•
16.	Learning to wrap and settle my baby	•	
17.	Rocking my baby to sleep in my arms		
18.	The physical care of my baby taking so much time there is not much time left to enjoy them		
19.	Bathing or showering my baby	•	
20.	Having sore and/or cracked nipples from breast-feeding		•

No.	Item	Mothering domain	
		Skill - related	Less controllable
21.	Having less time with friends		•
22.	Returning to my normal physical self within a few months		
23.	When my baby cries, identifying the problem and comforting them quickly	•	
24.	Not having enough money for non-essential items or services		
25.	Having more periods of boredom		•
26.	My baby sometimes being distressed		•
27.	Sharing the experience of new motherhood with others		
28.	Being tired and fatigued		•
29.	Singing to my baby		
30.	Having less time to do the things I enjoy		
31.	Being confined to the house		
32.	Showing off my baby to others		
33.	My baby having colic		•
34.	Not having enough time in the day for me to attend to my own basic needs		
35.	Having a fussy baby		•
36.	Learning to burp my baby	•	
37.	Having an unwell baby, with a minor ailment like a rash or a cold		•

Postpartum adjustment and maternal self-efficacy. Measures of postpartum adjustment and maternal self-efficacy were the same as Study 1. Depression was measured using the EPDS (Cox et al., 1993), anxiety using the Trait subscale of the STAI (STAI-T; Spielberger et al., 1970), well-being using the WEMWBS (Tennant et al., 2007) and maternal self-efficacy using the 10-item measure developed by the researcher. Each

measure was used in reference to the previous 7 days. Specifications and scoring information for these measures are detailed in Chapter 3.

Social support. Social support was measured using The Postpartum Support Questionnaire (PSQ; Logsdon & McBride, 1989, Logsdon, McBride & Birkimer, 1994), because the measure used in Study 1 (Kendler et al., 2005) showed ceiling effects. The PSQ is commonly used in the perinatal field (Hann, 2008). It consists of 34 items, across four categories; Material support (9 items), Emotional support (10 items), Informational support (10 items), and Comparison support (5 items). Participants are asked to rate both the importance and help received for each item. Example items include "information on my baby's crying (why the baby cries and how to comfort him/her)" and "help in cleaning the house/apartment". There are eight response options on a rating scale (0 = *not important* to 7 = *very important* and 0 = *no support* to 7 = *a lot of support*). Total scores can range from 0 to 238 for each of importance and support, with higher scores indicating higher importance or more support received. Studies have demonstrated satisfactory to strong reliability for the PSQ (Logsdon, 2002), with Cronbach's α of .79 to .94 for "importance of support" and .92 to .96 for "support received" (Logsdon & McBride, 1989, 1991; Logsdon et al., 1994). Cronbach's α of .90 to .94 was found for the total instrument (Logsdon, Usui, Birkimer, & McBride, 1996).

Participants were also asked to indicate from 8 options, the person who provided them with the most support (i.e., mother, father, sibling, grandparent, other relative, partner and baby's father, partner not baby's father, friend), and to rate the experience of this person relative to themselves in caring for a new baby (i.e., the same, more experienced, less experienced).

Known risk factors. As in Study 1, the survey included questions about whether participants had a previous history of depression, anxiety or other psychological

difficulties. In Study 2 these data were used to control for previous psychological history.

Demographic information. Demographic information collected included age, number of children, nationality, level of education, postcode, living situation, employment status and occupation.

Procedure

Prior to commencing, participants were provided with an information sheet and consent form (Appendix B). The survey was available either online or in hardcopy (Appendix C), and took approximately 15 minutes to complete. Those who chose the online version could click on a link to the survey. Participants who completed the survey in writing returned it by mail in a reply-paid envelope. Each participant who completed the survey was entered into a draw for one of 5 supermarket vouchers each to the value of $100. Participants were also able to elect to receive a summary of the results of the study. Data collection occurred from November 2013 to January 2014. The study was approved by the Southern Adelaide Clinical Human Research and Ethics Committee.

Results

Data Preparation

Missing data. Missing data were less than 1% on each of the postnatal depression, well-being, and motherhood experience scales, and less than 4% on each of the measures of anxiety and maternal self-efficacy (Appendix A, Table A.05). No pattern was evident in these missing data and they were replaced with the mean of the other items in the scale, as suggested by Tabachnick and Fidell (2007).

There were more missing data on the Postpartum Support Questionnaire, on each of the *importance* and *received* subscales. Six participants did not complete the *importance* subscale and 8 participants did not complete the *received* subscale. This may have been a consequence of the length of this scale and its position towards the end of the survey. These cases were excluded from analyses involving social support.

As for Study 1, "not applicable" responses on the motherhood scale were excluded from the computation of the total score. On average, "not applicable" was selected on less than 6.5% of the individual motherhood items.

Normality. As for Study 1, skewness and kurtosis z scores were assessed using the cut-off of ±3.29 (Kim, 2013; Tabachnick & Fidell, 2001). All variables were normally distributed except postnatal depression, which was positively skewed and leptokurtic (Table 4.03). This is likely consistent with the typical distribution of EPDS scores in normal postpartum populations (e.g., Jardri et al., 2006).

Table 4.03

Skewness and Kurtosis Z Scores by Variable (N = 66)

Variable	Skewness (*z* score)	Kurtosis (*z* score)
Motherhood Experience	-0.28	-0.79
Postnatal Depression	6.30*	9.82*
Postnatal Anxiety	3.07	2.91
Well-being	-2.63	1.22
Maternal Self-efficacy	-1.30	0.25
Social Support Importance	0.46	-0.99
Social Support Received	-0.15	-0.90

Note. * skewness or kurtosis > ±3.29 (Tabachnick & Fidell, 2001).

Outliers. Following Tabachnick and Fidell (2013) for a sample size less than 80, univariate outliers were identified by a z score cut-off of ±2.5. There were two outliers on the EPDS, and one on each of the skill-related mothering domain, STAI, WEMWBS and maternal self-efficacy (Appendix A, Table A.06). As they had no effect on the pattern of results, they were retained for analyses.

Reliabilities

The reliability values for each scale were satisfactory (Table 4.04).

Table 4.04

Cronbach's α Reliability Test Results per Scale (N = 66)

Scale	Cronbach's α
NMQ-37	.90
Skill-related Domain	.73
Less Controllable Domain	.75
EPDS	.89
STAI-T	.93
WEMWBS	.90
Maternal Self-efficacy	.85
PSQ – support importance	.92
PSQ – support received	.95

Note. NMQ-37 = New Motherhood Questionnaire (37 item); EPDS = Edinburgh Postnatal Depression Scale; STAI–T = State-Trait Anxiety Inventory Trait Subscale; WEMWBS = Warwick-Edinburgh Mental Well-being Scale; PSQ = Postpartum Support Questionnaire.

Descriptive Statistics

As in Study 1, preliminary analyses indicated that mean motherhood experience was in the "easy to manage" half of the scale, and for both the primiparous and

multiparous groups. Likewise, in general, women in this study were functioning well, as indicated by relatively low mean scores on the depression and anxiety measures, and high scores on well-being and maternal self-efficacy.

Differences between groups were tested using independent groups t tests. Contrary to Hypothesis 2, parity was not significantly related to postnatal depression, anxiety or well-being (Table 4.05).

Table 4.05

Means (and Standard Deviations) for Primiparous and Multiparous Mothers per Variable, with Difference Between Groups and Effect Size, Cohen's d (N = 66)

Variable	Possible range	Primiparous (n = 35)	Multiparous (n = 31)	d
		M (SD)	M (SD)	
Motherhood Experience (37 items)	1 – 7 easy to hard	3.35 (.72)	3.06 (.91)	0.35
Mothering Domains * (19 items)	1 – 7 easy to hard	3.61 (.85)	3.04 (.97)	0.63
Postnatal Depression	0 – 30	7.55 (5.55)	6.13 (3.57)	0.30
Postnatal Anxiety	20 - 80	36.55 (10.14)	36.37 (7.93)	0.02
Well-being	1 - 5	3.58 (.58)	3.61 (.51)	0.05
Maternal Self-efficacy*	1 - 6	4.44 (.64)	4.89 (.75)	0.65
Social Support Importance**	0 - 238	129.97 (37.79)	102.45 (39.89)	0.71
Social Support Received**	0 - 238	134.61 (49.63)	96.89 (39.19)	0.84

Note. *p < .05, **p < .01, ***p < .001.

The same applied to the overall motherhood experience (as indexed by the 37-item version). However, when motherhood experience was represented by the combination

of the less controllable and skill-related domains (19 items), as distinct from the broader experience of motherhood, primiparous mothers rated the early weeks of motherhood more difficult than multiparous mothers, $t(64) = 2.52$, $p = .014$, $d = 0.63$. Not surprisingly, multiparous mothers had higher levels of maternal self-efficacy than first-time mothers, $t(64) = -2.60$, $p = .012$, with a medium effect size ($d = 0.65$).

Social support. In relation to social support (Table 4.05), first-time mothers rated the *importance* of social support higher than multiparous mothers, $t(58) = 2.74$, $p = .008$. Similarly, first-time mothers rated support *received* higher than multiparous mothers, $t(57) = 3.22$, $p = .002$. For more than 70% of each of the primiparous and multiparous groups, the main source of support with a new baby was their partner, who was the father of the baby. Interestingly, for 21% of first-time mothers, their own mother was the main source of support, compared to 3% for multiparous mothers. Further, in regards to support source experience, a quarter of first-time mothers indicated that their main support source was less experienced in baby care than themselves, which was the case for only 3% of multiparous mothers. This likely reflects an increase in mothers' experience from first child to the next.

Previous history. More than 80 percent of women in the clinical range on measures of postnatal depression or anxiety had a history of depression, indicated by a yes response to the question "Have you previously experienced depression?". A history of anxiety was reported by 86% of women with postnatal anxiety.

Rates of postnatal depression and postnatal anxiety. Clinical cut-offs were as those used in Study 1 (EPDS ≥ 13, STAI-T > 45). The rate of postnatal depression for this sample was 9.1% and 10.6% for postnatal anxiety, consistent with previous research (Austin et al., 2010; Leahy-Warren & McCarthy, 2007; Miller et al., 2006; O'Hara & Swain, 1996; Wenzel et al., 2005). Of women with clinical postnatal anxiety or

depression, 50% experienced comorbid postnatal depression and anxiety. The rate of comorbid clinical depression and anxiety in the sample was 4.7%. Chi square analyses found that the percentage of first-time mothers women who experienced clinical levels of postnatal depression (6%) did not differ significantly to the percentage of multiparous mothers (3%), $\chi^2(1, N = 66) = .493$, $p = .48$, $\varphi = .09$. The rate of postnatal anxiety was also similar between groups, at 8% of primiparous and 3% of multiparous mothers, $\chi^2(1, N = 66) = 1.064$, $p = .30$, $\varphi = .13$.

Relationships Between Predictors and Postpartum Adjustment

Pearson correlational analyses found strong relationships between motherhood experience and each of the postpartum adjustment measures, maternal self-efficacy and the social support importance but not received subscale (Table 4.06).

Table 4.06

Correlation Matrix of Postpartum Variables (N = 66)

Variable	Motherhood experience	Postnatal depression	Postnatal anxiety	Well-being	Maternal self-efficacy	Social support importance
Postnatal Depression	.53***	-				
Postnatal Anxiety	.58***	.84***	-			
Well-being	-.69***	-.71***	-.82***	-		
Maternal Self-efficacy	-.63***	-.37**	-.39**	.45***	-	
Social Support Importance	.42**	.28*	.26*	-.26*	-.44***	-
Social Support Received	.07	.06	-.02	.02	-.24	.37**

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

Contrary to previous findings of a negative relationship between social support and postpartum depression and anxiety (Aktan, 2012; Chaaya et al., 2002; Gjerdingen & Chaloner, 1994; Howell et al., 2006; Leahy-Warren et al., 2011; O'Hara et al., 1983), there were no significant relationships in this study. Postnatal depression, anxiety and well-being were strongly correlated with one another, but as for Study 1, they were analysed separately.

The relationships between mothering domain and postnatal depression and anxiety were weaker for the skill-related than less controllable subscale (Table 4.07). Motherhood domains were strongly correlated with one another, suggesting they may not assess discrete domains.

Table 4.07

Correlation Matrix of Experience and Adjustment Variables and Maternal Self-efficacy (N = 66)

Variable	Motherhood experience	Skill-related domain	Less Controllable domain
Skill-related Domain	.87***	-	
Less Controllable Domain	.92***	.74***	-
Postnatal Depression	.53***	.40**	.56***
Postnatal Anxiety	.58***	.41**	.60***
Maternal Self-efficacy	-.63***	-.70***	-.54***

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

Simultaneous regressions were used to test the effect of mothering domains, maternal self-efficacy and psychological history on postnatal depression and anxiety (Table 4.08). The only significant unique predictor of depression was less controllable mothering

domain. For anxiety, both the less controllable domain and a history of anxiety were unique predictors.

Table 4.08

Simultaneous Regressions for Predicting Postnatal Depression and Anxiety from Motherhood Domains, Maternal Self-efficacy and Psychological History (N = 66)

	Postnatal depression			Postnatal anxiety		
	β	*B*	*SE*	β	*B*	*SE*
Maternal Self-efficacy	-.116	-.765	1.0	-.18	-2.304	1.783
Skill-related Domain	-.068	-.352	.988	-.186	-1.871	1.761
Less Controllable Domain	.477**	2.086	.732	.578***	4.909	1.305
History of Depression	-.129	-1.275	1.239	-.067	-1.285	2.209
History of Anxiety	-.165	-1.648	1.215	-.272*	-5.294	2.167
Adjusted R^2	.313			.422		

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

The Effect of Parity and Mothering Domain on Day-to-Day Motherhood Experience

Hypothesis 1 predicted that parity would be more strongly related to skills-based aspects of managing day-to-day tasks than to less controllable aspects (an interaction); specifically, that the skill-related aspects of motherhood would be rated as more manageable by multiparous than primiparous mothers. This was tested using a 2 (parity: primiparous, multiparous) x 2 (mothering domain: skill-related, less controllable) mixed model ANOVA. The data met the assumptions for parametric analysis. Although the main effects of parity and mothering domain were significant, the

predicted interaction between them did not quite achieve significance (Table 4.09), which probably reflects insufficient statistical power.

Table 4.09

Summary of Mixed Model ANOVA for the Effects of Parity and Mothering Domain on Day-to-Day Motherhood Experience Represented by NMQ-19 (N = 66)

	F	*p*	η^2
Parity	6.33	.014	.090
Mothering Domain	110.67	< .001	.620
Parity x Mothering Domain	3.91	.052	.022

Means are reported in Table 4.10. Based on the means and effect sizes, the difference between parity groups did appear larger for the skill-related than less controllable domain. The main effect of domain indicated that overall, less controllable than skill-related aspects of caring for a new baby were rated as harder to manage, with a large effect size. The main effect of parity indicated that overall, experience was more difficult to manage for first-time mothers than for multiparous mothers, with a medium effect size.

Table 4.10

Means (and Standard Deviations) for Motherhood Experience, by Parity and Mothering Domain With Effect Size Cohen's d (N = 66)

	Parity			
Mothering domain	Primiparous	Multiparous	*d*	Total
Skill-related	3.22 (0.82)	2.48 (0.88)	0.87	2.87 (0.92)
Less Controllable	3.99 (1.03)	3.61 (1.17)	0.34	3.81 (1.11)
d	0.83	1.09		0.92
Total	3.61 (0.85)	3.04 (0.97)	0.63	3.34 (0.95)

The Relationship Between the Overall Motherhood Experience and Postpartum Adjustment

The first part of Hypothesis 2 predicted that self-rated difficulty in managing day-to-day tasks would predict postpartum anxiety and depression symptoms after controlling for psychological history and social support. Postnatal depression and postnatal anxiety were analysed separately. Psychological history was coded 0 (depression history) and 1 (no depression history) and likewise for a history or no history of anxiety and of other psychological difficulties, acknowledging that psychological difficulties other than depression and anxiety can factor in later functioning. The 3 history variables were entered in Step 1, social support received in Step 2 and motherhood experience in Step 3. In Step 3, motherhood experience explained 14% of the variance in postnatal depression, $\Delta R^2 = .136$, $\Delta F(1, 52) = 13.10$, $p = .001$, and 21% in postnatal anxiety, $\Delta R^2 = .207$, $\Delta F(1, 52) = 19.43$, $p < .001$ (Tables 4.11 and 4.12). Thus, this part of the hypothesis was supported.

Table 4.11

Hierarchical Multiple Regression Predicting Postnatal Depression from Motherhood Experience after Controlling for Psychological History and Social Support Received (n = 58)

Step	and predictor variable	ΔR^2	β	*B*	*SE*
			Dependent variable: Postpartum depression		
1	History of depression	.314***	-.118	-1.163	1.287
	History of anxiety		-.192	-1.925	1.245
	History of other psychological problems		-.431**	-6.417	1.780
2	History of depression	.012	-.119	-1.175	1.288
	History of anxiety		-.189	-1.893	1.246
	History of other psychological problems		-.443**	-6.594	1.790
	Social support received		.110	.011	.011
3	History of depression	.136**	-.001	-.010	1.206
	History of anxiety		-.167	-1.668	1.126
	History of other psychological problems		-.400**	-5.950	1.525
	Social support received		.072	.007	.010
	Motherhood experience		.398**	2.324	.642

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 4.12

Hierarchical Multiple Regression Predicting Postnatal Anxiety from Motherhood Experience after Controlling for Psychological History and Social Support Received (n = 58)

Step	and predictor variable	ΔR^2	β	*B*	*SE*
			Dependent variable: Postpartum anxiety		
1	History of depression	.238**	-.135	-2.582	2.637
	History of anxiety		-.304*	-5.916	2.551
	History of other psychological problems		-.227	-6.555	3.647
2	History of depression	.000	-.135	-2.583	2.661
	History of anxiety		-.304*	-5.912	2.575
	History of other psychological problems		-.227	-6.573	3.700
	Social support received		.006	.001	.023
3	History of depression	.207***	.011	.214	2.379
	History of anxiety		-.276*	-5.372	2.222
	History of other psychological problems		-.174	-5.026	3.207
	Social support received		-.041	-.008	.020
	Motherhood experience		.493***	5.583	1.267

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

The Effect of Parity and Skill-related Experience Interaction on Postpartum Adjustment

The second part of Hypothesis 2 predicted that skills-based aspects would be a stronger predictor of adjustment in primiparous than multiparous mothers. A moderated regression analysis tested the interaction between parity and skill-related experience on postnatal depression and anxiety. Scores on the mothering domain variables were centered, parity was coded 0 (primiparous) and 1 (multiparous), and the

product of the independent variables was computed. The main effects were entered in Step 1 and the interaction term in Step 2. The interaction was nonsignificant for both depression, $\Delta R^2 = .004$, $\Delta F(1, 62) = .31$, $p = .581$, and anxiety, $\Delta R^2 = .001$, $\Delta F(1, 62) = .06$, $p = .808$ (Tables 4.13 and 4.14) and thus this part of the hypothesis was not supported.

Table 4.13

Moderated Regression Analysis Testing the Interaction Between Parity and Skill-related Experience in Predicting Postpartum Depression (N = 66)

Step and predictor variable		ΔR^2	*B*	*SE*
1	Parity	.160**	.133	1.192
	Mothering Domain (skill)**		2.090	.652
2	Parity	.004	.145	1.199
	Mothering Domain (skill)		1.722	.933
	Parity x Mothering Domain (skill)		.728	1.312

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 4.14

Moderated Regression Analysis Testing the Interaction Between Parity and Skill-related Experience in Predicting Postpartum Anxiety (N = 66)

Step and predictor variable		ΔR^2	*B*	*SE*
1	Parity	.193**	3.356	2.243
	Mothering Domain (skill)***		4.756	1.227
2	Parity	.001	3.366	2.260
	Mothering Domain (skill)		4.450	1.758
	Parity x Mothering Domain (skill)		.605	2.472

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

The unstandardised coefficients in Step 1 indicated that irrespective of parity, each increment in increased difficulty managing skill-related aspects corresponded with an increase of 2.09 in depression scores and 4.76 in anxiety scores.

Discussion

The aim of this study was to test the theory that in predicting postpartum adjustment, it is possible to distinguish between day-to-day motherhood challenges that might be diminished by previous experience and those that cannot be. The study investigated if parity played a role in how well mothers managed the early weeks caring for a new baby, and whether this was moderated by skill-related and less controllable aspects of motherhood. Further, the study sought to determine whether skill-related aspects of motherhood would more strongly predict adjustment in multiparous than primiparous mothers.

Significant differences in mean scores on one measure of experience indicated that first-time mothers found the day-to-day aspects of motherhood somewhat more difficult to manage. Notably this resulted from using the shorter experience measure, NMQ-19, which comprised the aspects of motherhood most closely related to the day-to-day care of the baby. Theses included infant feeding, bathing, settling and changing and dealing with sleep deprivation and a sick or distressed baby. The effect of parity is probably a function of prior experience and indeed, women who had cared for a baby in the past had higher maternal self-efficacy than did first-time mothers, consistent with previous findings (Fish & Stifter, 1993; Froman & Owen, 1990; Kapp, 1998; Liu et al., 2012; Sallinen et al., 2007; Zahr, 1991).

Findings also revealed that aspects of motherhood that could be learned or mastered relatively quickly (such as bathing and dressing) were rated as easier to manage than other, less controllable events, such as prolonged crying and maternal sleep deprivation. However, contrary to the first hypotheses, parity was no more strongly related to perceptions of *skills-based* aspects of mothering than it was to *less controllable* aspects. In other words, collapsed across the many issues covered in the

experience measure, second- or third-time mothers found *everything* easier. Nonetheless, the pattern of differences among cell means trended towards a greater benefit of parity to managing skill-related than less controllable aspects of baby care.

One possible explanation of the failure to find the hypothesised interaction is that previous experience did not act through skill per se. The results may be explained by adopting a broader perspective of prior experience, one that incorporates knowledge gained about experience that is not limited to skill development. Conceptualising experience more broadly would remain consistent with the framework of experiential learning theory (Kolb, 1984), put forward in this study to explain skill development through hands-on baby care practice. The activities involved in day-to-day infant care could provide mothers with opportunities to learn about stages and patterns of infant development, the nature, course, duration and severity of infant care challenges, and their personal resources, competencies and limits. The finding of a positive relationship between parity and maternal self-efficacy is consistent with the benefit of experience being related to women learning about their personal capabilities. It may be that motherhood experience positively impacted mothers' beliefs about their proficiencies.

As anticipated in Hypothesis 2, motherhood experience predicted postpartum depression and anxiety after controlling for previous psychological history and social support received. This is consistent with and an extension of the results of Study 1, given the current sample comprised both first-time *and* multiparous mothers. Consistent with established findings (Beck, 2001; Britton, 2008; Grant et al., 2008; Matthey et al., 2003; Moss et al., 2009; O'Hara & Swain, 1996; Robertson et al., 2003, 2004; Wenzel et al., 2005), a previous history of psychological difficulties was a strong predictor of postpartum adjustment, and this corresponded with the high percentage of women with clinical postpartum depression or anxiety who reported a previous history.

Contrary to expectations however, there was no significant difference in skills-based aspects of motherhood as a predictor of postpartum depression or anxiety between primiparous and multiparous women. While mean scores illustrated greater ease in managing the day-to-day aspects of early motherhood in multiparous than primiparous mothers, there was no difference in postpartum depression, anxiety and well-being scores. Likewise, similar rates of clinical postnatal depression and anxiety were found in both primiparous and multiparous groups. Thus, even though multiparous mothers found motherhood easier to manage than first-time mothers they did not enjoy a corresponding benefit in their adjustment. Given the strong relationship between experience and adjustment found in this study across the whole sample, one explanation of the findings is that multiparous mothers' adjustment may have benefitted from their previous experience with infant care, but this was outweighed by other, undetected, factors, and this will be discussed below.

It may be that at the same time multiparous mothers were caring for a newborn, they were also affected by challenges related to managing multiple children. While infant care activities may have been easier given previous experience, meeting the demands of older siblings at the same time may have presented different challenges. Furthermore, the measure of day-to-day motherhood experience did not assess and therefore detect such challenges. Finally, negative impact on adjustment of such an undetected challenge may have cancelled out any benefit to adjustment of the relative ease managing with a new baby.

Indications that being the mother of multiple children can be stressful include findings, albeit inconsistent, of multiparity as a predictor of postnatal depression (Figueiredo & Conde, 2011; Grant et al., 2008; Skari et al., 2002). Multiparity may present additional and novel social and emotional challenges in making adjustments to

existing relationships (Figueiredo & Conde, 2011; Gameiro et al., 2009; Grant et al., 2008; Skari et al., 2002; Stewart, 1990). Specific challenges may include managing toddler behaviours, meeting the needs and commitments of older children, such as kindergarten and school (Figueiredo & Conde, 2011; Skari et al., 2002). Other factors, such as marital and occupational status have been proposed as factors in multiparous experience (Segre et al., 2007) and it has been suggested that additional children may increase economic stress in low-income families (Ho-Yen et al., 2007; Segre et al., 2007). Multiparity has been described as more demanding (Skari et al., 2002) and more complex than primiparity, as it involves "childrearing as well as childbearing" (Hakulinen, Paunonen, White, & Wilson, 1997, p. 274).

Multiparous mothers may be left to managing their children with less help, as found in a study of 861 mothers in Taiwan, where multiparous mothers received less support and attention from family and friends than primiparous mothers (Hung, 2004). Similar results were seen in the current study, with significantly lower mean scores on social support received for multiparous than primiparous mothers, with a large effect size. Furthermore, a much greater percentage of primiparous than multiparous mothers reported their key support person was their own mother. Notably, multiparous mothers also rated social support importance lower than primiparous. However, as with the experience measure, the social support scale did not cover items specifically related to caring for multiple children. Thus, this result probably reflects less importance on support in relation to infant care, rather than importance of broader support that might be important when managing more children.

That multiparous mothers encounter challenges in wider motherhood experience is consistent with a comparison of findings using the shorter (NMQ-19) versus the longer (NMQ-37) experience measure. While there was a difference between

primiparous and multiparous mothers in ease of managing on the measure of day-to-day experience, no difference was found between the groups on the broad experience measure. The broader measure may have more closely represented managing a new baby in a growing family, as it included the impact on relationships and restrictions on personal time and self-care. It appears that as the assessed experience broadened, the benefit of parity diminished. That is, that any benefit of parity in managing newborn care was cancelled out by the impact of challenges faced overall. This proposition could be tested by including measures of the additional demands arising from caring for more than one child.

Methodological Considerations

Two limitations to this study are noted. First, notwithstanding the strong relationship between experience and adjustment consistent with Study 1, the issue of cause and effect remains unresolved due to the correlational design of Study 2. Further investigation is required to establish whether the relationship is causal or at least bi-directional, before motherhood experience can be acknowledged as a determinant in postpartum adjustment. This is discussed in detail in the General Discussion (Chapter 6). The second limitation in Study 2 is that the validity of the experience measure, including the subscales used to assess experience by mothering domain, are not known. The strong correlation between the subscales suggests they may not be discrete. It may be that the motherhood items selected to reflect the skill-related activities were inaccurate or insufficient.

Directions for Further Research

As noted, further research is required in resolving the cause and effect issue between experience and adjustment, with a key component of this being the

identification of influences on experience. While it is clear from the results of Study 2 that previous benefits subsequent experience specific to day-to-day infant care, additional inquiry is required to determine what else might influence broader motherhood experience. This could be addressed by exploring primiparous and multiparous mothers' perceptions of motherhood experience in greater depth, using a qualitative approach. Through conversations about motherhood experience, mothers could volunteer information about their experience, identify aspects that have presented as challenges, how this made them feel, what helped in managing, whether the ease of managing changed with subsequent children and why this may have been the case. Of particular interest is what distinguishes more from less challenging aspects of motherhood and what is learned from experience with first to subsequent infants. Given the possibility of challenges related to managing multiple children not being assessed in Study 2's experience measure, an additional objective is to identify the presence and nature of different challenges experienced by multiparous and primiparous mothers.

Summary

In summary, the key findings of this study indicate that multiparity benefits managing the day-to-day challenges in caring for a subsequent baby, but without a corresponding benefit to adjustment. It may be that the premise is incorrect, or that the experience measure used did not capture any of the additional demands of caring for more than one child. Further, the benefit to experience does not appear to operate through skill development specifically. More research is required to better understand the challenging aspects of motherhood experience with first and subsequent infants and this is addressed in Study 3 (Chapter 5).

Chapter 5

Study 3

Overview

Studies 1 and 2 found that the easier the motherhood experience the better the adjustment. The causal direction of the relationship remains unresolved, despite efforts in Study 2 to identify influences on experience related to previous motherhood experience in the form of parity. The aim of Study 3 was to test how previous experience affects subsequent, by better understanding differences in the early experience caring for a new baby between first and subsequent experiences of motherhood. Multiparous and primiparous mothers were individually interviewed.

Self-report surveys comprising pre-set, closed-ended questions with fixed response options result in a degree of suggestion or prompting. By contrast, Study 3 sought to provide the opportunity for women to *volunteer* information, via open-ended questions. To fully appreciate each woman's experience of managing with a new baby and how they adjusted emotionally, detailed and in-depth responses were desirable. The study specifically sought to gauge mothers' experience of enjoyable, challenging and surprising aspects of motherhood, feelings of self-confidence, preparedness and their emotional response to challenges. Information was also wanted about mothers' experience of emotional, informational and practical support, antenatal and postnatal psychological difficulties, advice to and from others, what they found helpful and suggestions about what else might have made the experience easier.

Accordingly, qualitative methodology was suited to this study, specifically a semi-structured interview. It was expected that mothers of young children would be able to best identify specific challenges in mothering, what makes those aspects

challenging, and what might make them easier. These data could also be compared with the results of the quantitative studies to determine the degree of correspondence.

The research questions for this study were: When women were asked relatively open-ended questions about their experience of the early weeks of motherhood

1. What issues did they highlight? What did they perceive as the best and more difficult aspects, and what was the nature of the more difficult aspects? How did they feel in relation to challenging aspects? Did they experience psychological difficulties?
2. How adequately prepared did they feel for motherhood? If antenatal classes were part of their preparation, what did they cover? Was there anything they found surprising about motherhood? How confident did they feel?
3. What did mothers think was or might have been helpful for them for those early weeks or months? Did it include learning practical skills for infant-care, information about what to expect and what is normal?
4. What advice would they give expectant mothers?
5. For multiparous mothers, did their experience with their most recent child differ to that with previous children?

Method

Participants

Participants in Study 2 were asked if they were willing to be invited to take part in a further and qualitative phase of the research. Those who indicated their interest (35 women) were emailed an invitation to be individually interviewed and 12 of these accepted and participated. Five participants were also recruited by email from the student body in the School of Psychology at Flinders University and via the researcher's

non-immediate social network. Inclusion criteria were that they were mothers with at least one child, and their youngest was 18 months of age or younger. A total of 17 interviews were conducted; 12 face to face and 5 by telephone. Interviews were completed during 2014.

The demographic characteristics of participants are in Table 5.01. The sample was highly educated, with 92% having completed a tertiary qualification. Only one woman was living alone with her children; all other participants lived with the father of their children. Around half the sample had some pre-motherhood experience with infants. While just over one third reported a pre-motherhood history of psychological difficulties, just under one quarter experienced poor postpartum adjustment with their youngest child, indicated by a yes/no response. The sample comprised 8 first-time mothers and 9 mothers of more than one child. On average, multiparous mothers were older (M = 35.50, SD = 3.73) than primiparous (M = 31.05, SD = 2.66). For those women who had more than one child, the number of children ranged from 2 to 4 (M = 2.67, SD = 0.71).

Table 5.01

Demographic Characteristics of Participants

Number of participants	*N* = 17	
Age, mean (*SD*)	33.4	(3.90)
Age of youngest child in months, mean (*SD*)	6.7	(2.91)
Living situation		
With child/ren and husband father of children	13	(76%)
With child/ren and partner father of children	3	(18%)
With children	1	(6%)
Level of Education		
Year 12	3	(18%)
Diploma	3	(18%)
Bachelor Degree	3	(18%)
Bachelor Degree Hons	3	(18%)
Postgraduate Qualification	5	(29%)
Pre children employment status		
Full-time	14	(82%)
Part-time	3	(18%)
Country of birth		
Australia	15	(88%)
United Kingdom	1	(6%)
USA	1	(6%)
Postcode		
SA	13	(76%)
Other	4	(24%)
Infant care experience pre children		
Yes	8	(47%)
No	9	(53%)
History of mental health difficulties		
Yes	6	(35%)
No	11	(65%)
Poor postpartum adjustment with youngest		
Yes	4	(24%)
No	13	(76%)

Materials

Semi-structured interview. Data were collected using individual semi-structured interviews. The interview (Appendix C) comprised questions designed to encourage conversation about participants' experience of the early weeks caring for a new baby. Participants were asked open-ended questions about the best and more challenging aspects of the first few weeks of motherhood, anything they had not anticipated, how prepared they felt, changes in their level of maternal confidence, and their feelings in relation to challenges. Questions also covered emotional and practical support, antenatal and postnatal psychological difficulties, advice from others, antenatal preparation such as the material covered in hospital classes, helpful strategies and suggestions about what else might have helped. Mothers of more than one child were also asked to compare their early experience with each of their children. The interview concluded with "If there was one piece of advice you could give to women expecting their first baby, what would it be?" Questions were followed by prompts for clarification where necessary.

Procedure

The researcher conducted all interviews. Participants chose to be interviewed either at their home or at the researcher's university office, at a time and date suitable to them. Both handwritten notes taken by the researcher and audio-recording were used to collect data. Participants gave written consent before the interview (by email for phone interviews) and were informed they could decline to answer any questions of have the audio recorder turned off at any time. Each interview commenced with participants providing some basic demographic information about themselves and their experience caring for infants prior to motherhood. The interview duration ranged from

25 to 90 minutes (*M* = 44). Each participant received a supermarket voucher to the value of $20. The study was approved by the Southern Adelaide Clinical Human Research and Ethics Committee.

Data analysis

The data were collected and transcribed by the researcher. The approach was confirmatory rather than exploratory in nature. That is, the study sought to test ideas stemming from the results of the previous quantitative studies and from previous findings, rather than seeking to generate new ideas from the data. A priori codes were developed before data collection commenced. The coding pertained to two broad topics; potentially challenging aspects of motherhood, and the specific topics covered in antenatal classes in the lead-up to childbirth. Thirteen codes were allocated to challenges experienced in early motherhood, including breastfeeding, delayed physical recovery, colic and sleep deprivation. For antenatal education, eleven codes were allocated to topics covered in antenatal classes, including pain management options, infant care, birth complications and the birth process. Each interview was transcribed verbatim and checked against the audio recording for accuracy. The researcher coded each transcript and codes were collated to enable frequency analysis and comparisons of the coded concepts between the primiparous and multiparous groups. Three randomly selected cases were independently coded. In each case intercoder reliability was above recommended levels of .800 (Krippendorff, 2004a) with Krippendorff's from $\alpha = .91$ to $\alpha = .95$.

Results

Most Recent Motherhood Experience Overall Comment

Participants were initially asked, "What were first few weeks like for you, caring for your new baby?" In reply, participants' overall comments about the early weeks and months with their youngest child were unmistakably either positive or negative. This time was described generally as challenging by 9 (53%) mothers, and as enjoyable by 8 (47%). In this small sample, the same pattern was evident regardless of parity, with around half of each of the primiparous and multiparous groups finding the overall experience with their youngest child challenging. Differences were, however, apparent in the nature of their experience and this was reflected in their comments, e.g.,

> Hard…..very hard.....it gets better with time…..it honestly feels like it's going to be like this forever….when really it's not…..you can't be rational, you can't see past the next week or even the next hour sometimes (primipara, 28 years)
>
> It was hectic…..I found it difficult because I had both of them (multipara, 36 years)
>
> A really lovely time…..time together as a family…..I thought it was going to be a lot harder than it was (primipara, 34 years)
>
> It was pretty good…..she was a lot easier than my first one (multipara, 28 years)

Best Things

When asked "What were the best things about that early period with a new baby?", more than two-thirds of the sample (71%) stated that the best thing related to time spent enjoying the new baby, e.g.,

> Getting to know another little person…..who are they going to be…..connecting with them (multipara, 38 years)

Further, one third said that they enjoyed the physical contact with the baby during this time, e.g.,

> Skin to skin contact….time in arms (primipara, 30 years)

Watching the new baby grow and develop was reported by 4 women (24%) as the best thing about those early weeks, e.g.,

> Seeing the little developmental changes (primipara, 33 years)

Challenges

When asked whether there were any challenging aspects of infant care or more generally, fifteen mothers (88%) stated that they found one or more aspect of the early weeks and months with their most recent baby to be challenging. One primiparous mother (13%) and one multiparous mother (11%) indicated that they did not find any aspects of this experience to be particularly challenging. As provided in Table 5.02, across the sample, thirteen different challenging aspects were experienced as follows; baby's sleep pattern, delayed physical recovery following childbirth, breastfeeding, wrapping and settling, sleep deprivation, low support, delivery complications, managing multiple children, colic, reflux, sick baby, relationship issues, significant life events. The diversity of experience is notable in the spread of challenges. The number of challenging aspects experienced per mother ranged from 1 to 7, with a mean of 3. Difficulty with babies' sleep patterns was the most frequently reported challenge (47%), followed by delayed physical recovery (41%). Difficulties with breastfeeding, wrapping and settling, sleep deprivation and low support were all reported at the same frequency (29%).

Table 5.02

Matrix of Motherhood Challenges per Participant and Total Percentage (N = 17)

P	Challenging aspect of early motherhood												
	SP	DPR	BF	WS	SD	LS	DC	MMC	C	R	SB	RI	SLE
1*	X	X	X	X	X				X	X			
2*	X	X					X						X
3*	X												
4	X			X									
5		X		X	X								
6		X						X					
7*	X			X	X				X	X			
8*	X	X	X	X	X	X						X	
9		X				X	X				X		
10													
11			X			X		X			X		
12*	X	X	X		X								
13						X	X						
14*	X												
15			X			X	X	X					
16								X					
17*													
%	47	41	29	29	29	29	24	24	12	12	12	6	6

Note. * = Primipara; % = percentage of total sample, P = participant, SP = sleep pattern, DPR = delayed physical recovery, BF = breastfeeding, WS = wrapping and settling, SD = sleep deprivation, LS = low support, DC = delivery complications, MMC = managing multiple children, C = colic, R = reflux, SB = sick baby, RI = relationship issues, SLE = significant life events.

Comparison of Challenges Between Primiparous and Multiparous Mothers

Comparing primiparous and multiparous experience with the most recent child revealed that a much larger percentage of first-time (88%) than multiparous (11%) mothers found infant sleep patterns challenging (Figure 5.01). Similarly, sleep deprivation was reported as challenging by half of the first-time mothers but only one of the multiparous mothers. On the other hand, more multiparous (44%) than primiparous mothers (13%) reported low support as a challenge with their most recent child. Only first-time mothers mentioned colic or reflux and the 25% who did found these challenging to manage. Nearly half the multiparous mothers found managing multiple children a challenge in early motherhood.

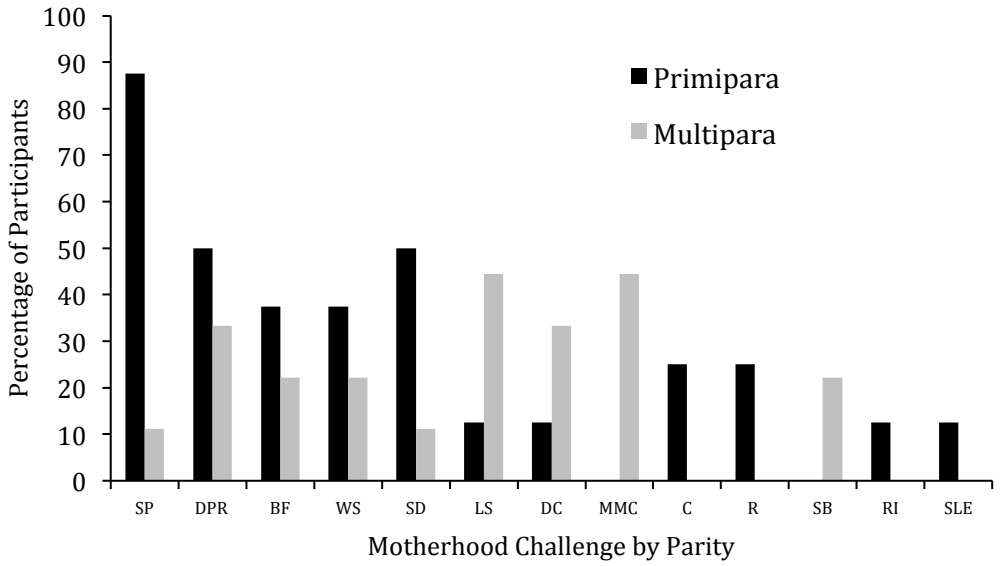

Figure 5.01. Percentages of self-reported motherhood challenges by parity (primiparous *n* = 8, multiparous *n* = 9).

Note. SP = sleep pattern, DPR = delayed physical recovery, BF = breastfeeding, WS = wrapping and settling, SD = sleep deprivation, LS = low support, DC = delivery complications, MMC = managing multiple children, C = colic, R = reflux, SB = sick baby, RI = relationship issues, SLE = significant life events.

Multiparous Mothers' Comparison of Multiple Motherhood Experiences

As previously noted, the number of children for multiparous mothers ranged from 2 to 4, with a mean of 2.67. Mothers of more than one child were asked to compare their experience caring for each of their children in the early weeks and months. More similarities than differences were evident in the frequency of challenging aspects experienced across multiple children (Table 5.03). The greatest differences were between the first and the most recent child in relation to the percentage of mothers who found their baby's sleep pattern and their own sleep deprivation challenging, each at 44% with their first baby and 11% with the most recent baby. The frequency of other challenging aspects did not substantially diminish with subsequent children. Notably, six multiparous mothers (67%) indicated that they found the same challenging aspect applied to at least two of their early mothering experiences.

Notwithstanding the similarities noted above, 8 (89%) of the 9 multiparous mothers reported that their experience caring for their most recent child was easier than their experience with their first baby, with the remaining mother (11%) indicating that her subsequent experience was similar to her first. Three multiparous mothers (33%) specifically noted a difference in their attitude re caring for their first and subsequent babies, e.g.,

> [Now] this is just going to happen and we'll just get through it …whereas before it would have been "gotta fix this" "what's wrong" "gotta make you stop"….and now "you're upset, don't really know why but it'll settle" (multipara, 35 years)
>
> With the first one we were "oh, we have to figure it out, get her quiet", whereas with the second one "let him cry it out for a while and see what happens" (multipara, 36 years)

In addition, seven of the nine multiparous mothers commented on the different

temperament of their youngest baby relative to any previous children, with each of them reporting their most recent baby was more relaxed and calm.

Table 5.03

Multiparous Mothers' Percentage of Challenges with First and Subsequent Children (n = 9)

Motherhood challenge	%		
	Eldest (n = 9)	Second (n = 5)	Youngest (n = 9)
Sleep pattern	44	60	11
Sleep deprivation	44	60	11
Low support	44	20	44
Breastfeeding	33	40	22
Wrapping and settling	33	40	22
Delivery complications	33	0	33
Delayed physical recovery	22	20	33
Sick baby	22	0	22
Relationship issues	11	0	0
Reflux	11	0	0
Significant life events	1	0	0
Colic	0	0	0
Managing multiple children	n/a	40	44

Related Feelings Regarding First Baby

Each mother was asked about emotions they experienced in relation to challenges with their first baby. Seventeen adverse feelings were reported, including feeling overwhelmed, frustrated and isolated. The frequency of different feelings reported is depicted in Figure 5.02. The most frequently reported emotion was feeling

annoyed or frustrated at the situation (29%), followed by feeling overwhelmed, low mood, more emotional than usual, and isolated, at 24%.

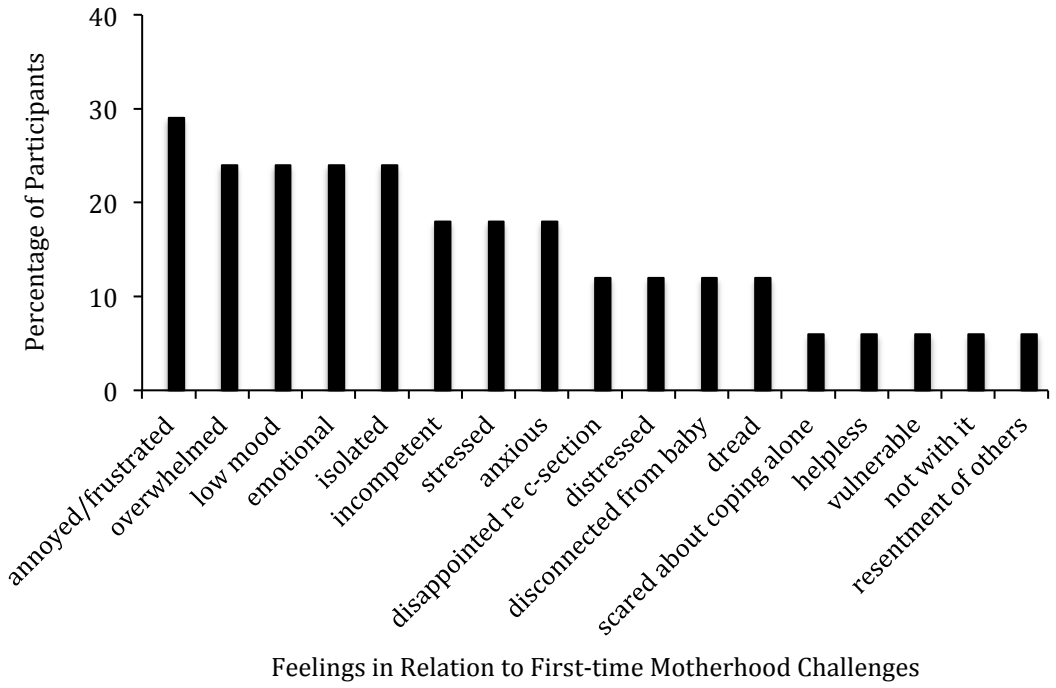

Figure 5.02. Percentage of feelings described in relation to motherhood challenges with first baby (*N* = 17).

When asked whether they had experienced postnatal psychological difficulties with their most recent baby, four mothers (24%) reported poor postpartum adjustment in the weeks and months following the birth. Three of these women stated that they had a previous history of psychological difficulties. Sixteen women (94%) reported having access to someone to talk to in the event they felt the need.

Antenatal Education

Every participant indicated they had received antenatal education during their pregnancy with their first baby, all except one (94%) provided by their hospital.

Antenatal education took the form of attending one or a series of classes, usually spaced a week apart. Women reported 11 topics addressed in antenatal classes, including the birth process, infant care and hospital information. The frequency of topics reported is depicted in Figure 5.03. The birth process (88%) and pain management options (71%) were the two most frequently reported topics. Breastfeeding was covered by around half (53%) the classes, with around one third (35%) addressing other infant care information. It is noted that these data should not be interpreted to mean that 65% of the sample definitely did not receive antenatal information about baby care, as participants' responses were based on retrospective memory.

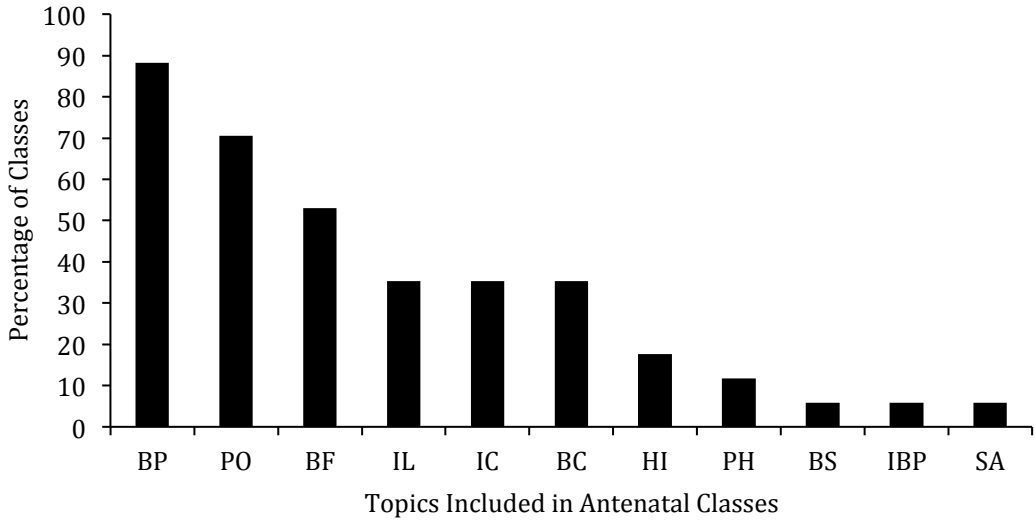

Figure 5.03. Percentage of topics included in antenatal classes (*N* = 17).

Note. BP = birth process, PO = pain management options, BF = breastfeeding, IL = labour identification, IC = infant care, BC = birth complications, HI = hospital information, PH = pregnancy health, BS = baby sleep, IBP = individual birth plan, SA = self-advocacy.

Nine women (53%) expressed a desire for more or different information in the lead-up to the birth of their first child. Five of these women (56%) expressed a desire

for information in reference to the particular motherhood aspect that had been most difficult for them. All of these related directly to baby care and included sleeping and settling, breastfeeding, reflux and colic, wrapping and swaddling. A preference for more information about the experience of childbirth was indicated by two women (22%) and about child development norms by one (11%). One mother stated that it would be good to have more information about what to expect when you first get home from hospital.

Concerning *postnatal* education, six women (35%) reported having access to classes in the early postnatal weeks and months regarding infant care skills like wrapping and settling and breastfeeding, as well as other baby care matters such as caring for teeth and gums, resuscitation, and childcare service considerations.

Preparedness

In response to a question about how prepared they felt for their first baby, a small proportion of women (29%) indicated that looking back, they did not feel they were prepared for motherhood the first-time, e.g.,

> I don't think you can ever be prepared…..I was so deluded (primipara, 30 years)
>
> I was physically prepared…..I wasn't prepared for the toll it would take on me mentally and emotionally (primipara, 33 years)
>
> Completely unprepared…..I had no experience and my friends didn't have babies….I never saw the process, I never saw anyone in my family have a baby (multipara, 36 years)
>
> All I expected was that I'd have a baby…..I didn't know what would come with it (multipara, 31 years)

Four women (24%) stated they felt prepared for motherhood, e.g.,

> I wasn't under any illusions as to what was involved (primipara, 34 years)

One woman (6%) said that she had taken active steps to prepare, e.g.,

I prepared myself as well as I could have by making sure I had a good support network (primipara, 29 years)

Surprises

Participants were asked whether they experienced anything unexpected in relation to caring for their most recent baby. Fourteen mothers (82%) reported being surprised by aspects of their latest motherhood experience, 8 of them (57%) pleasantly and 6 (43%) less so.

Statements about agreeable surprises included;

I was surprised about how time flew and how quickly it was all over…..that "baby baby" stage.....I thought it would drag on and you'd almost be wishing it away (primipara, 29 years)

I was expecting it to be a lot harder…..I just knew what to do (primipara, 34 years)

The amount of love that I feel for both my children now surprised me, and how much more I fell in love with my husband once the children were born, seeing him be a father…..and I'm surprised at how good I am at it too (multipara, 31 years)

Statements about less agreeable surprises included;

Some things I thought I would really struggle with have been fine and some things I never turned my mind to have been a lot harder…..like putting petrol in the car, it never occurred to me that that would be so hard and I hate it, I hate it when I look at the car and the car needs petrol (primipara, 34 years)

How unrealistic our expectations were…..that babies don't just eat, sleep and poop (primipara, 28 years)

I didn't expect that I would be so emotional for so long (primipara, 33 years)

I hadn't expected breastfeeding to be so hard…..I just expected that to be a choice that you made (multipara, 34 years)

Maternal Self-efficacy

In relation to confidence with their first baby, 10 women (59%) reported feeling fairly to very confident when the baby first arrived. Regardless of their initial level of confidence caring for their first child, 16 women (94%) reported an increase in confidence over time, although variation was evident in the speed and strength of the increase, e.g.,

It increased quite quickly as I had no problems…..that meant that right from the very beginning I was getting positive feedback from the midwives and doctors and that meant I was getting more and more confident about what I was doing (primipara, 29 years)

It increased due to learning through doing, and through getting to know him (primipara, 28 years)

It increased very gradually and was very easily rocked (multipara, 36 years)

The remaining mother (6%), who reported feeling very confident with her first baby, stated that her confidence level remained the same over time.

Conflicting Advice

Just over half (53%) of participants mentioned receiving conflicting advice about mothering tasks from multiple sources and its detrimental impact, particularly on their self confidence, e.g.,

Lots of people tell you what you should and shouldn't be doing…and it's hard to tune that out and just enjoy it…… it undermines your confidence (primipara, 30 years)

One first-time mother was able to reframe this experience as a useful way to gather as much information on infant care issues and as permission to try anything, e.g.,

> One midwife would say “you must always do this” or “never do the very same thing" …..everyone gives you conflicting advice, I've just embraced that now and get as much as I can (primipara, 29 years)

Mothers’ Groups

Mothers’ groups are support groups for new parents, often set up by local community health services. They commonly draw together new mothers who live in the same area, starting at about 3 months postpartum. First-time mothers in this study generally attended mothers’ groups, with 7 of 8 (88%) compared to 1 of 9 (11%) multiparous mothers. Some mothers of more than one child indicated that they were still in contact with friends made in mothers group with their first child. Further, the use of social media, specifically Facebook, as a “virtual” mothers group, was reported by 7 participants (41%). There was consensus among 9 women (53%) that the benefit of mothers groups was being part of a group of people who were going through a similar experience at more or less the same time, e.g.,

> You see the similarities between children, watch others' experience and problem solve…..think about how I might do it (multipara, 41 years)
>
> Babies at similar ages…. all "on the same page" at the same time, good for tips and to confirm you're going okay, and your child's development is on track.....and to share positive stories (primipara, 33 years)

Two women (12%) indicated the primary benefit to them of mothers groups was around developing social connections with women in their local area.

Advice to Expectant First-time Mothers

Participants were asked for one piece of advice they would offer to a woman expecting her first child. Six women stressed the importance of asking for and accepting help from others, e.g.,

> Ask for help when you need it…..not just the logistic help, the mental help (multipara, 34 years)
>
> That it's OK to ask for help and that when people offer, just take it (primipara, 33 years)

Five women (29%) reflected on the transient nature of both positive and challenging aspects of early motherhood, e.g.,

> It won't last, this is not forever, whatever you are going through now is not forever…..cos it feels like it …..you can't see the light at the end of the tunnel (multipara, 38 years)
>
> How you are going is such an ephemeral thing…..you are so "in the moment" (primipara, 34 years)

Four women (24%) emphasised the importance of trusting in your own judgment, e.g.,

> Trust in yourself and that you know your baby.....you do get so much information that is conflicting from all sorts of different perspectives and one way is not necessarily the right way…..pick and choose and do what's right for you (multipara, 34 years)
>
> Listen to your baby, do what they want (multipara, 34 years)

Four women had advice regarding expectations, e.g.,

> Lower your expectations…..if you don't expect so much then you won't be so hard on yourself…..I mean that with everything…..clean house, washing pile, of

the love that you'll feel for your child straight off the bat…..then you don't get disappointed (multipara, 31 years)

You cannot be perfect and you will make mistakes (multipara, 41 years).

Discussion

The principal aim of Study 3 was to understand directly from mothers what the experience of the early weeks of motherhood was like, what specific challenges they experienced, what they thought did or might have helped, and how previous benefitted subsequent experience. It was a small study of 17 mothers and thus the findings are suggestive rather than definitive. The data were limited by their subjective and retrospective nature, and by the possibility of responses biased by social desirability. The interviews highlighted several issues, including the common challenges experienced in relation to infant care, the need for more information about aspects of motherhood, the importance of learning through experience in developing self-efficacy, and the benefits of mothers' groups. In addition, the findings of this study correspond to those from Studies 1 and 2 regarding the motherhood challenges experienced, related emotional responses, and the role of parity.

Preparedness and Surprises

Around a third of the sample did not feel prepared for motherhood, with no appreciation for what was involved and the impact on them emotionally and physically. Results from a larger study (N = 151) showed a similar pattern, with 20% felt not at all prepared for the emotional experience and 35% not at all prepared for the physical experience (Barnes et al., 2008). Further, while 43% of participants felt *prepared with infant care information*, less than 15% felt *quite prepared to care for their infants*. Additional studies have highlighted mothers' feeling a lack of preparedness (Buultjens & Liamputtong, 2007; Darvill et al., 2010; Read et al., 2012), and their sudden awareness of the responsibility and the physical implications on them (Lupton, 2000; Young, 2008). Studies of first-time mothers using individual semi-structured interviews found many

felt unprepared for motherhood, finding it overwhelming, chaotic and "a shock" (McIntosh, 1993; Young, 2008). Further, content analysis of qualitative comments at the end of a postpartum survey (N = 100) at 8 weeks postpartum, reflected common experience of feeling unprepared for motherhood, particularly regarding maternal fatigue, infant care challenges, lack of time for oneself and responsibility (McVeigh, 1997).

That more than 80% of mothers in Study 3 reported a surprise in relation to motherhood experience is consistent with an expectations-experience discrepancy as determined in Study 1 and elsewhere (Callahan Churchill & Davis, 2010; Darvill et al., 2010; Harwood et al., 2007; Kalmuss et al., 1992; McIntosh, 1993; Miller, 2002; Read et al., 2012; Tammentie et al., 2004; Wardrop & Popadiuk, 2013). While less enjoyable surprises were consistent with motherhood challenges mentioned below, more than half the sample reported enjoyable surprises, related to motherhood stages passing quickly, joy at observing the relationship between baby and baby's father, and at their own competence in the new role. Similarly, Harwood et al. found mothers were surprised at how much they enjoyed caring for their baby. While not necessarily voiced a surprise, Lupton (2000) found women enjoyed the feeling of a unique relationship with their baby and gained from the emotional closeness they felt to them. Finally, in a small qualitative study, all 13 first-time mothers felt their baby was by far their greatest achievement (Darvill et al., 2010).

Motherhood Experience Challenges

The diversity of experience within the sample was notable, although perhaps unsurprising given the variety of challenges reported. No two mothers experienced the same combination of challenges. Nevertheless, several aspects were commonly indicated and, consistent with previous studies (Barnes et al., 2008; Beck, 2002;

Buultjens & Liamputtong, 2007; Lupton, 2000; McVeigh, 1997; Shakespeare et al., 2004; Wardrop & Popadiuk, 2013) they included infant care, infant sleep patterns, breastfeeding, and wrapping and settling. In their telephone interviews with 151 first-time mothers, Barnes et al. (2008) similarly found that the challenges common to 25% of the sample were infant feeding and sleeping, and maternal sleep deprivation and fatigue. In addition, the challenges frequently experienced by the Study 3 sample are consistent with the top 10 most difficult to manage items reported in Study 1, albeit using different measures (frequency for Study 3 data and difficulty ratings for Study 1).

The comparison of primiparous and multiparous mothers yielded a different picture. While more first-time than multiparous mothers found each of the infant-care aspects challenging, for multiparous women, the emphasis was on the cumulative load of caring for more than one child, with *low support* and *managing multiple children* most frequently reported as challenges. The identification of *managing multiple children* as a common challenge for multiparous mothers in Study 3 was a notable finding over and above those of Study 2. Study 3's semi-structured interview technique was able to uncover data that Study 2's survey could not, as the motherhood experience scale did not include items related to managing multiple children.

Multiparous mothers compared their experience caring for each of their babies, and while some reported infant care aspects as challenging, the percentage of mothers who found these aspects challenging was greater with the first than subsequent children.

These differences in experience between primiparous and multiparous mothers and within multiparous mothers from one child to the next suggest that parity, via learning from previous experience, may influence how well mothers manage with a new baby. It seems that infant care aspects become less challenging as mothers become

more knowledgeable and these concerns are superseded by those more pressing, related to having a larger family, such as the need for or absence of support and dealing with the competing demands of multiple children. Multiparous mothers' increased ease in managing infant care is consistent with the findings of Study 2 and with previous research demonstrating the positive relationship between parity and maternal confidence (Fish & Stifter, 1993; Froman & Owen, 1990; Kapp, 1998; Liu et al., 2012; Sallinen et al., 2007; Zahr, 1991). The challenges faced by multiparous mothers in relation to managing multiple children correspond to findings by Mercer and Ferketich (1995). Multiparous mothers' comments about the need for or lack of support are consistent with previous research findings (Affonso, Mayberry, & Sheptak, 1988; Coffman, Levitt, Deets, & Quigley, 1991; Tulman & Fawcett, 1988).

Adjustment Related to Experience

The qualitative data in Study 3 gave a voice to the emotional impact of motherhood challenges. In this small sample, emotions were described in seventeen different ways. It was clear that some aspects of early motherhood experience provoked a strong negative response, including feeling frustrated, overwhelmed, sad and isolated. A meta-analysis of 33 studies related to parenthood experience during the first year (Nystrom & Ohrling, 2004) similarly reflected numerous feelings; powerless and inadequate (Ahlborg & Strandmark, 2001), guilty, exhausted, ambivalent, resentment and anger (Hall, 1992), disappointed (McVeigh, 1997), lonely and isolated (Sethi, 1995; Barclay et al., 1997; Olsson, Jansson, & Norberg, 1998; Rogan, Shimed, Barclay, Everitt, & Wyllie, 1997), and confused (Barclay et al., 1997; Olsson et al., 1998; Rogan et al., 1997). Similarly, Beck's (2002) meta-synthesis of 18 qualitative studies of motherhood experience and postpartum depression identified four overarching themes, within

which feelings of isolation, being overwhelmed, anger, disappointment, and anxiety were common, amongst others.

Findings of feelings related to specific challenges have been shown in studies of both general (Lupton, 2000) and clinical (Beck, 2002; Buultjens & Liamputtong, 2007; Shakespeare et al., 2004; Wardrop & Popadiuk, 2013) populations of postpartum women in relation to motherhood experience, with caution required when interpreting results from clinical populations, where the frequency or severity of emotions reported may be skewed. Longitudinal qualitative research with 25 women recruited mostly via antenatal classes at a Sydney hospital found they were insufficiently prepared for the practical skills required. Specifically, infant care tasks including identifying the meaning of infant cries, soothing, feeding, changing and bathing were more difficult than expected. The unremitting nature of infant care and the impact of time for themselves demand on their time and the responsibility was noted, as were feeling of frustrated and overwhelmed (Lupton, 2000).

In a study of 39 women with probable postnatal depression, 15 reported breastfeeding difficulties, with associated feelings of failure, being miserable and out of control (Shakespeare et al., 2004). Another study interviewed 6 women with a postnatal experience characterised by high anxiety, regardless of a formal diagnosis. All participants felt overwhelmed in the first few weeks postpartum, in relation to managing infant care tasks, and the associated time and responsibility (Wardrop & Popadiuk, 2013). Further, a qualitative study of 10 women diagnosed with postnatal depression in an Australian hospital mother and baby unit, described motherhood experience and related feelings (Buultjens & Liamputtong, 2007). Results showed that caring for a baby could be very demanding generally, and specifically highlighted the difficulty in managing infant crying, lack of sleep, an unsettled baby, with associated

feelings of anxiety and hopelessness. As in Study 3 and (Butchart, Tancred, & Wildman, 1999), the unhelpful impact of contradictory advice was also emphasised and was associated with feelings of confusion and frustration.

The apparent connection in Study 3 between motherhood challenges and emotional responses is consistent with findings from Study 1 and 2 of a relationship between experience and adjustment. Indeed, the temporal relationship described of feelings to experience in Study 3 is suggestive of causal relationship.

Maternal Self-efficacy and Learning

The idea that learning may benefit how well mothers manage early motherhood is further supported by the self-reported increase in maternal self-efficacy over the weeks and months following the birth of their first child, for all but one participant. Comments in the present study reflected increasing confidence as mothers became familiar with their new baby and mastered the various aspects of being a mother, in accordance with Bandura's (1997) theory that efficacy expectations are derived from direct experience with a task or similar tasks. This corresponds to the finding from a meta-synthesis of 8 quantitative studies of a significant increase of maternal self-efficacy over time from baseline (Leahy-Warren & McCarthy, 2011) and other individual studies (Froman & Owen, 1990; Hudson, Elek, & Flek, 2001).

That motherhood is a period of learning (Leahy-Warren & McCarthy, 2011) was illustrated in Study 3, with mothers' comments suggesting their learning was not restricted to skill-related activities, but rather was reflective of knowledge acquired about their own capabilities and capacities. They also reported that they learned the transient nature of both the enjoyable and the challenging aspects of motherhood. Learning was also revealed in multiparous mothers' tendency when faced with a concern (e.g. illness, colic) to *wait and see* rather than *act* as they reported doing with

their first child. Thus, perhaps the learning in motherhood is about the nature of the challenges; duration, frequency, severity, along with what skills, support, resources are required to address them, and what capacity and competencies mothers have acquired and can access to cope with subsequent demands. Indeed, this could be seen in their advice to expectant mothers, whereby the learning acquired by mothers was expressed in relation to four issues; asking for and accepting help, lowering expectations, the transient nature of both the good and challenging aspects, and trusting in yourself.

Learning Opportunities

Study 3 highlighted antenatal and postnatal learning opportunities for mothers with a new baby. Results emphasized the benefits to new mothers of mothers groups, both in person and online, consistent with previous research (Abriola, 1990; Gordon, Robertson, & Swan, 1995; Guest & Keatinge, 2009; Hanna, Edgecombe, Jackson, & Newman, 2002; Johnson et al., 2000; Scott, Brady, & Glynn, 2001; Wardrop & Popadiuk, 2013). Almost all first-time mothers in Study 3 participated in a mothers group and almost all the multiparous mothers indicated they had attended one with their first baby. The value was predominantly described as being in regular contact with others going through a similar experience at roughly the same time, consistent with previous findings (Abriola, 1990; Darvill et al., 2010; Guest & Keating, 2009; Scott et al., 2001; Tammentie et al., 2004). Observing and comparing the development of other infants to their own baby was also noted as important and reassuring, as reported by Abriola. Further, through conversations with the mothers it was clear that reflection and learning was a key component of the operation of the mothers groups. That is, the discussion and sharing of strategies trialed, outcomes observed, ideas for subsequent strategies developed were reported, again consistent with prior research (Abriola,

1990; Guest & Keatinge, 2009). This is consistent with Kolb's (1984) theory of experiential learning, a key component of which is reflection.

While mothers groups presented a postnatal learning opportunity, antenatal education classes presented the chance to learn in advance of babies' arrival. All first-time mothers had attended antenatal classes and all multiparous mothers had attended prior to the birth of their first child. Women's memories of the antenatal class content reflected birth experience and pain management options as common to most, with infant care practices much less so. This is consistent with previous findings whereby the focus of antenatal classes on the birth experience has been viewed as disproportionate to the information provided about managing with a new baby (Barclay et al., 1997; Barnes et al., 2008; Ho & Holroyd, 2002; Renkert & Nutbeam, 2006). Lack of parenting information in antenatal class education has been previously indicated, with a stated desire for practical tips about infant care and breastfeeding (Svensson, Barclay, & Cooke, 2006).

More than half the sample indicated a preference for more information in the lead-up to childbirth. Most of these mothers specified infant care, including breastfeeding, wrapping and settling, colic and reflux and sleeping, while others desired information about infant development and the childbirth experience. The desire for infant care information corresponds with qualitative data collected from 324 women who commented on postpartum challenges, as part of PRAMS study (ongoing population-based data collection re perinatal and maternal health indicators in the United States) about the experience of being a new mother (Kanotra et al., 2007). Researchers identified six key postpartum concerns, with a lack of education about newborn care after discharge among 21% of mothers, behind a need for social support (32%), and help with breastfeeding (24%). Women specified needing advice on holding,

bathing, and clothing the baby, and the desire for more information was not restricted to fist time mothers, with mothers of multiple children indicating they had forgotten things and would welcome a "refresher". Mothers in this study also indicated they did not feel that information about what to do once the baby has arrived was easily accessible to them.

Previous studies found similar results, including a survey of both first-time and multiparous women (N = 1161) in the USA at 7 weeks postpartum, in which more than 75% of participants wanted more information on self- and baby-care (Moran, Holt, & Martin, 1997). Of primiparous mothers (n = 540), 87% wanted more information on baby care topics, compared to 61% of multiparous mothers (n = 621). The baby care topics for which more information was most frequently desired were recognising baby illness, baby's schedule, and calming a crying baby. Overall, primiparous mothers wanted information on more baby-care topics whereas multiparous mothers wanted information on more self-care topics.

Other small qualitative studies in the postpartum have identified a range of topics about which mothers' have indicated they would like more information. These included baby bathing and feeding, infant development, infant crying, the emotional impact of motherhood, fatigue and depression (Young, 2008) and baby illnesses and first-aid, home safety, toys, and maternal post-birth physical care (Butchart et al., 1999). Common to results of both studies, and to the findings of Study 3, was some mothers' need for information about what is "normal" in relation to infant development.

Given the above, there seems little no doubt that women would like more information about parenting skills and infant care in antenatal classes.

Summary

In summary, the qualitative material collected in this Study 3 is consistent with and augments the quantitative data collected in Study 1 and 2. Study 3 found that the experience of caring for a new baby can be challenging and surprising and that this can be accompanied by a strong emotional response. The increase in maternal self-efficacy over time, as mothers learned through experience, is an important component in how previous experience benefits subsequent experience. While motherhood learning includes infant care skill development, it also relates to knowledge gained about the nature of the experience, infant behaviour and development, and about mothers' capacities and competencies. Findings from Study 3 suggest that previous motherhood experience does operate to benefit subsequent experience, adding strength to the argument for experience as causal in adjustment. Nonetheless, as previously mentioned, the causal direction between experience and adjustment remains unsettled. This is further discussed in the following chapter.

Chapter 6

General Discussion

The aim of this thesis was to determine whether day-to-day motherhood experience itself is a risk factor for postpartum adjustment difficulties. Experience was identified as a predictor of postpartum adjustment in Studies 1 and 2, with postnatal depression and postnatal anxiety similarly affected. This is consistent with previous findings of the negative relationship to adjustment of childcare stress (Cutrona, 1983, 1984; O'Hara et al., 1984; Terry, 1991b, 1994), worries about infant-caretaking (Høivik et al., 2013) and infant-related stressors (Akman et al., 2006; Britton, 2011; Hopkins et al., 1987; Mantymaa et al., 2006; McMahon et al., 2001; Shakespeare et al., 2004; Vik et al., 2009).

Motherhood experience was related to adjustment in all three studies. Strong correlations were found in Studies 1 and 2, and reinforced by the nature and frequency of comments volunteered in Study 3. It is clear that mothers' ease or difficulty in managing with a new baby is relevant to psychological well-being. The relationship was apparent after controlling for previous history, either as antenatal mood in Study 1 or as previous history of psychological difficulties in Study 2. Further, the relationship between experience and adjustment was found in both primiparous and multiparous mothers. The findings are consistent with the diathesis-stress model, that perception of current experience and circumstances affects psychological functioning (Beck, 1967; Brown et al., 1987; Ingram & Luxton, 2005; Lewinsohn et al., 1985).

The ease or difficulty managing with a new baby was also related to maternal self-efficacy in all three studies. Indeed, in Study 1, it mediated the relationship between motherhood experience and postnatal depression and anxiety. This is consistent with

previous findings of maternal self-efficacy as a mediator between postnatal depression and infant temperament (Cutrona & Troutman, 1986), social support (Cutrona & Troutman, 1986; Haslam et al., 2006) and stressful life events (Maciejewski et al., 2000). Further, higher levels of maternal self-efficacy were found postnatally than antenatally in first-time mothers (Study 1) and in multiparous than primiparous mothers (Study 2). In Study 3, all but one mother expressed an increase in confidence over time caring for their first baby, with the remaining mother stating that her baseline high level of confidence stayed constant. These results are consistent with previous findings of an increase in maternal self-efficacy from baseline (Froman & Owen, 1990; Hudson et al., 2001; Leahy-Warren & McCarthy, 2011).

While learning was not measured in this research, it may be that increased self-efficacy and greater ease managing motherhood experience was a function of learning through concrete experience, consistent with the theory of experiential learning (Kolb, 1984). Study 2 and 3 found that previous experience in the form of parity demonstrated a benefit in day-to-day infant care, with multiparous mothers finding the care of a new baby easier than first-time mothers. Parity was, however, no more strongly related to skill-based aspects of managing with a new baby than less controllable aspects and this implied that the benefit of experience was more general. Mothers' comments in Study 3 suggested the benefit related to learning through their own experience. Specifically, they learned skills and acquired knowledge about patterns of infant development and behaviour, their own capacities and competencies, and the nature of motherhood, in particular the transient nature of both the good and challenging aspects.

The relationship of experience to adjustment held for experience itself and, consistent with Harwood et al. (2007), in comparison to antenatal expectations. Expectations-experience discrepancy was strongly associated with postpartum

adjustment in Study 1 after accounting for antenatal mood. The prospective design of Study 1 enabled both the comparison of antenatal expectations and postnatal experience and ensured antenatal mood could be controlled. The findings suggest that women's expectations in the lead-up to motherhood are relevant to their later experience and to their emotional adjustment.

While the identification of discrepancies in relation to motherhood experience is consistent with previous findings (Callahan Churchill & Davis, 2010; Darvill et al., 2010; Harwood et al., 2007; Kalmuss et al., 1992; McIntosh, 1993; Miller, 2002; Read et al., 2012; Tammentie et al., 2004; Wardrop & Popadiuk, 2013), notably the discrepancies in this research were more often positive, with experience exceeding expectations. In Study 1, around one-quarter of participants had a negative discrepancy, mostly small. In Study 3, more than half the sample reported positive surprises, including the rapid progression through stages of motherhood, and satisfaction in their competence. These results correspond to findings of positive surprises in previous research (Darvill et al., 2010; Harwood et al., 2007; Lupton, 2000).

The strong relationship to adjustment of experience itself and through the filter of prior expectations, did not however, dispense with the issue of whether experience is *causal* in adjustment. Firm conclusions about cause and effect could not be drawn from the findings of this research, given the concurrent measurement of motherhood experience and postpartum adjustment variables in Studies 1 and 2, and the retrospective and subjective data collected at a single time point in Study 3.

While it is theoretically possible that a uni-directional relationship exists, whereby perceptions of experience cause adjustment, or adjustment influences perceptions of experience, a bi-directional relationship seems most likely. The effect of mood on perceptions of events more generally is well-established (Forgas, 1992, 1995,

2002; Fiedler, 2001; Innes-Ker & Niedenthal, 2002; Niedenthal & Setterlund, 1994). This has been similarly proposed in relation to stressors in motherhood (Milgrom et al., 1995; Murray & Cooper, 1997; Rowe et al., 2008). Consistent correlations between infant temperament and postnatal depression (Britton, 2011; Cutrona & Troutman, 1986; Hopkins et al., 1987; Mantymaa et al., 2006; Mayberry & Affonso, 2009; McMahon et al., 2001; Porter & Hsu, 2003; Solmeyer & Feinberg, 2011; Whiffen & Gotlib, 1989) suggest that temperament could affect depression or symptoms of depression may negatively distort mothers' perceptions of baby temperament, and further, that the relationship may operate in both directions. Further support for the influence of mood on perceptions of experience is provided by findings of a prospective relationship between *antenatal* anxiety and infant temperament (Austin et al., 2005; Davis et al., 2004, 2007; Van den Bergh, 1990; Zuckerman, Bauchner, Parker, & Cabral, 1990). In Austin et al.'s (2005) study of 970 women, antenatal anxiety scores exceeding a cut-off of 40 on the STAI-T (Spielberger et al., 1970) were associated with 2.56-fold increase in the odds of difficult infant temperament at 4 or 6 months, rated by mothers. Austin et al. (2005) and Britton (2011) queried whether maternal psychological characteristics influenced perceptions of infant behavioural characteristics. This pattern is arguably possible in the wider motherhood experience, where symptoms of depression and anxiety, which may result from unrelated stressors, might influence new mothers' perceptions of the ease or difficulty in managing.

Nonetheless, there are indications from the results of Study 1 that experience might be a causal factor in adjustment. Correlations between experience and adjustment *postnatally* were stronger than between mood and expectations *antenatally*. This implied that events for mothers during the early weeks with a new baby were of greater significance to their psychological functioning. This picture may have been

clouded by the strong correlation of antenatal to postnatal adjustment variables, suggesting postnatal adjustment may be a function of antenatal mood, where a level of antenatal distress continues into the postpartum. However, when antenatal mood was controlled for, experience explained additional variance in each of depression, anxiety and well-being. Also relevant to the cause and effect issue is that antenatal expectations predicted experience ratings in first-time mothers in Study 1, which points to the possible role of perception as a determinant of experience. However, experience was a strong predictor of adjustment after controlling for expectations (along with antenatal mood).

Further suggestions of experience as causal are provided by individual components of motherhood experience related to postpartum adjustment that appear more likely to provoke an emotional response, and which could in all likelihood not be caused by psychological distress. For instance, breastfeeding difficulties (Abou-Dakn et al., 2009; Kanotra et al., 2007; Mortazavi et al., 2014; Shakespeare et al., 2004; Smith, 1989; Watkins et al., 2011; Zubaran & Foresti, 2013), such as pain, cracked nipples, inflammation and mastitis are far more likely to cause psychological distress than to be caused *by* distress.

If experience is causal, differences in experience should result in corresponding differences in adjustment and this was tested in Study 2. Mothers who have already been through the experience of caring for a new baby are by definition more experienced, and so first-time and multiparous mothers were compared on ease or difficult in managing and on adjustment. While a difference in experience in the form of parity did result in greater ease in managing day-to-day aspects of motherhood experience, this did not translate to improved adjustment. Although this could mean the premise that experience influences adjustment was false, there is an alternative

explanation of the findings. The results could be explained by the presence of other factors negatively influencing adjustment in multiparous mothers. For example, the challenge of managing multiple children was frequently reported by multiparous mothers in Study 3. This was consistent with suggestions by Mercer and Ferketich (1995) in their study of experienced and inexperienced mothers, that mothers of more than one child operate in a more complex environment and are concerned with caring for their other children in addition to the new baby. A more confident interpretation of multiparas' lack of corresponding benefit in adjustment to greater ease in managing might have been possible if previous findings regarding the relationship between multiparity and adjustment were consistent but, as outlined in Chapter 3, this is not the case.

Differences in experience may also result from programmes that target parenting and their effect on adjustment informs the cause and effect issue. A small number of educational interventions target potential parenting difficulties (Hiscock et al., 2014; Milgrom et al., 2011; Osman, Saliba, Chaaya, & Nassan, 2014), and preparation for parenting, antenatally (Matthey, Kavanagh, Howie, Barnett, & Charles, 2004; Svensson, Barclay, & Cooke, 2009), or postnatally (Fisher et al., 2010). Interventions that included measures of parenting or infant care and showed that these improved found the improvement was accompanied by less postnatal depression (Fisher et al., 2010; Hiscock et al., 2014; Milgrom et al., 2011) or postnatal stress (Osman et al., 2014). Milgrom et al.'s (2011) "Towards Parenthood" programme blends Cognitive Behavioural Therapy (CBT) with parenting preparation, delivered antenatally and postnatally. Material relevant to motherhood experience is covered across nine units, including education about the need for social support, facilitating realistic expectations of upcoming changes and caring for a newborn, problem-solving skill development, self-

care, relationship changes, behavioural and cognitive strategies for coping with emotional distress, and reflections on actual experience after the birth of the baby. The intervention was compared to routine care in a pre post RCT study of 143 primiparous and multiparous mothers, and demonstrated benefits on parenting and adjustment variables. After controlling for antenatal depression scores, lower levels of depression at 12 weeks postpartum were found in the intervention than control group, and similarly for anxiety and stress. Further, fewer cases above clinical thresholds for mild depression, anxiety and stress were detected in the intervention than control condition. Scores on the index of parent dysfunction were significantly lower in intervention than control, suggesting that the intervention had been effective in targeting possible challenges in caring for a new baby. While this effect may have been the result of the parent-training component of the programmes, the efficacy of the individual components was not analysed in this study.

Another example of an intervention that benefitted experience *and* adjustment is "What were we thinking!"; a postnatal interactive education programme for first-time parents, developed to promote parental caretaking, strengthen the parent relationship, improve infant manageability and reduce postpartum distress (Fisher et al., 2010). The half-day, structured intervention included education and hands-on practice about infant care and recognition of infant cues, infant temperament and distress, infant sleep, and strategies to assist in settling and establishing sleeping and feeding routines. It also included a component in which parents reflect on discrepancies between antenatal expectations of parenthood and their postnatal experience, to highlight challenges and devise strategies to modify support arrangements and agreements about domestic and employment workloads. In a pre and post RCT of 346 women, the intervention was compared to standard care. More than three-quarters of the intervention group

completed a questionnaire at the end of the programme. Almost all indicated increased understanding in activities related to motherhood experience, such as infant sleep needs, temperament, sleep and settling strategies. Around two-thirds of these women indicated an increase in infant-care confidence. For women with no previous history of psychological difficulties, significantly fewer in treatment than control met criteria for a diagnosis of postnatal depression or anxiety at 6 months postpartum. A difference was not found for women with a previous history, despite the evident widespread value in the information provided in the programme. Given their greater vulnerability to psychological distress, it may be that additional interventions are required to assist these women.

Not all such programmes have been effective, however. Another educational intervention directed at modifiable factors related to postpartum depression, but without a specific focus on parenting or infant care, was not found efficacious in relation to reducing depressive symptoms. The programme addressed infant colic, postpartum physical and emotional health, and the importance of support, and did not result in a difference in depressive symptoms between intervention and enhanced usual care (Howell et al., 2014). Notably however, no measure of change to parent knowledge or skill as a result of the intervention was included in the study.

As an extension of the above test of experience's causality, a trial that produces no change to motherhood-related experience should likewise result in no treatment effect. This was illustrated in results of a supportive intervention targeting mother-infant relationship to prevent postnatal depression, that included postnatal assistance in managing infant sleeping, crying and feeding difficulties (Cooper, De Pascalis, Woolgar, Romaniuk, & Murray, 2014). Their RCT of 301 women found no manipulation effect of the intervention and no corresponding benefit to postnatal depression.

Summarising, interventions that targeted living with a new baby have showed improvements, including less parenting dysfunction, greater understanding about infant care, development, and behaviour, as well as increased confidence in baby care, with corresponding benefits to postnatal adjustment. Although this does suggest improvement in experience influences adjustment, a definitive test would require a post-intervention measure of experience and this could be addressed in further research. The best test would involve a RCT, to eliminate selection bias, control for confounding variables and ensure differences in outcome are attributable to the intervention alone (Schulz, Altman, & Moher, 2010). All measures and the intervention should be in the postpartum. Further, the intervention would ideally be tested against an active control such as an effective standard psychological intervention targeting improvements in postnatal depression and anxiety, such as CBT (e.g., Chabrol et al., 2002) or Interpersonal Psychotherapy (O'Hara, Stuart, Gorman, & Wenzel, 2000). The use of an active control, as distinct from a control comprising treatment as usual, limits the possibility of results confounded by the provision of any intervention versus no intervention (Mohr et al., 2009), such as nonspecific treatment effects, demand effects or even placebo effects. Subject to a manipulation check, improvements in depression and anxiety in the intervention condition would indicate a causal relationship between experience and adjustment.

The direction of the experience-adjustment relationship could be similarly tested by the effect on experience of an intervention targeting postnatal depression or anxiety. For example, an outcome measure of motherhood experience could be added to an efficacious postnatal psychological intervention that addresses postpartum adjustment (e.g., Chabrol et al., 2002; O'Hara et al., 2000). Corresponding improvements in experience to improvements in adjustment would demonstrate the causal nature of

adjustment. Of course, this would not eliminate the possibility of causality in the opposite direction and may provide partial evidence for the proposition of a bi-directional relationship.

In summary, the ease or difficulty managing with a new baby is strongly associated with postnatal adjustment. The relationship holds for experience alone and in comparison to antenatal expectations, irrespective of psychological history, and for first-time and multiparous mothers. Maternal self-efficacy was also strongly related to experience, suggesting it may be the mechanism operating between experience and adjustment. While there are indications that experience may be causal in adjustment, this could not be definitively resolved in this research. Modification of experience followed by a measure of adjustment in a RCT would be the best test of this. If experience is a causal factor in adjustment, then interventions directed at improving experience might be expected to prevent or mitigate poor adjustment.

Depression and Anxiety as Separate Aspects of Postpartum Adjustment

As in previous studies (Austin et al., 2010; Green, 1998; Heron et al., 2004; Matthey, 2004; Matthey et al., 2003; Miller et al., 2006; Pope, 2000) this research raised questions about depression and anxiety as separate indices of postpartum adjustment. The debate in the perinatal literature regarding their individual identification and treatment, whether alone or comorbid, remains inconclusive and relevant issues are outlined below. It is not uncommon, however, for postnatal depression and anxiety to be analysed and reported separately in perinatal studies (e.g., Austin et al., 2008; Britton, 2011; Dipietro et al., 2008; Milgrom et al., 2011; Paul et al., 2013; Rallis et al., 2014). In this research, the decision was taken to analyse the three indices of postpartum adjustment individually, rather than as one integrated measure, with the intention of making explicit the individual relationships to motherhood experience.

The separate identification of perinatal depression and anxiety has been recommended for accuracy in incidence and prevalence studies (Austin et al., 2010; Matthey et al., 2003), and to ensure targeted interventions for the benefit of individual women in clinical settings (Austin, 2004; Austin et al., 2010; Matthey, 2004; Matthey et al., 2003). Arguments have been made against a "one size fits all" (Austin et al., 2010, p. 400) approach to the assessment and treatment of perinatal depression and anxiety and suggest solutions tailored to women's individual presentation are likely to produce outcomes of greatest benefit (Austin et al., 2010; Matthey, 2004). Despite increasing separate detection of anxiety and depression perinatally, prevention and treatment studies remain characterised by a focus on postnatal depression, indicated in the use of depression-related outcome measures (Matthey, 2004). This impedes analysis of specifically targeting anxiety or depression.

Further, given antenatal anxiety is often a stronger predictor than antenatal depression of both postnatal depression and anxiety, it has been suggested that being able to identify anxiety is important as part of identifying women at risk of later psychological difficulties (Austin, 2004; Austin et al., 2007; Heron et al., 2004; Matthey et al., 2003; Matthey, 2004; Sutter-Dallay, Cosnefroy, Glatigny-Dallay, Verdoux, & Rascle, 2012). It has also been suggested that anxiety could be overlooked if it presents alone and the measure is not sensitive to it (Austin et al., 2010). Another argument in favour of separate identification relates to the different trajectories of depression and anxiety (Penninx et al., 2011), as illustrated in a decline in both pre to post childbirth, but a rise in anxiety and not depression post childbirth into the postpartum (Heron et al., 2004). In relation to clinical treatment approaches, in general populations, comorbid depression and anxiety, or "anxious depression", has been reflected in more severe

symptoms, is more difficult to treat and shows poorer outcomes in general populations (Emmanuel et al., 1998; Gorman, 1996/1997; Rivas-Vazquez et al., 2004).

These points outweigh arguments for not distinguishing between depression and anxiety, including concerns about redundancy in strongly correlated measures, the suggestion that, given the high levels of comorbidity between them, distinguishing between depression and anxiety is difficult and artificial (Aina & Susman, 2006), and that in research settings, brief screening measures for "non-specific psychological distress" (Kessler et al., 2002, p. 960) that do not specifically identify depression and anxiety, meet requirements for detecting mood and anxiety disorders.

The benefits of discreet conceptualisation and treatment of anxiety and depression are relevant to this issue. Depression and anxiety both respond positively to pharmacological treatments such as antidepressant medication (Gorman, 1996/1997) and psychological treatments like CBT (Butler, Chapman, Forman, & Beck, 2006) and mindfulness (Hofmann, Sawyer, Witt, & Oh, 2010). Further, in co-morbid presentations, psychological treatment of one has benefitted both (Allen et al., 2010; Borkovec, Abel, & Newman, 1995; Tsao, Mystkowski, Zucker, & Craske, 2002; Tsao, Lewin, & Craske, 1998). This has implications when depression and anxiety respond similarly to a stressor, as was found in this research.

Results of Study 1 and 2 revealed more similarities than differences between the indices of adjustment. The rate of postnatal depression was similar to that of postnatal anxiety in both Study 1 and Study 2. Depression, anxiety and well-being were also similarly related to motherhood experience in both studies. In Study 1, motherhood experience explained slightly less variance in anxiety than depression, although the difference was greater in Study 2. Depression and anxiety were strongly inter-correlated (r = .71 to .84), consistent with general populations (Clark & Watson, 1991;

Watson et al., 1995) and postpartum samples (Green, 2005; Heron et al., 2004; Micali et al., 2011; Moss et al., 2009; Skouteris et al., 2009). While the strong correlations between depression and anxiety could reflect overlap in symptoms or in the assessment measures used (Stuart et al., 1998), they may also reflect high levels of comorbidity of the two conditions. In Study 1, two thirds of women suffering one also experienced clinical levels of the other, and in Study 2 this was the case for fifty percent, corresponding with findings in general (Hirschfeld, 2001; Kessler et al., 2008; Sanderson et al., 1990; Sartorius et al., 1996) and postpartum populations (Matthey et al., 2003; Reck et al., 2008). Given the above, the similarities between depression and anxiety in this research likely reflected mothers' more general psychological distress. Nonetheless, given one third to one half of women in this research had either clinical depression or anxiety but not both, the separate assessment of these disorders is warranted to ensure mothers' specific difficulty is not missed.

Importantly, this research did not test whether key risk factors for postpartum difficulties, including quality of marital relationship and stressful life events, were differentially related to postpartum depression and anxiety, so the correspondence observed may not be the end of the story. Differences in depression and anxiety relative to these additional risk factors would also support separate assessment and treatment of these psychological conditions.

In summary, postnatal depression and postnatal anxiety were similarly related to motherhood experience and expectations-experience discrepancy. The comparable patterns in postnatal depression and anxiety in Study 1, Study 2 and previous research lend weight to the argument of overlap and might imply redundancy in assessment. However, the morbidity and comorbidity rates and antenatal anxiety as a predictor of

both postnatal anxiety and postnatal depression support the argument for separate assessment and diagnosis of each.

Methodological Considerations

This research developed and used a measure of the ease or difficulty managing with a new baby. The same measure was used antenatally and postnatally and with primiparous and multiparous mothers, enabling true comparisons between time points and samples. The identification of skill-related and less controllable aspects of motherhood allowed separate investigation of them, not previously addressed in research, with findings that skill-related aspects were easier to manage than less controllable ones, but were not moderated by parity. The validity of the experience measures developed for this research has not been tested however, with the domain subscales particularly uncertain given the strong correlation between them.

Despite its consistent finding as a risk factor for postpartum adjustment difficulties, social support provided in the postpartum (Aktan, 2012; Chaaya et al., 2002; Dennis & Ross, 2006; Gjerdingen & Chaloner, 1994; Howell et al., 2006; Leahy-Warren et al., 2011; O'Hara et al., 1983) the results of this research did not correspond with this. Social support could not be analysed in Study 1 due to ceiling effects and the high proportion of mothers living with partners, and showed no effect in Study 2. The relevance of postpartum social support to the relationship between adjustment and experience is that it may mitigate difficulty in mothers' managing with a new baby. Given the strength of the relationships found between experience and adjustment, however, it may be that the impact of any undetected effect of social support on the overall findings would be limited.

One further limitation is small sample sizes in each of Study 2 and Study 3. This has implications for reliability of results.

Clinical Implications

While further research would be needed to firmly establish the causal nature of the relationship between experience and adjustment, in clinical settings this point is possibly of less importance. If mothers perceive experience as difficult, there may be adverse consequences, including to their relationships with others and their help-seeking behaviour. That is, they may withdraw from or not disclose their difficulty to others out of concern about negative judgments. This in turn may limit others' awareness and support of them at a stressful time. Thus, whether motherhood experience is a cause or an outcome of postpartum adjustment it merits attention.

Thus, in women presenting with postpartum difficulties, there may be benefit in including a targeted assessment of motherhood experience in their overall evaluation. This may be achieved by explicitly asking how they are managing with the care of the baby, their own needs, and changes in relationships, role, income and their physical self in the early weeks and months. Regardless of any specific intervention targeting motherhood experience, clinicians might place additional or specific emphasis on addressing identified difficulties.

Similarly, extending standard clinical practice to include a focus on motherhood experience, findings from this and other research that early motherhood can be stressful and related to emotional functioning could be used as a strategy to validate mothers' own experience. Sharing the evidence that mothers benefit from previous experience and that this increases maternal self-efficacy and ability to manage challenges encountered may provide comfort and hope. Given the relationship of maternal self-efficacy to experience, if mothers perceive motherhood as difficult, this is likely to be associated with negative beliefs about their competence and lower self-confidence. This implies possible benefit in targeting maternal self-efficacy in clinical

settings. Further, the mediation of the relationship between experience and adjustment by maternal self-efficacy in Study 1 suggests that a strengths-based approach, highlighting and drawing on mothers' learning during early motherhood, for application with subsequent challenges, thereby increasing maternal self-efficacy, may benefit symptoms of depression and anxiety.

If motherhood experience is definitively shown to *influence* adjustment, its modifiable nature may present opportunities for improvement, in contrast to fixed or historical risk factors for postpartum adjustment difficulties. Mothers' desire for additional information about some aspects of motherhood suggests opportunities might exist to modify existing information available to expectant and new mothers, including that provided in antenatal classes. In addition, the benefits stated in Study 3 of sharing the experience with others in a similar situation via mothers' groups suggests there may be merit in clinical interventions that incorporate a group format in the treatment of postnatal depression and anxiety.

As the relationship between experience and adjustment was tested in non-clinical samples in Studies 1 and 2, the implications of these findings may apply to postpartum populations more generally. Accordingly, this may benefit a larger number of women who experience distress at sub-clinical levels (Blazer et al., 1994; PIRI, 2009). An extension of the current research could be to investigate the relationship between motherhood experience and adjustment in clinical samples. This may indicate whether experience distinguishes women with depression from those without.

Summary and Conclusions

This research has identified motherhood experience as factor in postpartum adjustment. Mothers' prior expectations have also been recognised as significant in

relation to later experience and adjustment. The findings have implications for the assessment and treatment of women struggling to adjust with a baby, whether for the first or subsequent time, and regardless of a previous history of psychological difficulties. While there are indications that experience is causal in adjustment, the issue of cause and effect remains unresolved. Notwithstanding this, the findings imply merit in addressing motherhood experience in clinical settings involved in the treatment of postnatal psychological distress.

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Appendix A

Data Preparation and NMQ Scale Refinement Tables

Table A.01

Study 1 Percentage of Missing Data (Responses) From Antenatal and Postnatal Scales

Scale		Missing data (%)	
		Antenatal (*N* = 173)	Postnatal (*N* = 136)
NMQ	(50 items)	0.11	0.25
EDPS	(10 items)	0.29	0.51
STAI–T	(20 items)	0.23	0.70
WEMWBS	(14 items)	0.17	0.16
Maternal Self-efficacy	(10 items)	0.17	0.15
Social Support	(9 items)	0.06	0.16

Note. NMQ = New Motherhood Questionnaire; EPDS = Edinburgh Postnatal Depression Scale; STAI–T = State-Trait Anxiety Inventory Trait Subscale; WEMWBS = Warwick-Edinburgh Mental Well-being Scale.

Table A.02

Study 1 Number of Univariate Outliers Identified and Corresponding Z Scores per Scale

	Antenatal *(N = 173)*		Postnatal *(N = 136)*	
Scale	No. of outliers	*Z*	No. of outliers	*Z*
NMQ	0		0	
EPDS	2	3.76	1	3.35
		3.11		
STAI-T	1	3.08	1	3.34
WEMWBS	1	-3.13	0	
Maternal Self-efficacy	2	-3.45	2	-3.46
		-3.45		-3.05
Social support	2	-4.10	2	-5.45
		-3.53		-3.39

Note. NMQ = New Motherhood Questionnaire; EPDS = Edinburgh Postnatal Depression Scale; STAI–T = State-Trait Anxiety Inventory Trait Subscale; WEMWBS = Warwick-Edinburgh Mental Well-being Scale. Outliers > ±3. Antenatal sample includes data for which no follow up data were available.

Table A.03

Study 2 NMQ Items Identified for Deletion, by Method Used

No.	Item	Inter-item correlation	Corrected item-total correlation	Item content
6.*	Experiencing a lack of sleep	x		
10.	Talking to my baby	x		
13.	Having less freedom to do what I want to when I want to	x		
18.*	My baby being difficult to settle	x		
19.	Changes in my sexual relationship	x		
21.	Reaching agreement with my partner or another adult about sharing household tasks	x		x
22.	Holding my baby for long periods	x		x
23.	Having less time alone with my partner	x		
26.*	Having sore and/or cracked nipples from breast-feeding	x		x
32.	Massaging my baby	x		x
33.	Restrictions to my social life	x		x
34.	My sleep being interrupted	x		
35.	Laughing with my baby	x		
37.	Losing my independence	x		
41.	My life lacking variety	x		
43.	My baby having nappy rash or a cold		x	
44.	My baby crying for long periods	x		
47.	Receiving advice from other people			X
48.	Being isolated from friends and/or the work world	x		

Note. * item retained, NMQ = New Motherhood Questionnaire

Table A.04

Study 2 NMQ-19 Items per Mothering Domain Subscales

Skill-based items	Less controllable items
My baby establishing a feeding and sleeping routine	Experiencing a lack of sleep
Taking my baby with me to do errands	Changes in the relationship with my partner
Changing my baby's nappy frequently	Having sore and/or cracked nipples from breast-feeding
Learning to breastfeed my baby	Having less time with friends
Bottle feeding my baby	Having more periods of boredom
Learning to wrap and settle my baby	My baby sometimes being distressed
Bathing or showering my baby	Being tired and fatigued
When my baby cries, identifying the problem and comforting them quickly	My baby having colic
Learning to burb my baby	Having a fussy baby
	Having an unwell baby, with a minor ailment like a rash or a cold

Note. NMQ-19 = New Motherhood Questionnaire (19 item).

Table A.05

Study 2 Percentage of Missing Data (Responses) by Scale (N = 66)

Scale		Missing data (%)
NMQ-37	(37 items)	0.45
EDPS	(10 items)	0.90
STAI–T	(20 items)	3.18
WEMWBS	(14 items)	0
Maternal Self-efficacy	(10 items)	1.82
PSQ – support importance	(34 items)	9.40
PSQ – support received	(34 items)	12.30

Note. NMQ-37 = New Motherhood Questionnaire (37 item); EPDS = Edinburgh Postnatal Depression Scale; STAI–T = State-Trait Anxiety Inventory Trait Subscale; WEMWBS = Warwick-Edinburgh Mental Well-being Scale; PSQ = Postpartum Support Questionnaire.

Table A.06

Study 2 Number of Univariate Outliers Identified and Corresponding Z Scores per Scale (N = 66)

Scale	No. of outliers	*Z*
NMQ-37	0	-
Skill-related Domain	1	2.80
Less Controllable Domain	0	-
EPDS	2	2.98, 4.45*
STAI-T	1	3.68*
WEMWBS	1	-2.77*
Maternal Self-efficacy	1	-2.97
PSQ – support importance	0	-
PSQ – support received	0	-

Note. NMQ-37 = New Motherhood Questionnaire (37 item); EPDS = Edinburgh Postnatal Depression Scale; STAI–T = State-Trait Anxiety Inventory Trait Subscale; WEMWBS = Warwick-Edinburgh Mental Well-being Scale; PSQ = Postpartum Support Questionnaire. * denotes same case. Outliers > ± 2.5.

Appendix B

Participant Information Sheets and Consent Forms

Study 1

Charlotte Tottman
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Flinders University
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Tel: (+61 8) 8201 7920
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Email: charlotte.tottman@flinders.edu.au

Dear Madam,

PARTICIPANT INFORMATION SHEET

You are invited to participate in a research project –

Expectations and experiences of new motherhood

Researcher: Charlotte Tottman
PhD (Clinical) Candidate, Psychology, Flinders University
Supervisor: Dr Julie Mattiske
Associate Dean, School of Psychology, Flinders University

This study is being undertaken as part of the requirement for Charlotte's PhD in Clinical Psychology.

Purpose of study:

This research project concerns the expectations and the experiences of new motherhood for women having their first child.

Pregnancy is a time of much anticipation. In this study we are interested in women's views about what it will be like to be a mother and to care for a new baby. Then, a few months after the birth of their baby, we would like to find out how they are getting on and about their experience of new motherhood.

Procedure:

If you choose to participate, we will ask you to complete one questionnaire in the third trimester of your pregnancy, and a second questionnaire that will be emailed to you in the first few months after the birth of your baby.

The questionnaire can be completed either online, through a secure internet survey, or on paper.

The questionnaire is expected to take about 15 minutes to complete.

It consists of a number of questions about the practical aspects of new motherhood (i.e. feeding, sleeping, changing, bathing, caring for infant), and participants will be asked to respond by selecting the answer of their choice.

The questionnaire also includes questions about your emotional well-being and social support before and after the birth of your baby, and some basic background information like your date of birth, postcode and usual occupation.

Potential Benefits

The possible benefits of this research to the community are that it will increase our understanding of the link between women's expectations and experiences of new motherhood and how their experiences relate to their sense of confidence and well-being. Whilst you will not personally benefit from participating in this study, your contribution will likely benefit others in the future.

Risks

We don't think that completing the questionnaire will cause any distress, but should it raise any issues you would like to discuss, we have provided suggestions below of services that can provide you with support.

- Your General Practitioner or Mental health professional
- beyondblue 1300 224 636

Issues involved with participation in research

Your participation in this study is entirely voluntary and you are completely free to refuse to participate. You have the right to withdraw from the study at any time without penalty. If you decide not to participate in the study or if you withdraw from the study, you may do this freely and your medical care/relationship with the hospital or any other services that you receive will not be affected in any way.

Confidentiality issues

Information provided by participants will remain confidential. You will not be identified by name. Instead you will be asked to provide a 4 digit code known only to you. The code will be made up from the first two letters of your surname followed by your day of birth (e.g. SM06 for Jane Smith born on the 6th of the month). The code will enable the researcher to link all your responses from both questionnaires, without personally identifying you.

While you will also be asked to provide your email address in order to receive a link to the second survey, this information will be securely stored by the researcher until the study is complete, after which the record of the email address will be destroyed.

The online survey information is held on a University server that is located on campus and maintained by a Flinders University System Administrator in accordance with the University's Information Technology policy.

All records will remain confidential and no information that could lead to your identification will be released without your written consent. It is your right to obtain copies of certain parts of information gathered during the research should you wish.

Your information will remain confidential except in the case of a legal requirement to pass on personal information to authorised third parties. This requirement is standard and applies to information collected in both research and non-research situations.

You should be aware that data gathered through this research may be published in scientific journals or presented at conferences, but you will not be able to be identified in any manner in these publications or presentations.

Outcomes

A brief summary of the overall results of the study will be available to all participants by email. You will be able to indicate if you would like to receive this by checking a box on the questionnaire.

Compensation

If you suffer injury as a result of participation in this research or study, compensation might be paid without litigation. However, such compensation is not automatic and you may have to take legal action to determine whether you should be paid.

Questions or concerns

If you would like further details about the project, either before, during or after the study, you may contact the researcher, Charlotte Tottman, School of Psychology, Flinders University, GPO Box 2100, or at charlotte.tottman@flinders.edu.au, or her supervisor, Dr Julie Mattiske at Julie.mattiske@flinders.edu.au.

Complaints

This study has been reviewed by the Southern Adelaide Clinical Human Research Ethics Committee. If you wish to discuss the study with someone not directly involved, in particular in relation to policies, your rights as a participant, or should you wish to make a confidential complaint, you may contact the Executive Officer on 8204 6453 or email research.ethics@health.sa.gov.au.

Kind regards,

Charlotte Tottman.

This research project has been approved by the Southern Adelaide Clinical Research Ethics Committee (Project Number:443.11). For more information regarding ethical approval of the project the Secretary of the Committee can be contacted by telephone on 8204 6453, by fax on 8204 4586 or by email research.ethics@health.sa.gov.au.

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Consent to participation in research

I, ...

(first or given names) (last name)

request and give consent to my involvement in the research project:

Expectations and experiences of new motherhood

I acknowledge the nature, purpose and contemplated effects of the research project, especially as far as they affect me, have been fully explained to my satisfaction by

.....

(first or given names) (last name)

and my consent is given voluntarily.

I acknowledge that the details have been explained to me, including indications of risks; any discomfort involved;; and the type of questionnaire.

I understand that

- I will be asked to complete two questionnaires, one in the third trimester of my pregnancy, and a second questionnaire in the first few months after the birth of my baby
- the first questionnaire can be completed either online or on paper
- the second questionnaire can be completed online
- the questionnaires take about 15 minutes to complete.

I have understood and am satisfied with the explanations that I have been given.

I have been provided with a written information sheet.

I understand that my involvement in this research project may not be of any direct benefit to me and that I may withdraw my consent at any stage without affecting my rights or the responsibilities of the researchers in any respect.

I declare that I am over the age of 18 years.

I acknowledge that I have been informed that should I receive an injury as a result of taking part in this study, I may need to start legal action to determine whether I should be paid.

Signature of Research Participant: .....

Date: .....

I,..... have described to .....

the research project and nature and effects of procedure(s) involved. In my opinion he/she understands the explanation and has freely given his/her consent.

Signature: .....

Date: .....

Status in Project:.....

Study 2

Charlotte Tottman

School of Psychology

Flinders University

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Adelaide SA 5001

Tel: (+61 8) 8201 7920
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Email: charlotte.tottman@flinders.edu.au

The Motherhood Experience

PARTICIPANT INFORMATION SHEET

You are invited to participate in a research project – The Motherhood Experience

Researcher: Charlotte Tottman, *PhD (Clinical) Candidate, Psychology, Flinders University*
Supervisor: Dr Julie Mattiske, *Associate Dean, School of Psychology, Flinders University*

This study is being undertaken as part of the requirement for Charlotte's PhD in Clinical Psychology.

Purpose of study

This research project concerns women's experience of motherhood during the early weeks with a new baby. We are particularly interested in the experience of mothers with a 5-10 week old baby; how they find specific aspects of caring for a baby and how they are feeling. We are inviting you to participate in this research project but whether you wish to or not is entirely your decision. Some women have been invited as part of their postpartum follow-up appointments with Southern Midwifery Group Practice (SMGP). If you are a client of SMGP, whether you take part or not in this study, the quality of your care provided by SMGP will not be affected in any way.

Procedure

If you choose to participate, we will ask you to complete the following questionnaire, which we expect to take about 15 minutes. You can complete it online or in hardcopy. It consists of a number of questions about the practical aspects of motherhood (i.e. feeding, sleeping, changing, bathing, caring for infant), and participants will be asked to respond by selecting the answer of their choice. The questionnaire also includes questions about your emotional well-being and social support, and some basic background information like your date of birth, postcode and usual occupation.
All participants who complete the questionnaire will be entered into a draw to win one of five Woolworths Supermarket vouchers (valid for 12 months), each for $100. At the end of the survey, when you click a DONE button, your email address will be registered in the draw. We anticipate about 100 participants will complete the survey. The draw will take place in early 2014 when all questionnaires have been completed. The winners of the vouchers will be notified by email.

Potential Benefits

The possible benefits of this research to the community are that it will increase our understanding of the experience of early motherhood and how mothers' experience relates to their sense of confidence and well-being. Whilst you will not personally benefit from participating in this study, your contribution will likely benefit others in the future.

Risks

We don't think that completing the questionnaire will cause any distress, but should it raise any issues you

would like to discuss, we have provided suggestions below of services that can provide you with support.

- Your General Practitioner or Mental health professional
- beyondblue 1300 224 636, www.beyondblue.org.au
- Pregnancy, Birth and Baby Helpline: 1800 882 436, www.healthdirect.org.au/pbb
- Post and Antenatal Depression Association Helpline (PANDA): 1300 726 306, www.panda.org.au

Issues involved with participation in research

Your participation in this study is entirely voluntary and you are completely free to refuse to participate. You have the right to withdraw from the study at any time without penalty. As the study is anonymous however, information cannot be withdrawn once submitted.

Confidentiality issues

Information provided by participants will remain confidential. You will not be identified by name.

While you will also be asked to provide your email address in order to enter the draw for the supermarket vouchers and if you are willing to be contacted regarding further participation in my research, this information will be securely stored by the researcher until the research is complete, after which the record of the email address will be destroyed. All records will remain confidential and no information that could lead to your identification will be released without your written consent. It is your right to obtain copies of certain parts of information gathered during the research should you wish. Your information will remain confidential except in the case of a legal requirement to pass on personal information to authorised third parties. This requirement is standard and applies to information collected in both research and non-research situations.

You should be aware that Charlotte intends to publish the results of this study as part of her PhD thesis and that the data gathered through this research may be published in scientific journals or presented at conferences, but you will not be able to be identified in any manner in these publications or presentations.

Outcomes

A brief summary of the overall results of the study will be available to all participants by email. You will be able to indicate if you would like to receive this by checking a box on the questionnaire.

Questions or concerns

If you would like further details about the project, either before, during or after the study, you may contact the researcher, Charlotte Tottman, School of Psychology, Flinders University, GPO Box 2100, or at charlotte.tottman@flinders.edu.au, or her supervisor, Dr Julie Mattiske on 8201 2746 or at julie.mattiske@flinders.edu.au.

Complaints

This study has been reviewed by the Southern Adelaide Clinical Human Research Ethics Committee. If you wish to discuss the study with someone not directly involved, in particular in relation to policies, your rights as a participant, or should you wish to make a confidential complaint, you may contact the Executive Officer, SAC HREC at the Flinders Medical Centre (8204 6453) or email research.ethics@health.sa.gov.au.

This research project has been approved by the Southern Adelaide Clinical Research Ethics Committee (Project Number 459.13).

Kind regards, Charlotte Tottman.

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CONSENT TO PARTICIPATION IN RESEARCH

I, ...
(first or given names) (last name)

give consent to my involvement in the research project The Motherhood Experience.
I acknowledge the nature, purpose and contemplated effects of the research project, especially as far as they affect me, have been fully explained to my satisfaction by

.....
(first or given name) (last name)

and my consent is given voluntarily.
I acknowledge that the details have been explained to me, including indications of risks; any discomfort involved; and anticipation of length of time.

I have understood and am satisfied with the explanations that I have been given.
I have been provided with a written information sheet.
I understand that my involvement in this research project may not be of any direct benefit to me and that I may withdraw my consent at any stage without affecting my rights or the responsibilities of the researchers in any respect.
I declare that I am over the age of 18 years.
I acknowledge that I have been informed that should I receive an injury as a result of taking part in this study, I may need to start legal action to determine whether I should be paid.

Signature of Research Participant: .....

Date: .....

I,.....have described to

the research project and nature and effects of procedure(s) involved.
In my opinion he/she understands the explanation and has freely given his/her consent.

Signature:.....Date:.....Status in Project:.....

Study 3

Charlotte Tottman

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Email: charlotte.tottman@flinders.edu.au

Motherhood Experience 2

PARTICIPANT INFORMATION SHEET

You are invited to participate in a research project – Motherhood Experience 2

. Researcher: Charlotte Tottman, *PhD (Clinical) Candidate, Psychology, Flinders University*
. Supervisor: Dr Julie Mattiske, *School of Psychology, Flinders University*

This study is being undertaken as part of the requirement for Charlotte's PhD in Clinical Psychology.

Purpose of study
This research project concerns women's experience of motherhood during the early weeks with a new baby; how they found specific aspects of caring for a baby, whether some aspects were more challenging than others, what made them more challenging and what might have made them easier.

We are inviting you to participate in this research project but whether you decide to or not is entirely your decision.

Procedure
If you choose to participate in the study, you will be required to

- be individually interviewed by Charlotte Tottman for 30-60 minutes, at a time, date and location of your choosing
- by participating in the interview, engage in discussion with Charlotte and answer questions about your experience of the early weeks of caring for a new baby
- with your permission, be audio recorded and have occasional written notes taken of the interview by Charlotte.

The purpose of the recording is to help ensure that I accurately capture the information you provide, and will be used to make a written copy only. If you choose not to be audio-recorded, I will take notes instead. If you agree to being audio-recorded but feel uncomfortable at any time during the interview, I will turn off the recorder at your request. Or if you don't wish to continue, you can stop the interview at any time.

To thank you for participating in the study, you will receive a $20 supermarket voucher after you have completed the interview.

Potential Benefits
The possible benefits of this research to the community are that it will increase our understanding of the experience of early motherhood, identify specific challenges and what might be helpful in addressing these. Whilst you will not personally benefit from participating in this study, your contribution will likely benefit others in the future.

Risks
We don't think that participating in the interview will cause any distress, but should it raise any issues you would like to discuss, we have provided suggestions below of services that can provide you with support.
. Your General Practitioner or Mental health professional
. beyondblue 1300 224 636, www.beyondblue.org.au
. Pregnancy, Birth and Baby Helpline: 1800 882 436, www.healthdirect.org.au/pbb
. Post and Antenatal Depression Association Helpline (PANDA): 1300 726 306, www.panda.org.au

While not directly connected to this study, these helplines are provided as well-established sources of support for women in the postpartum period.

If you suffer injury as a result of participation in this research or study, compensation might be paid without litigation. However, such compensation is not automatic and you may have to take legal action to determine whether you should be paid.

Issues involved with participation in research
Your participation in this study is entirely voluntary and you are completely free to refuse to participate. You have the right to withdraw from the study at any time without penalty. As the study is anonymous however, information cannot be withdrawn once submitted.

Confidentiality issues
Information provided by participants will remain confidential. You will not be identified by name.

The interview will be audio-recorded to later make a written copy, but you will not be identified. Participants' digital data/audio recordings will be stored on a password protected Flinders University server for a period of 5 years. Hard copies of written notes will be kept for 5 years, initially under lock and key in the researcher's university office and after that in space allocated to physical data storage under lock and key in the Flinders University School of Psychology.

All records will remain confidential and no information that could lead to your identification will be released without your written consent. It is your right to obtain copies of certain parts of information gathered during the research should you wish. Your information will remain confidential except in the case of a legal requirement to pass on personal information to authorised third parties. This requirement is standard and applies to information collected in both research and non-research situations.

You should be aware that Charlotte intends to publish the results of this study as part of her PhD thesis and that the data gathered through this research may be published in scientific journals or presented at conferences, but you will not be able to be identified in any manner in these publications or presentations.

Compensation
You may feel some distress from participation in this study. If this occurs you may withdraw from the study if you wish and your care will not be affected in any way. By participating in this study you do not give up any of your legal rights.

Outcomes
A brief summary of the overall results of the study will be available to all participants by email. At the interview, you will be able to indicate if you would like to receive this.

Questions or concerns
If you would like further details about the project, either before, during or after the study, you may contact the researcher, Charlotte Tottman, School of Psychology, Flinders University, GPO Box 2100, or at charlotte.tottman@flinders.edu.au or her supervisor, Dr Julie Mattiske on 8201 2746 or at julie.mattiske@flinders.edu.au.

Complaints
This study has been reviewed by the Southern Adelaide Clinical Human Research Ethics Committee. If you wish to discuss the study with someone not directly involved, in particular in relation to policies, your rights as a participant, or should you wish to make a confidential complaint, you may contact the Executive Officer, SAC HREC at the Flinders Medical Centre (8204 6453) or email research.ethics@health.sa.gov.au.

This research project has been approved by the Southern Adelaide Clinical Research Ethics Committee (Project Number 117.14).

Kind regards, Charlotte Tottman.

Charlotte Tottman

School of Psychology

Flinders University

GPO Box 2100
Adelaide SA 5001

Tel: (+61 8) 8201 7920
Fax: (+61 8) 8201 3877
Email: charlotte.tottman@flinders.edu.au

CONSENT TO PARTICIPATION IN RESEARCH

I, ...

(first or given names) (last name)

give consent to my involvement in the research project Motherhood Experience 2.

I specifically consent to

- being individually interviewed for 30-60 minutes by Charlotte Tottman about my experience as the mother of a young child
- audio recording and some written note taking of the interview
- the interview being conducted at a time, date and location of my choosing.

I acknowledge the nature, purpose and contemplated effects of the research project, especially as far as they affect me, have been fully explained to my satisfaction by

.....

(first or given name) (last name)

and my consent is given voluntarily. It has been explained to me that I am under no obligation to participate in this study, despite having previously indicated my interest in participating.

I acknowledge that the details have been explained to me, including indications of risks; any discomfort involved; and anticipation of length of time.

I have understood and am satisfied with the explanations that I have been given.

I have been provided with a written information sheet.

I understand that my involvement in this research project may not be of any direct benefit to me and that I may withdraw my consent at any stage without affecting my rights or the responsibilities of the researchers in any respect.

I declare that I am over the age of 18 years.

I acknowledge that I have been informed that should I receive an injury as a result of taking part in this study, I may need to start legal action to determine whether I should be paid.

I understand this study involves the audio taping of the interview for transcribing purposes.

Signature of Research Participant: .....

Date: .....

I,.....have described to the research project and nature and effects of procedure(s) involved.

In my opinion he/she understands the explanation and has freely given his/her consent.

Signature:.....Date:.....Status in Project:.....

Appendix C

Surveys and Semi-structured Interview

Study 1

Postnatal Survey

(The antenatal version, not provided due to space limitations, differed from the postnatal version in that the NMQ was worded to reflect expectations, and did not include the 5-item retrospective measure of expectations-experience discrepancy.)

New Motherhood Questionnaire

Charlotte Tottman

Thank you for agreeing to participate in this study.

New Motherhood Followup

This is the second questionnaire for you to complete.

To enable us to link your responses from both questionnaires, please provide a code as follows.

The first two letters of your surname followed by your day of birth (e.g. SM06 for Ms. Smith born on the 6th of the month).

Your code:

New Motherhood Followup

We would also appreciate some basic background information about you.

Your date of birth

Your baby's date of birth

Your postcode

What is your country of birth?

New Motherhood Followup

Would you like to receive a brief summary of the results of this study by email?

- ◯ Yes
- ◯ No

New Motherhood Followup

Note to examiner: Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

First, here are some questions about your recent feelings and thoughts. Please select the response that best describes your experience of each over the last 7 days.

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

New Motherhood Followup

Note to examiner: New Motherhood Questionnaire (NMQ)

New motherhood is full of new experiences, many enjoyable and some a bit more challenging. We are interested in your <u>experience</u> of the first few months of new motherhood. There are many specific aspects to caring for a new baby. Next to each listed below, please select the button that best reflects your experience of how this is for you. If you think that an item does not apply to you, please select the 'Not applicable' option.

	Very easy to manage						Very hard to manage	Not Applicable
Finding time to shower, clean, cook, wash clothes	◯	◯	◯	◯	◯	◯	◯	◯
Cuddling my baby	◯	◯	◯	◯	◯	◯	◯	◯
My baby establishing a feeding and sleeping routine	◯	◯	◯	◯	◯	◯	◯	◯
Taking my baby with me to do errands	◯	◯	◯	◯	◯	◯	◯	◯
Changing my baby's nappy frequently	◯	◯	◯	◯	◯	◯	◯	◯
Experiencing a lack of sleep	◯	◯	◯	◯	◯	◯	◯	◯
Being uncertain about whether my baby's health and progress are within normal limits	◯	◯	◯	◯	◯	◯	◯	◯
Being interrupted by my baby in the middle of doing something	◯	◯	◯	◯	◯	◯	◯	◯
Learning to breastfeed my baby	◯	◯	◯	◯	◯	◯	◯	◯
Talking to my baby	◯	◯	◯	◯	◯	◯	◯	◯

New Motherhood Followup

New motherhood is full of new experiences, many enjoyable and some a bit more challenging. We are interested in your <u>experience</u> of the first few months of new motherhood. There are many specific aspects to caring for a new baby. Next to each listed below, please select the button that best reflects your experience of how this is for you. If you think that an item does not apply to you, please select the 'Not applicable' option.

	Very easy to manage						Very hard to manage	Not applicable
Taking my baby for walks outside	◯	◯	◯	◯	◯	◯	◯	◯
Reaching agreement with my partner or another adult about sharing childcare tasks	◯	◯	◯	◯	◯	◯	◯	◯
Having less freedom to do what I want to when I want to	◯	◯	◯	◯	◯	◯	◯	◯
Bottle feeding my baby	◯	◯	◯	◯	◯	◯	◯	◯
Lacking intellectual stimulation	◯	◯	◯	◯	◯	◯	◯	◯
Playing with my baby	◯	◯	◯	◯	◯	◯	◯	◯
Changes in the relationship with my partner	◯	◯	◯	◯	◯	◯	◯	◯
My baby being difficult to settle	◯	◯	◯	◯	◯	◯	◯	◯
Changes in my sexual relationship	◯	◯	◯	◯	◯	◯	◯	◯
Rocking my baby to sleep in my arms	◯	◯	◯	◯	◯	◯	◯	◯

New Motherhood Followup

New motherhood is full of new experiences, many enjoyable and some a bit more challenging. We are interested in your experience of the first few months of new motherhood. There are many specific aspects to caring for a new baby. Next to each listed below, please select the button that best reflects your experience of how this is for you. If you think that an item does not apply to you, please select the 'Not applicable' option.

	Very easy to manage						Very hard to manage	Not applicable
Reaching agreement with my partner or another adult about sharing household tasks	○	○	○	○	○	○	○	○
Holding my baby for long periods	○	○	○	○	○	○	○	○
Having less time alone with my partner	○	○	○	○	○	○	○	○
The physical care of my baby taking so much time there is not much time left to enjoy them	○	○	○	○	○	○	○	○
Bathing or showering my baby	○	○	○	○	○	○	○	○
Having sore and/or cracked nipples from breast-feeding	○	○	○	○	○	○	○	○
Having less time with friends	○	○	○	○	○	○	○	○
Returning to my normal physical self within a few months	○	○	○	○	○	○	○	○
When my baby cries, identifying the problem and comforting them quickly	○	○	○	○	○	○	○	○
Not having enough money for non-essential items or services	○	○	○	○	○	○	○	○

New Motherhood Followup

New motherhood is full of new experiences, many enjoyable and some a bit more challenging. We are interested in your <u>experience</u> of the first few months of new motherhood. There are many specific aspects to caring for a new baby. Next to each listed below, please select the button that best reflects your experience of how this is for you. If you think that an item does not apply to you, please select the 'Not applicable' option.

	Very easy to manage						Very hard to manage	Not applicable
Having more periods of boredom	○	○	○	○	○	○	○	○
Massaging my baby	○	○	○	○	○	○	○	○
Restrictions to my social life	○	○	○	○	○	○	○	○
My sleep being interrupted	○	○	○	○	○	○	○	○
Laughing with my baby	○	○	○	○	○	○	○	○
My baby sometimes being distressed	○	○	○	○	○	○	○	○
Losing my independence	○	○	○	○	○	○	○	○
Sharing the experience of new motherhood with others	○	○	○	○	○	○	○	○
Being tired and fatigued	○	○	○	○	○	○	○	○
Singing to my baby	○	○	○	○	○	○	○	○

New Motherhood Followup

New motherhood is full of new experiences, many enjoyable and some a bit more challenging. We are interested in your <u>experience</u> of the first few months of new motherhood. There are many specific aspects to caring for a new baby. Next to each listed below, please select the button that best reflects your experience of how this is for you. If you think that an item does not apply to you, please select the 'Not applicable' option.

	Very easy to manage						Very hard to manage	Not applicable
My life lacking variety	◯	◯	◯	◯	◯	◯	◯	◯
Having less time to do the things I enjoy	◯	◯	◯	◯	◯	◯	◯	◯
My baby having nappy rash or a cold	◯	◯	◯	◯	◯	◯	◯	◯
My baby crying for long periods	◯	◯	◯	◯	◯	◯	◯	◯
Being confined to the house	◯	◯	◯	◯	◯	◯	◯	◯
Showing off my baby to others	◯	◯	◯	◯	◯	◯	◯	◯
Receiving advice from other people	◯	◯	◯	◯	◯	◯	◯	◯
Being isolated from friends and/or the work world	◯	◯	◯	◯	◯	◯	◯	◯
My baby having colic	◯	◯	◯	◯	◯	◯	◯	◯
Not having enough time in the day for me to attend to my own basic needs	◯	◯	◯	◯	◯	◯	◯	◯

New Motherhood Followup

Note to examiner: Edinburgh Postnatal Depression Scale (EPDS)

As you have recently had a baby, we would like to know how you are feeling. Please select the answer that comes closest to how you have felt IN THE PAST 7 DAYS.

I have been able to laugh and see the funny side of things

- ◯ As much as I always could
- ◯ Not quite so much now
- ◯ Definitely not so much now
- ◯ Not at all

I have looked forward with enjoyment to things

- ◯ As much as I ever did
- ◯ Rather less than I used to
- ◯ Definitely less than I used to
- ◯ Hardly at all

I have blamed myself unnecessarily when things went wrong

- ◯ Yes, most of the time
- ◯ Yes, some of the time
- ◯ Not very often
- ◯ No, never

I have been anxious or worried for no good reason

- ◯ No, not at all
- ◯ Hardly ever
- ◯ Yes, sometimes
- ◯ Yes, very often

I have felt scared or panicky for no very good reason

- ◯ Yes, quite a lot
- ◯ Yes, sometimes
- ◯ No, not much
- ◯ No, not at all

New Motherhood Followup

Things have been getting on top of me

- ◯ Yes, most of the time I haven't been able to cope at all
- ◯ Yes, sometimes I haven't been coping as well as usual
- ◯ No, most of the time I have coped quite well
- ◯ No, I have been coping as well as ever

I have been so unhappy that I have had difficulty sleeping

- ◯ Yes, most of the time
- ◯ Yes, sometimes
- ◯ Not very often
- ◯ No, not at all

I have felt sad or miserable

- ◯ Yes, most of the time
- ◯ Yes, quite often
- ◯ Not very often
- ◯ No, not at all

I have been so unhappy that I have been crying

- ◯ Yes, most of the time
- ◯ Yes, quite often
- ◯ Only occasionally
- ◯ No, never

The thought of harming myself has occurred to me

- ◯ Yes, quite often
- ◯ Sometimes
- ◯ Hardly ever
- ◯ Never

New Motherhood Followup

Note to examiner: Maternal Self-efficacy Scale

We are interested in how confident and prepared women feel for the experience of new motherhood.

Please select the response which best indicates how you feel about the following statements:

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
I feel confident about my ability to take care of my new baby	○	○	○	○	○	○
I don't feel prepared for new motherhood	○	○	○	○	○	○
I feel well-informed about how to care for a new baby	○	○	○	○	○	○
I am able to cope with the day-to-day aspects of caring for a new baby	○	○	○	○	○	○
I find caring for a new baby challenging	○	○	○	○	○	○
I feel out of my depth in caring for my new baby	○	○	○	○	○	○
I easily adjust my life around the needs of my new baby	○	○	○	○	○	○
I am able to make good judgments about my baby's needs	○	○	○	○	○	○
I am able to tell whether my baby is hungry, tired or unwell	○	○	○	○	○	○
I know by instinct/automatically how to respond to my new baby	○	○	○	○	○	○

New Motherhood Followup

Note to examiner: Staite-Trait Anxiety Inventory - Trait Subscale (STAI-T)

Below are some statements that people might use to describe themselves. Read each statement and then select the response option to the right to indicate how you have been feeling in the past 7 days. There are no right or wrong answers.

Do not spend too much time on any one statement, but select the answer which seems to describe your general feelings best.

	Almost never	Sometimes	Often	Almost always
I feel pleasant	◯	◯	◯	◯
I feel nervous and restless	◯	◯	◯	◯
I feel satisfied with myself	◯	◯	◯	◯
I wish I could be as happy as others seem to be	◯	◯	◯	◯
I feel like a failure	◯	◯	◯	◯
I feel rested	◯	◯	◯	◯
I am “calm, cool, and collected”	◯	◯	◯	◯
I feel that difficulties are piling up so that I cannot overcome them	◯	◯	◯	◯
I worry too much over something that really doesn’t matter	◯	◯	◯	◯
I am happy	◯	◯	◯	◯

New Motherhood Followup

Below are some statements that people might use to describe themselves. Read each statement and then select the response option to the right to indicate how you have been feeling in the past 7 days. There are no right or wrong answers.

Do not spend too much time on any one statement, but select the answer which seems to describe your general feelings best.

	Almost never	Sometimes	Often	Almost always
I have disturbing thoughts	○	○	○	○
I lack self-confidence	○	○	○	○
I feel secure	○	○	○	○
I make decisions easily	○	○	○	○
I feel inadequate	○	○	○	○
I am content	○	○	○	○
Some unimportant thought runs through my mind and bothers me	○	○	○	○
I take disappointments so keenly that I can't put them out of my mind	○	○	○	○
I am a steady person	○	○	○	○
I get in a state of tension or turmoil as I think over my recent concerns and interests	○	○	○	○

New Motherhood Followup

Note to examiner: Social Support Scale

Next are some questions about how well supported you feel by other people in your life. Please select the response that best indicates how you feel (if any of the following relationships do not apply, please select the 'Not applicable' option).

	Not nearly enough	Not quite enough	As much as I need	Not applicable
My partner listens to me if I need to talk about my worries or problems	○	○	○	○
My partner understands the way I feel and think about things	○	○	○	○
My partner goes out of their way to help me if I really need it	○	○	○	○
My family listen to me if I need to talk about my worries or problems	○	○	○	○
My family understand the way I feel and think about things	○	○	○	○
My family go out of their way to help me if I really need it	○	○	○	○
My friends listen to me if I need to talk about my worries or problems	○	○	○	○
My friends understand the way I feel and think about things	○	○	○	○
My friends go out of their way to help me if I really need it	○	○	○	○

New Motherhood Followup

We would really appreciate some further background information about your pregnancy and birth experience.

Please select the appropriate response for you for each of the questions below.

	Yes	No
Was pregnancy an enjoyable experience for you?	◯	◯
Was your baby born full term?	◯	◯
Did you give birth to your baby via caesarean section?	◯	◯
Did you experience any delivery complications?	◯	◯

New Motherhood Followup

Note to examiner: Retrospective Expectations Experience Discrepancy Scale

Next to each one of the general aspects of new motherhood listed below, please select the button that best reflects your <u>experience</u> of how this is for you. If you think that an item does not apply to you, please select the 'Not applicable' option.

	Much easier than I expected						Much harder than I expected	Not Applicable
Taking care of my baby	◯	◯	◯	◯	◯	◯	◯	◯
Changes in my social life	◯	◯	◯	◯	◯	◯	◯	◯
Dealing with household routines and tasks	◯	◯	◯	◯	◯	◯	◯	◯
Changes in my relationship with my partner or family	◯	◯	◯	◯	◯	◯	◯	◯
Taking care of my own needs	◯	◯	◯	◯	◯	◯	◯	◯

New Motherhood Followup

Thank you very much for your participation.

Study 2

The Motherhood Experience Questionnaire

Charlotte Tottman

Thank you for agreeing to participate in this study.

Firstly, we would appreciate some basic background information about you.

Your date of birth (DD/MM/YYYY)

Number of children you have given birth to

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ more than 4

Was your most recent delivery a multiple birth (twins, triplets etc)?

- ◯ Yes
- ◯ No

If yes, please provides details

Number of children in your household

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ more than 4

Your youngest child's date of birth (DD/MM/YYYY)

Your next youngest child's date of birth (DD/MM/YYYY)

Your postcode

Your country of birth

Each participant who completes this survey will be entered into a draw to win one of 5 supermarket vouchers, each to the value of $100.
To be entered into the supermarket voucher draw please provide your email address.

Would you like to receive a brief summary of the results of this study by email?

◯ Yes ◯ No

Would you be willing to be invited to participate in one further component of this research, which will likely be focus group discussions in Adelaide?

◯ Yes ◯ No

Your email address will not be used for any other purpose than to notify you regarding the outcome of the supermarket voucher draw, to send you a summary of the study results if requested, and to invite you to participate in one further component of this research.

Note to examiner: Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

First, here are some questions about your recent feelings and thoughts. Please select the response that best describes your experience of each over the PAST 7 DAYS.

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

Note to examiner: New Motherhood Questionnaire (NMQ-37)

Caring for a new baby is made up of a variety of experiences, many enjoyable and some a bit more challenging. We are interested in your experience of the first few weeks of motherhood with your youngest child.

There are many specific aspects to caring for a new baby. Next to each listed below, please select the button that best reflects your experience of how this is for you.

If you think that an item does not apply to you, please select the 'Not applicable' option.

	Very easy to manage						Very hard to manage	Not Applicable
Finding time to shower, clean, cook, wash clothes	◯	◯	◯	◯	◯	◯	◯	◯
Cuddling my baby	◯	◯	◯	◯	◯	◯	◯	◯
My baby establishing a feeding and sleeping routine	◯	◯	◯	◯	◯	◯	◯	◯
Taking my baby with me to do errands	◯	◯	◯	◯	◯	◯	◯	◯
Changing my baby's nappy frequently	◯	◯	◯	◯	◯	◯	◯	◯
Experiencing a lack of sleep	◯	◯	◯	◯	◯	◯	◯	◯
Being uncertain about whether my baby's health and progress are within normal limits	◯	◯	◯	◯	◯	◯	◯	◯
Being interrupted by my baby in the middle of doing something	◯	◯	◯	◯	◯	◯	◯	◯
Learning to breastfeed my baby	◯	◯	◯	◯	◯	◯	◯	◯

Caring for a new baby is made up of a variety of experiences, many enjoyable and some a bit more challenging. We are interested in your experience of the first few weeks of motherhood with your youngest child.

There are many specific aspects to caring for a new baby. Next to each listed below, please select the button that best reflects your experience of how this is for you.

If you think that an item does not apply to you, please select the 'Not applicable' option.

	Very easy to manage						Very hard to manage	Not applicable
Taking my baby for walks outside	◯	◯	◯	◯	◯	◯	◯	◯
Reaching agreement with my partner or another adult about sharing childcare tasks	◯	◯	◯	◯	◯	◯	◯	◯
Bottle feeding my baby	◯	◯	◯	◯	◯	◯	◯	◯
Lacking intellectual stimulation	◯	◯	◯	◯	◯	◯	◯	◯
Playing with my baby	◯	◯	◯	◯	◯	◯	◯	◯
Changes in the relationship with my partner	◯	◯	◯	◯	◯	◯	◯	◯
Learning to wrap and settle my baby	◯	◯	◯	◯	◯	◯	◯	◯
Rocking my baby to sleep in my arms	◯	◯	◯	◯	◯	◯	◯	◯
The physical care of my baby taking so much time there is not much time left to enjoy them	◯	◯	◯	◯	◯	◯	◯	◯

Caring for a new baby is made up of a variety of experiences, many enjoyable and some a bit more challenging. We are interested in your experience of the first few weeks of motherhood with your youngest child.

There are many specific aspects to caring for a new baby. Next to each listed below, please select the button that best reflects your experience of how this is for you.

If you think that an item does not apply to you, please select the 'Not applicable' option.

	Very easy to manage						Very hard to manage	Not applicable
Bathing or showering my baby	◯	◯	◯	◯	◯	◯	◯	◯
Having sore and/or cracked nipples from breast-feeding	◯	◯	◯	◯	◯	◯	◯	◯
Having less time with friends	◯	◯	◯	◯	◯	◯	◯	◯
Returning to my normal physical self within a few months	◯	◯	◯	◯	◯	◯	◯	◯
When my baby cries, identifying the problem and comforting them quickly	◯	◯	◯	◯	◯	◯	◯	◯
Not having enough money for non-essential items or services	◯	◯	◯	◯	◯	◯	◯	◯
Having more periods of boredom	◯	◯	◯	◯	◯	◯	◯	◯
My baby sometimes being distressed	◯	◯	◯	◯	◯	◯	◯	◯
Sharing the experience of motherhood with others	◯	◯	◯	◯	◯	◯	◯	◯

Caring for a new baby is made up of a variety of experiences, many enjoyable and some a bit more challenging. We are interested in your experience of the first few weeks of motherhood with your youngest child.

There are many specific aspects to caring for a new baby. Next to each listed below, please select the button that best reflects your experience of how this is for you.

If you think that an item does not apply to you, please select the 'Not applicable' option.

	Very easy to manage						Very hard to manage	Not applicable
Being tired and fatigued	◯	◯	◯	◯	◯	◯	◯	◯
Singing to my baby	◯	◯	◯	◯	◯	◯	◯	◯
Having less time to do the things I enjoy	◯	◯	◯	◯	◯	◯	◯	◯
Being confined to the house	◯	◯	◯	◯	◯	◯	◯	◯
Showing off my baby to others	◯	◯	◯	◯	◯	◯	◯	◯
My baby having colic	◯	◯	◯	◯	◯	◯	◯	◯
Not having enough time in the day for me to attend to my own basic needs	◯	◯	◯	◯	◯	◯	◯	◯
Having a fussy baby	◯	◯	◯	◯	◯	◯	◯	◯
Learning to burp my baby	◯	◯	◯	◯	◯	◯	◯	◯
Having an unwell baby, with a minor ailment like a rash or a cold	◯	◯	◯	◯	◯	◯	◯	◯

Note to examiner: Edinburgh Postnatal Depression Scale (EPDS)

As you have recently had a baby, we would like to know how you are feeling. Please select the answer that comes closest to how you have felt in the PAST 7 DAYS.

I have been able to laugh and see the funny side of things

- ◯ As much as I always could
- ◯ Not quite so much now
- ◯ Definitely not so much now
- ◯ Not at all

I have looked forward with enjoyment to things

- ◯ As much as I ever did
- ◯ Rather less than I used to
- ◯ Definitely less than I used to
- ◯ Hardly at all

I have blamed myself unnecessarily when things went wrong

- ◯ Yes, most of the time
- ◯ Yes, some of the time
- ◯ Not very often
- ◯ No, never

I have been anxious or worried for no good reason

- ◯ No, not at all
- ◯ Hardly ever
- ◯ Yes, sometimes
- ◯ Yes, very often

I have felt scared or panicky for no very good reason

- ◯ Yes, quite a lot
- ◯ Yes, sometimes
- ◯ No, not much
- ◯ No, not at all

Things have been getting on top of me

- ◯ Yes, most of the time
- ◯ I haven't been able to cope at all
- ◯ Yes, sometimes I haven't been coping as well as usual
- ◯ No, most of the time I have coped quite well
- ◯ No, I have been coping as well as ever

I have been so unhappy that I have had difficulty sleeping

- ◯ Yes, most of the time
- ◯ Yes, sometimes
- ◯ Not very often
- ◯ No, not at all

I have felt sad or miserable

- ◯ Yes, most of the time
- ◯ Yes, quite often
- ◯ Not very often
- ◯ No, not at all

I have been so unhappy that I have been crying

- ◯ Yes, most of the time
- ◯ Yes, quite often
- ◯ Only occasionally
- ◯ No, never

The thought of harming myself has occurred to me

- ◯ Yes, quite often
- ◯ Sometimes
- ◯ Hardly ever
- ◯ Never

Note to examiner: Maternal Self-efficacy Scale

We are interested in how confident and prepared women feel for the experience of motherhood.

Please select the response which best indicates how you feel about the following statements:

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
I feel confident about my ability to take care of my new baby	◯	◯	◯	◯	◯	◯
I don't feel prepared for motherhood	◯	◯	◯	◯	◯	◯
I feel well-informed about how to care for a new baby	◯	◯	◯	◯	◯	◯
I am able to cope with the day-to-day aspects of caring for a new baby	◯	◯	◯	◯	◯	◯
I find caring for a new baby challenging	◯	◯	◯	◯	◯	◯
I feel out of my depth in caring for my new baby	◯	◯	◯	◯	◯	◯
I easily be able to adjust my life around the needs of my new baby	◯	◯	◯	◯	◯	◯
I am able to make good judgments about my baby's needs	◯	◯	◯	◯	◯	◯
I am able to tell whether my baby is hungry, tired or unwell	◯	◯	◯	◯	◯	◯
I know by instinct/automatically how to respond to my new baby	◯	◯	◯	◯	◯	◯

Note to examiner: State-Trait Anxiety Inventory - Trait Subscale (STAI-T)

Below are some statements that people might use to describe themselves. Read each statement and then select the response option to the right to indicate how you have been feeling in the PAST 7 DAYS. There are no right or wrong answers.

Do not spend too much time on any one statement, but select the answer which seems to describe your general feelings best.

	Almost never	Sometimes	Often	Almost always
I feel pleasant	◯	◯	◯	◯
I feel nervous and restless	◯	◯	◯	◯
I feel satisfied with myself	◯	◯	◯	◯
I wish I could be as happy as others seem to be	◯	◯	◯	◯
I feel like a failure	◯	◯	◯	◯
I feel rested	◯	◯	◯	◯
I am “calm, cool, and collected”	◯	◯	◯	◯
I feel that difficulties are piling up so that I cannot overcome them	◯	◯	◯	◯
I worry too much over something that really doesn’t matter	◯	◯	◯	◯
I am happy	◯	◯	◯	◯

Below are some statements that people might use to describe themselves. Read each statement and then select the response option to the right to indicate how you have been feeling in the PAST 7 DAYS. There are no right or wrong answers.

Do not spend too much time on any one statement, but select the answer which seems to describe your general feelings best.

	Almost never	Sometimes	Often	Almost always
I have disturbing thoughts	◯	◯	◯	◯
I lack self-confidence	◯	◯	◯	◯
I feel secure	◯	◯	◯	◯
I make decisions easily	◯	◯	◯	◯
I feel inadequate	◯	◯	◯	◯
I am content	◯	◯	◯	◯
Some unimportant thought runs through my mind and bothers me	◯	◯	◯	◯
I take disappointments so keenly that I can't put them out of my mind	◯	◯	◯	◯
I am a steady person	◯	◯	◯	◯
I get in a state of tension or turmoil as I think over my recent concerns and interests	◯	◯	◯	◯

Note to examiner: Postpartum Support Questionnaire (PSQ)

This part of the questionnaire will ask about how supported you currently feel and how much support you have received since your baby was born.

How much support do you currently receive?

No support ○ ○ ○ ○ ○ ○ ○ A lot of support

Who is the person who provides most of that support?

- ○ Mother
- ○ Father
- ○ Brother or sister
- ○ Grandparent
- ○ Other relative
- ○ Partner, father of baby
- ○ Partner, not father of baby
- ○ Friend

For the person who provides most support, please indicate how experienced they are in caring for a new baby.

- ○ More experienced than me
- ○ As experienced as me
- ○ Less experienced than me

How satisfied are you with the amount of support you are currently receiving?

Not satisfied ○ ○ ○ ○ ○ ○ ○ Very satisfied

The following questions ask ways in which you have needed help since your baby was born.

For each statement select HOW IMPORTANT THIS TYPE OF HELP WAS FOR YOU, on the number scales provided.

	0: Not important	1	2	3	4	5	6	7: Very important
Needed help with cooking meals.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to be reassured that I am more than just someone's mother.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to have information on taking care of my own body as it heals.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to talk to another new mother about my baby's behaviour.	◯	◯	◯	◯	◯	◯	◯	◯
Needed help with the washing.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to have information on which skin rashes are normal for the baby to have.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to know if my baby's sleeping patterns are normal.	◯	◯	◯	◯	◯	◯	◯	◯
Needed help in taking care of my baby so that I can take a shower, eat, or have some time to myself.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to have some time for friends and activities (exercise, sport, clubs, parties) I used to enjoy.	◯	◯	◯	◯	◯	◯	◯	◯
Needed others to act as if I am special.	◯	◯	◯	◯	◯	◯	◯	◯
Needed help in cleaning the house/apartment.	◯	◯	◯	◯	◯	◯	◯	◯
Needed others to appreciate my care of the baby.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to have others act as if my ideas, decisions, and ways of doing things are right or acceptable.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to have information on what my baby's bowel movements should look like.	◯	◯	◯	◯	◯	◯	◯	◯
Needed others to act like it is okay for me to need help.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to talk with another new mother about how to care for the baby.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to have information on resuming sex and/or birth control.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to talk with another new mother about how I will adjust to the role of mother.	◯	◯	◯	◯	◯	◯	◯	◯
Needed help in obtaining more sleep for me.	◯	◯	◯	◯	◯	◯	◯	◯
Needed someone to talk with me and listen to me about what is interesting and important to me.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to have information on breastfeeding.	◯	◯	◯	◯	◯	◯	◯	◯
Needed help in going to the supermarket or chemist.	◯	◯	◯	◯	◯	◯	◯	◯
Needed someone to watch my baby so that I can have time alone with my partner/spouse.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to have information on my baby's crying (why the baby cries and how to comfort him/her).	◯	◯	◯	◯	◯	◯	◯	◯
Needed others to take my worries and concerns seriously.	◯	◯	◯	◯	◯	◯	◯	◯
Needed to have information on handling stress and/or	◯	◯	◯	◯	◯	◯	◯	◯

discomfort.								
Needed others to reassure me that I am not alone in being responsible for my baby.	○	○	○	○	○	○	○	○
Needed to have information on how to care for my baby's umbilical cord (navel, belly button).	○	○	○	○	○	○	○	○
Needed to talk with another new mother about the best places to get baby care supplies, clothing etc. that I need.	○	○	○	○	○	○	○	○
Needed money for baby equipment, supplies or bills that go along with having my baby.	○	○	○	○	○	○	○	○
Needed to have information on my baby's hiccups (why the baby hiccups and what to do).	○	○	○	○	○	○	○	○
Needed to talk with another new mother about my labour and delivery experience.	○	○	○	○	○	○	○	○
Needed others to touch, kiss and hug me.	○	○	○	○	○	○	○	○
Needed to have others treat me like I am responsible and competent.	○	○	○	○	○	○	○	○

Next, for each statement select HOW MUCH HELP YOU HAVE RECEIVED, on the number scales provided.

	0: No help	1	2	3	4	5	6	7: Lot of help
Help with cooking meals.	◯	◯	◯	◯	◯	◯	◯	◯
Reassured that I am more than just someone's mother.	◯	◯	◯	◯	◯	◯	◯	◯
Information on taking care of my own body as it heals.	◯	◯	◯	◯	◯	◯	◯	◯
Talk to another new mother about my baby's behaviour.	◯	◯	◯	◯	◯	◯	◯	◯
Help with the washing.	◯	◯	◯	◯	◯	◯	◯	◯
Information on which skin rashes are normal for the baby to have.	◯	◯	◯	◯	◯	◯	◯	◯
Know if my baby's sleeping patterns are normal.	◯	◯	◯	◯	◯	◯	◯	◯
Help in taking care of my baby so that I can take a shower, eat, or have some time to myself.	◯	◯	◯	◯	◯	◯	◯	◯
Some time for friends and activities (exercise, sport, clubs, parties) I used to enjoy.	◯	◯	◯	◯	◯	◯	◯	◯
Others to act as if I am special.	◯	◯	◯	◯	◯	◯	◯	◯
Help in cleaning the house/apartment.	◯	◯	◯	◯	◯	◯	◯	◯
Others to appreciate my care of the baby.	◯	◯	◯	◯	◯	◯	◯	◯
Others act as if my ideas, decisions, and ways of doing things are right or acceptable.	◯	◯	◯	◯	◯	◯	◯	◯
Information on what my baby's bowel movements should look like.	◯	◯	◯	◯	◯	◯	◯	◯
Others to act like it is okay for me to need help.	◯	◯	◯	◯	◯	◯	◯	◯
Talk with another new mother about how to care for the baby.	◯	◯	◯	◯	◯	◯	◯	◯
Information on resuming sex and/or birth control.	◯	◯	◯	◯	◯	◯	◯	◯
Talk with another new mother about how I will adjust to the role of mother.	◯	◯	◯	◯	◯	◯	◯	◯
Help in obtaining more sleep for me.	◯	◯	◯	◯	◯	◯	◯	◯
Someone to talk with me and listen to me about what is interesting and important to me.	◯	◯	◯	◯	◯	◯	◯	◯
Information on breastfeeding.	◯	◯	◯	◯	◯	◯	◯	◯
Help in going to the supermarket or chemist.	◯	◯	◯	◯	◯	◯	◯	◯
Someone to watch my baby so that I can have time alone with my partner/spouse.	◯	◯	◯	◯	◯	◯	◯	◯
Information on my baby's crying (why the baby cries and how to comfort him/her).	◯	◯	◯	◯	◯	◯	◯	◯
Others to take my worries and concerns seriously.	◯	◯	◯	◯	◯	◯	◯	◯
Information on handling stress and/or discomfort.	◯	◯	◯	◯	◯	◯	◯	◯
Others to reassure me that I am not alone in being responsible for my baby.	◯	◯	◯	◯	◯	◯	◯	◯
Information on how to care for my baby's umbilical cord (navel, belly button).	◯	◯	◯	◯	◯	◯	◯	◯
Talk with another new mother about the best places to get baby care supplies, clothing etc. that I need.	◯	◯	◯	◯	◯	◯	◯	◯

Money for baby equipment, supplies or bills that go along with having my baby.	○	○	○	○	○	○	○	○
Information on my baby's hiccups (why the baby hiccups and what to do).	○	○	○	○	○	○	○	○
Talk with another new mother about my labour and delivery experience.	○	○	○	○	○	○	○	○
Others to touch, kiss and hug me.	○	○	○	○	○	○	○	○
Others treat me like I am responsible and competent.	○	○	○	○	○	○	○	○

We would really appreciate some more background information about you.
Please select the appropriate response for you for each of the questions below.

	Yes	No
Have you previously experienced depression?	◯	◯
If yes, did you receive treatment?	◯	◯
Have you previously experienced anxiety?	◯	◯
If yes, did you receive treatment?	◯	◯
Have you previously experienced any other psychological problems?	◯	◯
If yes, did you receive treatment?	◯	◯

Your highest level of education

- ◯ Less than year 12
- ◯ Year 12
- ◯ TAFE or trade certificate/qualification
- ◯ University qualification

We understand that some women may not work or may have stopped working in the lead-up to childbirth.

Were you in paid employment prior to the birth of your youngest child?

◯ Yes ◯ No

If yes,

◯ Full-time ◯ Part-time

What is your usual occupation?

Your living situation

- ◯ Alone
- ◯ With partner
- ◯ With parents or siblings
- ◯ With another adult (or adults)

Regarding pregnancy and childbirth

	Yes	No
Was pregnancy an enjoyable experience for you?	◯	◯
Was your baby born full term?	◯	◯
Did you give birth to your baby via caesarean section?	◯	◯
Did you experience any delivery complications?	◯	◯

Please provide details of anything else that has been important to you in your most recent experience of caring for a new baby, if it has not been covered above.

Thank you very much for your participation.

Study 3

Semi-structured Interview

We are interested in women's experiences of caring for a new baby; the good things and any aspects that they found more challenging. We're also interested in any insights they can offer about what might make it easier or what might have been helpful.

Are you willing to let me audio-record your answers? If not that's OK. (Regardless of their response) I will probably take a few notes here and there.

I'd like to start by asking a few background questions about you.

Note to the Ethics Committee: Preliminary questions will ask for background information about their date of birth, whether they worked before having their baby, when their youngest baby was born, his or her name, and whether this baby is their first. If this baby is their first, we will ask whether they'd had previous experience of caring for a baby (e.g., younger siblings, baby-sitting, occupational). If it is their second or subsequent baby, we will ask for some information about their earlier child/children. We will also ask how many people live in their home (aside from children).

Motherhood

Whether certain questions are asked, and their order, will depend on each woman's responses to preceding questions (e.g., they will not be asked questions that have already been answered). Where relevant, follow-up questions will be used for clarification.

1. What were first few weeks like for you, caring for your new baby (this will be about their youngest baby for whom they care currently)?
2. Did you feel prepared (for motherhood; caring for your baby)?
3. Was there anything about being a mother that you found surprising (or hadn't expected)?
4. How confident were you (about caring for your baby)?
5. Did your feelings about this change over time (e.g., more confident after the first weeks or months)?
6. What were the best things about that early period with a new baby?
7. Were there any challenging aspects (of caring for your baby or day-to-day more generally)?

If yes to the above:

- What were they?
- *If more than one*: Which were the most challenging ones?
- *If it's not clear from her responses*: What do think made them difficult? (e.g., not sure what to do or how to do it, couldn't do anything about them, didn't know if I was doing things correctly)
- How did it make you feel? *(if it's not obvious from her response)*

8. Did you have someone to talk to if you wanted to?
9. Were you able to get advice, help, support? What was helpful? Is there anything else that would have been helpful?
10. If you were finding something difficult, were you able to talk to someone (if the mother named something that troubled them, the interviewer will name it for this question, e.g., tiredness, not enough time for self, breast-feeding difficulties, an unsettled baby). Would/did you have feel comfortable telling someone else if something was difficult?

For women with more than one child (for whom they've cared):

11. This is your 2nd (or 3rd … as applicable) baby. Was your experience of the early weeks different with this baby than it was with your first baby?
12. If yes, how/why?

For all women

13. Looking back, is there anything that you think that would have been helpful or made it easier (caring for their baby or other challenging aspects such as fatigue, breast-feeding)?

    If yes,

    - What sort of things would have helped?
    - And when (e.g., antenatal/postnatal)?

As we would like to know if they think that any of the following would have been useful, we will ask them directly if appropriate

- More information (e.g., about what it would be like, what is normal)?
- Practical advice (e.g., about feeding, bathing, settling, crying)?

14. Some women experience anxiety or sad mood or depression during pregnancy and after giving birth.

    Did you have any of these before or after (baby name) was born?

    If yes, did you seek/receive treatment?

15. If they haven't indicated this yet, we will ask about antenatal classes

- Did you go to antenatal classes? (for which of your children, if more than one)?

If yes:

- What did the classes cover? (Did they cover how to care for a young baby and what it would be like?)
- Was there anything else you would have liked?

16. This is the last question. If there was one piece of advice you could give to women expecting their first baby, what would it be?

Is there anything you'd like to add?

Would you like a summary of the results when I have them? (If yes, we'll ask them to write their email address or postal address on a form that is separate from any other notes about them so it cannot be linked to their responses)

Thank you so much for your help with this study.