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THE ASSESSMENT OF POSTNATAL DEPRESSION, ANXIETY AND STRESS USING A COGNITIVE VULNERABILITY-STRESS MODEL: A ROLE FOR PERCEIVED CONTROL AND INDIVIDUAL CHARACTERISTICS

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Being a report of an investigation submitted as requirement for degree of Professional Doctorate of Psychology

August, 2007
DECLARATION

I declare that this dissertation is my own account of my research and does not contain work that has been previously submitted for a degree at any institution or for publication, without due acknowledgement.

Renée Miller
August, 2007
ABSTRACT

In comparison to the vast literature on postnatal depression, there exists a paucity of studies that examine anxiety and stress in postnatal populations. This thesis drew from the cognitive vulnerability-stress theories of depression, anxiety, and stress to form its theoretical basis. The underlying premise was that stressful life events have the potential to interact with cognitive vulnerability or characteristic ways of thinking to result in distress for some individuals. New motherhood was therefore conceptualized as a life event that can trigger not only depression, but anxiety and stress in vulnerable women. A major aim of this thesis was to assess the prevalence of postnatal distress using the Edinburgh Postnatal Depression Scale (EPDS) and the Depression Anxiety Stress Scales (DASS-21). The sample comprised 325 primiparous mothers who ranged in age from 18 to 44 years (M=32 years), whose babies were aged between 6 weeks and 6 months. Women were recruited through mother’s groups and health centres in Melbourne.

Results revealed that over and above the 61 women (19%) who were classified by the DASS-21 as depressed, a further 33 women (10%) showed symptoms of anxiety or stress without depression. This finding supports the assertions that postnatal women need to be assessed for broader indicators of psychological morbidity than that of depression alone. Moreover, 7% of the sample were both anxious and depressed, and had significantly higher mean scores on the EPDS and DASS-depression scales than their depressed-only counterparts. This sub-group also had significantly lower levels of maternal role satisfaction and general life satisfaction than depressed-only women. Other significant findings in relation to the anxious-depressed sub-group, point to the importance of assessing the comorbidity of anxious and depressive symptomatology, and of recognizing the extent to which these women may be at heightened risk compared to depressed-only women.

This thesis adapted the biopsychosocial model of postnatal depression proposed by Milgrom, Martin, and Negri (1999) as a research framework for examining a number of unique predictors of postnatal distress. Drawing from an extensive literature on control, two control-related scales were developed (the Perception of Control and Order Scale, and the General Desire for Control and Order Scale). These scales, along with several other cognitive measures, were found to significantly differ in ratings between distressed and non-distressed women. The findings substantiated a role for both control-
related perceptions (perceptions of control and order, self-efficacy, and perceived control of internal states) and individual characteristics (perfectionism and fear of negative evaluation) in the postpartum. In a final analysis of the cognitive vulnerability-stress model, factors that remained significant that made a unique contribution to the postnatal literature were perceptions of control and order, perceived control of internal states, fear of negative evaluation, and perceived criticism/judgement from women’s mothers.
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CHAPTER 1: INTRODUCTION

1.1 Overview

Becoming a mother has been described as one of the most significant developmental tasks of adulthood (Dion, 1985). The birth of a woman’s first baby is a major life event that marks the beginning of a period of cognitive transition for women – a time when women’s roles and self-identities become subject to redefinition and reorganization (O’Hara, Hoffman, Philipps, & Wright, 1992; Ruble et al., 1990). The transition to motherhood brings about many abrupt changes – changes to women’s daily functioning, to their sleep patterns, to their friendships, to their relationships with their partners, and to their perceptions of themselves (Dimitrovsky, Levy-Shiff, & Schattner-Zanay, 2002; Ruble et al., 1990). New motherhood requires women to adjust to a multitude of new responsibilities and demands, for which they may have inadequate preparation and inadequate support (Goldstein, Diener, & Mangelsdorf, 1996; Milgrom, Martin, & Negri, 1999), and for which their usual organizational skills may not apply.

Although new motherhood can be a joyous and meaningful experience, it holds the potential to be a stressful life event (Cutrona, 1983; Terry 1991a). The relentless tasks involved with infant care can result in women experiencing losses of control and order over their routines, and in feelings of being ‘out of control’ in their lives (Lamble & Morris, 1999; Milgrom et al., 1999; Pope, 2000; Sharp & Bramwell, 2004). New mothers can experience loneliness, isolation, a sense of lost personal freedom, lack of social supports, and sometimes limited understanding by partners of the challenges they face (Pope, 2000). Women often hold high personal expectations around being the ‘perfect mother’ - expectations that can be unattainable, and can result in women’s diminished views of themselves. Some women experience difficulties with their infants, which can reduce their levels of perceived self-efficacy and competence, and can leave women feeling as though they are failing in their roles as mothers (Milgrom & McCloud, 1996). Women often experience feelings of guilt and shame at their perceived inadequacy at coping with their infant, especially in the face of social judgement commonly voiced about how mothers should perform, and how they should feel (Beck, 1999; Dimitrovsky et al., 2002; Dunnewold & Sanford, 2000; Kleiman & Raskin, 1994; Lamble & Morris, 1999). The reality of motherhood can be very different to the common cultural representations of motherhood (i.e., that women are
instinctively able to care for their babies, and are completely fulfilled in the role of selfless carer) (Choi, Henshaw, Baker, & Tree, 2005). This picture of motherhood sets a standard for women of ‘good mother’/‘bad mother’ against which women can perceive a sense of inadequacy (Choi et al., 2005). Women often report feeling judged or criticized by others in relation to the choices they make as mothers, and this can result in them feeling even more confused and inadequate in their motherhood role (Lamble & Morris, 1999).

Given the stressors associated with new motherhood, it is not surprising that this transition is associated with emotional distress in up to 30% of women (Johnson, Weissman, & Klerman, 1992). It has been found that 10-15% of childbearing women experience considerable difficulties that manifest as postnatal depression (Cooper, Campbell, Day, Kennerley, & Bond, 1988; O’Hara & Swain, 1996). It has been argued that depression following childbirth does not differ significantly from depression that occurs at other times (Cox, Murray, & Chapman, 1993; Kumar & Robson, 1984; O’Hara, Schlechte, Lewis, & Varner, 1991). However some authors have noted differences between postnatal depression and depression at other times. Hendrick, Altshuler, Strouse, & Grosser (2000) reported that there is a higher likelihood of anxiety accompanying depressive symptoms in the postpartum, than at other times. Roberston, Grace, Wallington, & Stewart, (2004) noted that the content of symptoms in the postpartum differ in that they may focus on the birth and/or the baby. Others have reported that persistent, ‘intense anxiety’ can accompany depression in the postpartum (Pitt, as cited in Matthey Barnett, Howie, & Kavanagh, 2003; Stuart, Couser, Schilder, O’Hara, & Gorman, 1998), which can involve fears of harm befalling the baby (Matthey, Barnett, Howie, & Kavanagh, 2003). Margison (as cited in Matthey et al., 2003) referred to the presentation of the mildly depressed but highly anxious mother whose fears surround not being able to cope. Postnatal depression is a serious mental health concern as it can impact mothers, infants, and families (Alder & Truman, 2002; Roberston et al., 2004). Postnatal depression can have deleterious effects on infants’ emotional, cognitive and behavioural development (Cooper, Murray, Hooper, & West, 1996; Murray & Cooper, 1997; O’Hara et al., 1992), and in the worst cases can result in suicide or even infanticide (Miller, 2002; Pope, 2000; Purdy & Frank, 1993; Robertson et al., 2004).

Depression is often under-recognized in primary care settings (Cooper & Murray, 1998; Hickie, 1999). According to Pope (2000), practitioners in general
practice settings fail to recognize between 22% and 55% of patients who are potentially clinically depressed. These statistics are likely to apply to postnatal women given that (a) rates of major depression and dysthymia are consistently higher in females than in males, (b) major depression in women has a peak onset during the childbearing years, and (c) in the first three months postpartum, women are three times more likely to experience depression compared to non-childbearing women (Pope, 2000). Gonen (1999) posited that one of the reasons for depression being under-recognized and under-treated, is largely due to health care systems being based on a biomedical model, with a lack of attention being paid to psychological and social factors. There is a paucity of clear research evidence to support a biological basis for postnatal depression (a topic beyond the scope of this thesis) (Cooper & Murray, 1998; Hall & Papageorgiou, 2005). Many authors have suggested that the aetiology of postnatal depression is predominantly psychosocial (Boyce, 2003; Kumar, 1994; Pope, 2000), and a biopsychosocial perspective has therefore been recommended (Hall & Papageorgiou, 2005; Milgrom et al., 1999). It has been posited that a stress and coping perspective (See section 1.5) may account for the distress experienced by new mothers, due to the extreme stressors and changes that occur in relation to this potentially stressful life event, especially for women who are vulnerable (Hall & Papageorgiou, 2005; Hipwell, Reynolds, & Crick, 2004). A study in the UK showed that general practitioners who asked patients about psychosocial factors (e.g., family and social problems), more accurately diagnosed psychiatric conditions (Marks, Goldbert, & Hillier, as cited in Richards, Ryan, McCabe, Groom, & Hickie, 2004).

It has been reported that estimates of 25% to 30% of general practice patients who experience psychological distress are not seen by doctors as having serious enough problems to warrant specialist referral (Pope, 2000). However, for postnatal women to function optimally amidst the significant life changes involved in new motherhood, even mild distress might be serious enough for these women to require help. This is a time when the potential ramifications of poor maternal adjustment can be far-reaching for the mother, her relationships, and her children (Boath, Bradley, & Anthony, 2004). Taken together, these reports point to the importance for practitioners who work with postnatal women, to be mindful of the complex, multifactorial nature of depression; to consider interactions between biological, psychological and social factors; and perhaps to broaden their conceptualization of postnatal distress beyond the clinical diagnostic criteria for depression.
The primary objective of this thesis is to argue and substantiate the case for a broader assessment of distress in postnatal women than that of depression. The majority of studies conducted on postnatal populations, refer to postnatal depression as the marker for distress in new mothers (Matthey et al., 2003). Some researchers have suggested that to conclude that women are functioning well because they do not meet the criteria for depression is an inadequate approach in the detection (and treatment) of postnatal distress (Fisher, Feekery, & Rowe-Murray, 2002; Matthey et al., 2003). The present study argues for, and presents findings in relation to the measurement of depression, anxiety and stress in a population of primiparous, postnatal women. One or more positive identification of depression, anxiety or stress is considered to constitute distress in the present sample. An emphasis is placed on the sub-group of women who have a combination of anxious and depressive symptomatology, as these patients in non-postpartum populations have been identified as being at higher risk than patients with depression or anxiety alone (e.g., Rivas-Vazquez, Saffa-Biller, Ruiz, Blais, Rivas-Vazquez, 2004).

Within the theoretical framework of a cognitive vulnerability-stress model (see the theoretical model in Section 1.8), this study investigates a number of previously established risk factors for postnatal depression, along with a number of unique cognitive factors. These factors are examined in the context of a broader view of postnatal distress (i.e., depression, anxiety and stress). The premise of the cognitive vulnerability-stress model is that stressors activate a diathesis, whereby stressors interact with predisposing or characteristic ways of thinking (i.e., vulnerability), manifesting in depression (see Section 1.3), anxiety (see Section 1.4) and/or stress (see Section 1.5). Within the cognitive vulnerability-stress framework, the factors investigated in the present study are therefore conceptualized as vulnerability factors (factors that are both pre-existing, and that occur during pregnancy), and factors that serve as sources of stress (factors that relate to the birth, and to the postpartum period). These factors are explored in the context of the extent to which they differ between distressed from non-distressed women.

Within the cognitive vulnerability-stress model, the present study makes a case for perceptions of control forming a major component of the experience of postnatal distress. Two control-related scales are developed and validated, and are explored (along with other measures of control) in the context of postnatal distress. Characteristic ways of thinking (i.e., perfectionism and fear of negative evaluation) and...
women’s experience of social judgement are also unique factors that are examined in the context of postnatal distress. A selection of cognitive variables are explored in terms of the extent to which they differ when women who are anxious-depressed are compared to women who are just depressed or women who are just anxious and/or stressed.

This thesis consists of four main chapters: (1) Introduction, (2) Method, (3) Results and Discussions, and (4) General Discussion. The first chapter provides an overview of the background literature relevant to the present study. This chapter contains the following sub-sections: Section 1.2 provides a brief overview of the spectrum of childbirth-related psychological distress, covering postnatal blues, postpartum psychosis, and postnatal depression. An argument is put forward for considering anxiety, anxious-depression and stress as indicators for distress in the postpartum. Antenatal depression and anxiety is briefly covered in this section. Section 1.3 presents an overview of the cognitive theories of depression, introducing the concept of cognitive vulnerability, which includes notions of control and characteristic ways of thinking. Section 1.4 overviews the cognitive theories of anxiety. This section briefly discusses the relationship between anxiety and depression, and presents the cognitive vulnerability framework for conceptualizing anxiety. This framework incorporates perceptions of control and characteristic ways of thinking. Section 1.5 provides an overview of the theories of stress and coping, (i.e., the cognitive-phenomenological model of stress and coping), emphasizing the role of appraisal, which incorporates perceptions of mastery and control, as well as characteristic ways of thinking. Section 1.6 presents an overview of the literature on control, and the role of control in the development of depression, anxiety and stress. Section 1.7 contains an overview of the research on risk factors for postnatal depression in terms of vulnerability factors and sources of stress. These findings are presented within the context of the cognitive vulnerability-stress framework, with an emphasis on cognitive factors. Section 1.8 presents a rationale for the present study (integrating the theory and findings presented in previous sections). This section presents a cognitive vulnerability-stress model that brings together the vulnerability factors and sources of stress proposed in the present study to be factors relating to postnatal distress. This section also provides a background into the measurement of postnatal distress (with a rationale for the measurement used in the present study), as well as specific hypotheses relating to
each variable measured in the present study. This section finishes with five main aims of the study.

The second chapter outlines the study design; the collection of data and the sample; a description of new measures, as well as the previously reported psychometric properties of the measures used in the present study; and an overview of the statistical analyses. Chapter 3 comprises the presentation of the characteristics of the sample, followed by the results, divided into five sections. Each section corresponds with one of the previously stated aims of the present study, and is titled according to its broad objective. Each section is followed by a discussion that pertains to the findings of that particular section. Each section is titled as follows:

1. Anxiety and Stress in the Postpartum: Is there more to postnatal distress than depression?
2. Development of two measures of control in a postpartum population
3. Differences between distressed and non-distressed women on sources of stress and vulnerability factors
4. Testing the cognitive vulnerability-stress model for postnatal distress
5. Differences between anxious-depressed women and their depressed-only or anxious and/or stressed counterparts

The final chapter (Chapter 4) summarizes the main findings from all of the five sections, in the form of a General Discussion. In this chapter, limitations of the present study, clinical implications and areas for future research are discussed.

1.2 Childbirth-Related Psychological Distress

Typically, childbirth-related psychological distress is conceptualized in terms of three mood disturbances that lie along a continuum. At the mild end is postpartum blues (also referred to as postnatal blues, maternity blues or baby blues) and at the severe end is postpartum psychosis (or puerperal psychosis). Postnatal depression lies somewhere in between (Miller, 2002; Pope, 2000). These mood disturbances can be differentiated in terms of their severity, their prevalence, and their clinical presentation and course (which includes time of onset, duration and recurrence) (Milgrom et al.,
Depression is the most prevalent and the most commonly researched postnatal outcome (Matthey et al., 2003; Terry, Mayocchi, & Hynes, 1996). However, the postpartum can be a time of great upheaval that can elicit significant somatic and cognitive-affective disturbances, that don’t necessarily fit the criteria for clinical depression (Milgrom et al., 1999; Pope, 2000; Terry, 1991a). This section argues for a broader view of postnatal distress to include anxiety and stress as well as depression. The spectrum of psychological disturbances in the postpartum is outlined, incorporating postnatal blues, postpartum psychosis, postnatal depression, anxiety, anxious-depression, and stress. In addition, antenatal depression and antenatal anxiety is briefly discussed.

1.2.1 Postnatal Blues

Postnatal blues are extremely common, with up to 80% of mothers experiencing transient emotional lability in the first week post-delivery (Milgrom et al., 1999; Pope, 2000). Postnatal blues are characterized by mild dysphoria, tearfulness, irritability and anxiety. These symptoms tend to peak at three to five days post-delivery (often coinciding with the onset of lactation) (Milgrom et al., 1999; Miller, 2002; Pope, 2000), and can continue for ten to fourteen days (Milgrom et al., 1999; Pope, 2000). According to Pope (2000), if symptoms continue for longer than a period of two weeks, further assessment is required. Postnatal blues are unrelated to psychiatric history, environmental stressors, parity, or cultural context (Miller, 2002). Miller (2002) posited that the greater the change between pregnancy and postnatal levels of oestrogens and progesterone, the greater the likelihood of developing postnatal blues. Other authors have reported an association between dramatic hormonal changes in the immediate postpartum period and postnatal blues, however this association has not been associated with later onset depressive symptoms (see Hipwell et al., 2004).

Milgrom et al. (1999) stated that it is unclear whether women who experience severe postnatal blues are at increased risk of developing postnatal depression. In a study of 370 women, maternal mood within three days of delivery was found to be the best predictor of subsequent postnatal depression (Lane et al., 1997). According to Miller (2002), the emotional reactivity inherent in postnatal blues may increase women’s vulnerability to depression in conditions of high stress and inadequate support.
1.2.2 Postpartum Psychosis

Postpartum psychosis is the least common but most severe of the postnatal mood disturbances (Pope, 2000), affecting one to two women in every 1000 women who have given birth (Scottish Intercollegiate Guidelines Network [SIGN], 2002). Women with postpartum psychosis experience severely disturbed mood and behaviour, with symptoms often appearing in the first week following childbirth, and onset typically between the first four to six weeks post-birth (Milgrom et al., 1999; Pope, 2000). Women with postpartum psychosis present with confusion, agitation, delusions or extreme disorganization, and hallucinations of a paranoid type, which often focus on the infant (Milgrom et al., 1999; Pope, 2000). According to Pope (2000), most postpartum psychoses are bipolar depressive episodes, and are most common among mothers who have a personal or family history of schizophrenia or bipolar disorder. Recurrence of postpartum psychosis is common following subsequent births (Pope, 2000).

1.2.3 Postnatal Depression

Given the rarity of postpartum psychosis and the transient nature of postnatal blues, it has been postnatal depression that has received the most research attention (Terry et al., 1996). Postnatal depression is said to be the most prevalent mood disorder associated with childbirth (Pope, 2000). Depending on the time and type of assessment method used (Honey, Bennett, & Morgan, 2003), prevalence rates of postnatal depression vary from 3% to 30% (Gotlib, Whiffen, Mount, Milne, & Cordy, 1989; Whiffen, 1992). A meta analysis (of 59 studies) reported the average rate of postpartum depression to be 13% (O’Hara & Swain, 1996). A range of psychosocial variables have been identified as risk factors for postnatal depression. These include a history of depression, antenatal depression, relationship difficulties, a lack of social support, stressful life events, a difficult infant temperament, and dysfunctional personality characteristics (Boyce & Hickey, 2005; Boyce, Johnstone, Hickey, Morris-Yates, Harris, & Strachan, 2000; Milgrom et al., 1999; Pope, 2000). Although there have been investigations into the biological aetiology of postnatal depression, findings are equivocal, and further research is said to be required (see Milgrom et al., 1999; Pope, 2000). According to Milgrom et al. (1999), the most common view is that biological factors, such as hormonal and biochemical changes, co-exist with psychosocial factors
to produce depression, and as a result these authors advocate using a biopsychosocial perspective for understanding postnatal depression. Hipwell, et al. (2004) stated that hormonal factors have been linked to the onset of low mood in the initial weeks after delivery, whereas psychosocial factors are more likely in the aetiology of later depression.

Symptoms of postnatal depression include diminished interest and pleasure, lowered mood, anxiety, anger, irritability, low energy levels, appetite and sleep disturbance, feelings of guilt and sadness, diminished ability to think, concentrate or make decisions, anxiety about the baby, and sometimes suicidality and infanticidality (Milgrom et al., 1999; Pope, 2000; Robertson et al., 2004). According to Boyce and Stubbs (1994), “…symptoms such as irritability and anxiety are almost universal in women with postnatal depression” (p. 471). The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) (American Psychiatric Association, 2000) categorizes postnatal depression as a form of general depression - with a specifier coded postpartum depression - if its onset occurs within the first four weeks postpartum. However, women may not meet the criteria for a major depressive disorder, and may otherwise fall into other diagnostic categories of minor depressive disorder (depressive disorder, not otherwise specified); adjustment disorder with depressed mood; dysthymic disorder; or mixed anxiety-depressive disorder (currently a DSM-IV research category) (Milgrom et al., 1999; Weisberg, Makin, Culpepper, & Keller, 2005).

Milgrom et al. (1999) stated that the majority of episodes of postnatal depression occur in the first three months following birth, with a second peak observed at six to eight months postpartum. Pope (2000) pointed out that the duration of postnatal depression varies markedly, with estimates of 25% to 60% of cases remitting within three to six months postpartum and a further 15% to 25% of cases remitting within 12 months. Some researchers have found 50% of women to remain symptomatic for up to 24 months (Dennerstein, Varnavides & Burrows, 1986; Milgrom & McCloud, 1996). Pope (2000) stated that some cases persist for years, especially those that don’t receive treatment or receive inadequate treatment.

Although the postpartum onset specifier for postnatal depression is four weeks in the DSM-IV-TR, and six weeks in the International Classification of Diseases (ICD-10, World Health Organization), clinical practice allows for a longer period of symptom development, (Beck, 1999; Cox, 1986), which can be up to two years postpartum (Boyce & Stubbs, 1994). Matthey (2004) stated that it is unusual for practitioners to
adhere to the DSM-1V onset specifier of the first four-weeks postpartum. According to Pope (2000), “Time of onset can vary from dysphoria initially appearing during the antenatal period and increasing following the birth, to the onset of new cases within the first 12 months postpartum” (p. 18). Research has identified that women who experience postnatal depression have an increased risk for further episodes of depression following subsequent deliveries (Wrate, Rooney, Thomas, & Cox, 1985; Philipps & O’Hara, 1991; Cooper & Murray, 1995).

Evidence shows that antenatal depression is as prevalent as postnatal depression, although it has been neglected in comparison (Rubertsson, Waldenström, & Wickbert, 2003; Whiffen 1992; Green, 1998). According to two reviews (Pope, 2000; SIGN, 2002), there is sufficient evidence to support the increased likelihood of postnatal depression for those women who have been antenatally depressed. In fact, several studies have shown antenatal depression to be the most significant predictor of postnatal depression (see Beck, 1996; Dimitrovsky, Perez-Hirshberg, & Itskowitz, 1987; Gotlib et al., 1989; O’Hara, Schlechte, Lewis, & Wright, 1991; O’Hara & Swain, 1996; Watson, Elliott, Rugg, & Brough, 1984). Depressive symptoms such as sleep disturbance, appetite changes, fatigue, and emotional sensitivity can occur during pregnancy, but can be difficult to distinguish from the normal range of pregnancy-related symptoms (Elliott, Rugg, Watson, & Brough, 1983; O’Hara, Zekoski, Philipps, & Wright, 1990; Hendrick, Altshuler, Cohen, & Stowe, 1998). Most suicides in pregnancy have been found to occur in the second trimester, despite this trimester being considered a less likely time for the development of psychological problems (Pope, 2000). Risk factors for antenatal depression include single parenthood, young age, multiparity, poor educational background, lower socioeconomic status, and unemployment at the beginning of pregnancy (Pope, 2000).

1.2.4 Anxiety

It has been noted that there is a lack of systematic research on the course and risk factors for anxiety disorders in the postpartum, and that anxiety disorders are generally subsumed within diagnoses of postnatal depression (Matthey, et al., 2003; Pope, 2000; Ross & McLean, 2006). This is evidenced in the widespread use of the Edinburgh Postnatal Depression Scale (EPDS) in postnatal populations – a scale that has been validated against diagnostic criteria for depression, not anxiety (Matthey et al.,
Matthey et al. (2003) argued that the common focus on depression as the diagnostic benchmark for postnatal maladjustment, can result in cases of anxiety (without depression) being undetected and untreated, thereby leaving women potentially vulnerable to developing depression. In comparison to depression, research into anxiety in perinatal women has been relatively neglected (Heron, O’Connor, Evans, Golding, & Glover, 2004; Matthey et al., 2003; Ross, Gilbert Evans, Sellers, & Romach, 2003; Ross, & McLean, 2006; Stuart et al. 1998; Wenzel, Haugen, Jackson, & Brendle, 2005). However, several authors have reported the common occurrence of anxiety in the postpartum (Fisher, Feekery, & Rowe, 2004; Matthey et al., 2003; Pope, 2000; Ross & McLean, 2006; Stuart et al., 1998). For example, Robinson and Young (1982) found that 7.4% of their sample of new mothers had pure anxiety without depression. In an Australian study conducted by Matthey et al. (2003), the assessment of anxiety disorders in diagnostic interviews (at 6-weeks postpartum), approximately doubled rates of postpartum caseness in 408 first-time mothers. According to Shear and Oomen (1994), the postpartum is a period whereby there is an increased risk for the onset or worsening of anxiety disorders.

Findings in relation to specific anxiety disorders in the postpartum have been reported and recently reviewed by Ross and McLean (2006). These disorders include the following: Obsessive Compulsive Disorder (see Abramowitz, Schwartz, Moore & Luenzmann, 2003 for a comprehensive review), Panic Disorder (Matthey et al., 2003), Post-traumatic Stress Disorder (Ayers & Pickering, 2001; Czarnocka & Slade, 2000; Wenzel et al., 2005; White, Matthey, Boyd, & Barnett, 2006), and Generalized Anxiety Disorder (Wenzel et al., 2005). Wenzel et al. (2005) suggested that postpartum anxiety disorders may be more common than postpartum depression.

Matthey et al. (2003) stated that “given the recognition that significant anxiety may also be present in new mothers, it is somewhat puzzling that most researchers use only the Depression modules of diagnostic interviews, and not the Anxiety modules” (p. 140). Anxiety disorders are common without depression, especially in women (Brown, Campbell, Lehman, Grisham, & Mancill, 2001; Matthey, 2004; Matthey et al., 2003). Researchers have pointed to the importance of assessing postnatal anxiety as distinct from postnatal depression (Heron et al., 2004; Matthey et al., 2003) in order to provide appropriate treatments that target the symptoms and aetiology of anxiety specifically (Milgrom et al., 1999).
1.2.4.1 Anxious-depression

It is also widely acknowledged that anxiety and depression commonly co-exist (Heron et al., 2004; Pope, 2000). In a large community epidemiological study, comorbid depression and anxiety was found in at least half of the cases (Kessler et al., 1998). In a postpartum study by Wenzel et al. (2005), up to 50% of women reported comorbid anxiety and depressive symptoms. Hendrick et al. (2000) used a chart review, and found that postnatally depressed patients were more likely to present with symptoms of anxiety than non-postnatal patients. Ross et al. (2003) also reported that anxiety symptoms are more commonly found to be a feature of postnatal depression than of non-postnatal depression. Hickie (1999) noted that despite anxious-depression being a common presentation in general primary care and psychiatry settings, the DSM-1V – “the psychiatrist’s bible” – deals poorly with this diagnosis, referring to it as a “possible form of depressive disorder that may warrant further investigation” (p. 173). In cases where depression and anxiety co-occur (anxious-depression), there is a risk that treatment strategies focus on the depressive symptoms, to the preclusion of specific treatments for the symptoms of anxiety (Matthey et al., 2003). Ross et al. (2003) noted the importance of determining whether anxiety symptoms are part of a primary depression, or whether they form their own clinical entity.

According to Matthey et al. (2003) research with non-postpartum populations has shown that comorbidity of anxiety and depression – anxious depression – is more difficult to treat than each disorder alone. Patients with anxious-depression (compared to patients with either anxiety or depression alone) have been shown to manifest more severe symptoms (Rivas-Vazquez et al., 2004), show poorer acute and long-term outcome (Rivas-Vazquez et al., 2004), exhibit increased levels of social-occupational impairment (Kush, 2004), are at increased risk for suicide (Fawcett, 1997; Sareen, Cox, Afifi, de Graaf, ten Have, 2005), and require specific treatment strategies for both sets of symptoms (Emmanuel, Simmonds, & Tyrer, 1998; Kush, 2004). These findings suggest that anxiety in the context of depression may be an important clinical concern.

1.2.4.2 Antenatal anxiety

A meta-analysis of 44 studies by Beck (1996) showed that antenatal anxiety is a strong predictor of postnatal depression (also see Milgrom et al., 1999; O’Connor,
Similarly, antenatal anxiety is associated with anxious symptomatology in the postpartum (Brouwers, van Baar, & Pop, 2001a; Heron et al., 2004). High levels of anxiety in pregnancy have been associated with somatic complaints and a number of gestational and obstetric complications (Brouwers et al., 2001a). O’Connor et al. (2002) concluded that antenatal anxiety is a risk factor for subsequent behavioural and emotional problems in children (i.e., assessed at four years of age). According to Pope (2000), the literature on antenatal anxiety disorders is limited and contradictory. Yet it is likely that anxiety disorders occur during pregnancy for some women, especially given the types of symptoms women report such as crying and feeling nervous and worried (Pope, 2000). It is important however to distinguish between the normal physical and emotional adjustment to pregnancy and more debilitating anxiety in the antenatal period (Pope, 2000). According to some authors, midwives and obstetricians can often overlook symptoms of anxiety by considering them to be normal concomitants of pregnancy (e.g., concerns about the baby’s health or about maternal competencies) (Sutter-Dal lay, Giaconne-Marcesche, Gl atigny-Dally, & Verdoux, 2004). These authors stated that further investigation should be conducted in order to identify possible anxiety disorders. Heron et al. (2004) suggested that anxiety may be a precursor to depression, as a result of altered physiological pathways, or from the consequences of failing to manage stress.

1.2.5 Stress

As previously stated, many women experience somatic and cognitive-affective changes after childbirth, but they may not fit the criteria for clinical depression (Pope, 2000). The transition to parenthood has been identified as a major life event on most life event scales (e.g., Holmes & Rahe, 1967), and considerable evidence has supported the notion that new parenthood is a potentially stressful one (Terry 1991a; Terry, 1991b; Terry et al., 1996). Boyce and Stubbs (1994), pointed to the importance of mental health practitioners distinguishing between postnatal depression, and the ‘normal’ stress experienced by postnatal women in coping with the constant demands of a new baby and the associated fatigue. These authors caution that women’s normal responses to postnatal stressors may otherwise be ‘medicalized’ as postnatal depression. As a result, unnecessary antidepressant medication might be prescribed, which may result in further distress, given postnatal women’s general reluctance towards antidepressant medication.
as a treatment choice (Chabrol, Teissedre, Armitage, Danel, & Walburg, 2004). According to P.F. Lovibond and S.H. Lovibond (1995), stress is a distinct negative emotional state that involves chronic arousal (nervous tension, agitation) and impaired function. It has been reported that the effects of stress can biologically and psychologically sensitize people to future depression (Choenarom, Williams, & Hagerty, 2005). It therefore seems pertinent to assess postnatal women’s levels of stress (as separate from depression and anxiety), to identify the stressors impacting upon them, and to tailor appropriate treatments to specifically target the symptoms and aetiology of stress in the postpartum.

1.2.6 Summary

In summary, this review sets the stage for a broader conceptualization of postnatal distress over and above that of the commonly recognized postnatal disturbances of postnatal blues, postnatal psychosis and postnatal depression. To this end, it is proposed that anxiety and stress be considered as distinct disturbances in the spectrum of women’s postnatal experience, with particular attention being paid to women who have a combination of depression and anxiety (anxious-depression).

Given that the predominance of postnatal studies have used depression as an outcome measure, it follows that the theoretical basis for conceptualizing an extended view of postnatal distress (i.e., including anxiety and stress) begins with an examination of the general depression literature and its theoretical underpinnings (see Section 1.3). In particular, this thesis draws from the cognitive theories of depression, followed by the cognitive theories of anxiety (see Section 1.4), and the theories of stress and coping (see Section 1.5), in an effort to capture the cognitive aspects of the broader postnatal emotional spectrum.

1.3 Cognitive Theories of Depression

1.3.1 Overview

Researchers from various theoretical orientations have proposed theories to account for the aetiology of depression (Abela & D’Alessandro, 2002), and it is widely recognized, and empirically supported, that cognitive factors play an important role (Abela & D’Alessandro, 2002; Hollon, Shelton, & Davis, 1993; Robinson & Alloy,
2003). According to Dykman and Abramson (1990) cognitive approaches to understanding depression began with information-processing approaches in general, and the study of social cognition in particular. Cognitive processes (or specific contents of thought), have been shown to mediate emotional responses (Lazarus, 1966; Lazarus & Folkman, 1984; Terry, 1994).

Our understanding of the aetiology of general depression has been greatly facilitated by the cognitive theories of depression that posit cognitive processes or characteristic ways of thinking to serve as depressive vulnerabilities (Grazioli & Terry, 2000; Hawkins & Miller, 2003). Based on the early work of Martin Seligman (e.g., 1975), depression has been commonly thought to be associated with a perceived lack of control over aversive events or negative outcomes (Walker, 2001). The next sections review the cognitive vulnerability-stress theories of depression, which are based on the notion that stressful life events (like new motherhood) have the potential to interact with cognitive vulnerability or characteristic ways of thinking that for some individuals can result in depression.

1.3.2 Cognitive vulnerability-stress theories of depression

Ingram (2003) stated, “nothing brings researchers closer to understanding the essential features of depression than does the idea of vulnerability” (p. 77). Cognitive vulnerability–stress theories of depression have been traditionally classified into two broad groups: (1) Hopelessness theory (Abramson, Metalsky, & Alloy, 1989), and (2) Beck’s cognitive theory (Beck, 1967; Beck, 1976; Beck, Rush, Shaw, & Emery, 1979). Both of these theories are cognitive vulnerability-stress or diathesis-stress models, which explain depression in terms of negative cognitions that arise in response to stressful life events (Monroe & Simons, 1991; Robinson & Alloy, 2003). In other words, these theories state that stress activates a diathesis, transforming the potential for predisposing or characteristic ways of thinking (vulnerability), into depression (Grazioli & Terry, 2000; Monroe & Simons, 1991). Both the hopelessness theory and Beck’s cognitive theory have received considerable empirical support (see Abramson et al., 2002; Ingram, Miranda, & Segal, 1998, for general reviews). Specifically, prospective research has shown that cognitive vulnerability interacts with life stressors to increase future depressive symptoms (e.g., Hankin, Abramson, & Siler, 2001; Joiner, Metalsky, Lew, & Klocek, 1999; Lewinsohn, Joiner, & Rohde, 2001; Metalsky & Joiner, 1992).
1.3.2.1 Hopelessness theory

The foundation for hopelessness theory was Seligman’s helplessness theory of depression, which was grounded in studies on animals (as cited in Dykman & Abramson, 1990). The helplessness theory asserted that when an organism is unsuccessful in its attempts to control the environment, helplessness and depressive symptoms are the result (Seligman, 1975). For humans, the theory suggested that after experience with aversive events and uncontrollable outcomes, the individual develops an expectation that future events will be uncontrollable, and as a result of such beliefs, develops emotional distress, or depression (Dykman & Abramson, 1990). Although this theory held much intuitive appeal and scientific testability, it was rendered inadequate as a theoretical construct for understanding human depression, and as a result the reformulated learned helplessness model of depression emerged (Abramson, Seligman, & Teasdale 1978).

The reformulated learned helplessness model was largely based on attribution theory, emphasizing that people seek to understand the causes of events in their efforts to predict and control them, thus engaging in causal attributions for uncontrollable events (Dykman & Abramson, 1990). The reformulated model asserts that in the face of persistent uncontrollable or negative life events, people produce a pattern of attributions (attributional styles) for explaining these events. These attributional styles can over time, become internal, global and stable, rendering the individual vulnerable to helplessness and depression (Chorpita & Barlow, 1998; Grazioli & Terry, 2000; Ingram, 2003). More specifically, under conditions of stress, the tendency to attribute the cause of an event negatively – to internal (“it’s me”), stable (“always”), and global factors (“in all situations”) - can precede a depressive episode (Grazioli & Terry, 2000; Hankin, Abramson, Miller, & Haefel, 2004; Walker, 2001). Thus, the reformulated learned helplessness model “…proposes a diathesis-stress interaction, to the extent that a combination of cognitive vulnerability and stress leads to the manifestation of depressive symptoms” (Grazioli & Terry, 2000, p. 330).

Walker (2001) distinguished between hopelessness and helplessness. She suggested that hopelessness arises from prolonged failure to gain control (by way of self or others) and a failure to see any possibility of gaining control. Helplessness is associated with a perception of threat or loss of control that is elicited by persistent
uncertainty or unpredictability or by an episode of “…sudden temporary but total loss of control…” (p. 5). Helplessness is discussed further in Section 1.4.1.

1.3.2.2 Beck’s cognitive theory

In Beck’s cognitive theory, cognitive vulnerability is conceptualized as negative self-schemata - developed from early life experience - that contain dysfunctional attitudes (Beck, 1967; Beck et al., 1979). These dysfunctional attitudes are described as being stable and enduring cognitive sets that are rigid, and often contain unrealistic standards upon which people appraise themselves, such as self-worth being based on being perfect, or on attaining approval from others (Dykman & Abramson, 1990; Grazioli & Terry, 2000; Hankin et al., 2004). In particular, depressive vulnerability has been elaborated to include two specific personality types of sociotropy (excessive reliance on social approval) and autonomy (extreme need for independence, achievement of personal standards, and control) (Beck, 1983). Each personality type (or superordinate schemata) is said to create unique vulnerabilities to different types of stressors. Studies have confirmed these personality types as depressive vulnerabilities, however contrary to Beck’s prediction of independence, substantial correlations have been found between these two personality types (see Hawkins & Miller, 2003). According to Beck (1967, 1983), these schemata lie dormant in people’s memories until stressful events activate them.

Like the reformulated learned helplessness model, Beck’s cognitive theory posited a vulnerability-stress interaction whereby dysfunctional attitudes interact with negative life events to contribute to depressive symptoms (Hankin et al., 2004). An adverse event, including loss and failure, can lead depression-prone individuals to blame themselves which can lead to loss of self-esteem, pessimism, and a feeling of hopelessness (Walker, 2001). Dykman and Abramson (1990) speculated that it may be individuals’ tendency to self-focus - particularly following failure - that increases the frequency of negative schema activation.

1.3.3 Self-awareness theories of depression

Self-awareness theories of depression, propose a central role for self-regulatory, self-focused attention (Carver & Scheier, 1981; Duval & Wicklund, 1972; Pyszczynski
based on the association between how individuals evaluate themselves and their vulnerability to depression (Veith et al., 2003). These theories hypothesize that when stress-reactive cognitions are self-evaluative, these cognitions may contribute to the onset of a depressive episode to the extent that people perceive a failure to have met their expectations (Robinson & Alloy, 2003; Vieth et al., 2003). Reviews by Segal and Blatt (1993) and by Strauman and Kolden (1997) referred to an extensive literature that showed the association between self-regulatory cognition and vulnerability to distress. It has been well documented that when an individual perceives a discrepancy between his or her current status and his or her goals or standards, this can lead to distress (Carver, Lawrence, & Scheier, 1996; Strauman & Higgins, 1993). The original Objective Self-Awareness theory (Duval & Wicklund, 1972), referred to a standard as “…a mental representation of correct behavior, attitudes, and traits…All of the standards of correctness taken together define what a ‘correct’ person is” (Duval & Wicklund, 1972, p. 3-4). Early research showed that when a discrepancy existed between the self and one’s standard, two behavioural options were used to restore self-to-standard consistency: (1) people could actively change their actions, attitudes, or traits in order to be more congruent with the standard they held, or (2) people could avoid the self-focusing stimuli and circumstances, terminating the comparison process, and hence all self-evaluation (see Silvia & Duval, 2001).

According to Silvia and Duval (2001), later research (in line with Bandura, 1977 and Lazarus, 1966) incorporated the notions of cognitive appraisal and attributions. “When people are discrepant from a standard, they make attributions for the cause of the discrepancy and appraise the likelihood that the discrepancy could be rapidly reduced. If the discrepancy can be reduced, people will attribute failure internally and attempt to change self. If the discrepancy cannot be reduced, people will attribute failure externally to a similar possible cause, such as a standard or another person” (p. 233). According to Silvia and Duval (2001, p. 233), “…it does not matter what cognitive element is changed so long as the goal state of cognitive consistency is achieved. So, when life events bring about a self-standard discrepancy, it is through a process of self-regulation that people will attempt to reconcile the discrepancies between their real selves and their ideal selves in order to restore self-standard congruity (Carver & Scheier, 1981; Duval & Wicklund, 1972; Pyszczynski & Greenberg, 1987).
The capacity for self-regulation is said to develop in childhood, as a function of cognitive maturation, socialization, and underlying temperament (Veith et al., 2003). Self-regulation involves a continuous, automatic process of determining congruence between one’s behaviours and personal attributes, with that of one’s goals or standards. According to Veith et al. (2003), self-regulation is based on a two-part cognitive/motivational system: (1) A promotion system that is concerned with accomplishment and achievement or ideal standards – “being the best I can be”. This system is directed towards maximizing positive outcomes. (2) A prevention system that is concerned with obligation and responsibility or ought standards – “being the kind of person that I am supposed to be”. This system is directed towards minimizing negative outcomes. The self-evaluative aspects of the two regulatory systems make up what is commonly regarded as personality (Carver & Scheier, 1990; Bandura & Cervone, 2000). Individual differences in self-regulation (goals, ways of pursuing goals, and affective consequences of perceived success or failure) are said to influence emotional vulnerability (Veith et al., 2003). According to Veith et al. (2003), failure to achieve ideal standards can lead to feelings of dejection, which can ultimately contribute to a depressive episode. Similarly, failure to achieve ought standards can lead to feelings of agitation, which can result in apprehension vigilance - a state that is commonly associated with anxiety disorders. In sum, when self-regulation does not allow the individual to eliminate a self-to-standard discrepancy, or the individual is unable to disengage from the self-regulatory process, this may lead to negative affective states (Robinson & Alloy, 2003).

### 1.3.4 Parental characteristics and later depression

According to Ingram (2003) other explanations exist for the role of cognitive factors in the development of depression. Consistent across cognitive models of depression, is the notion that problematic parent-child interactions produce a vulnerability to depression. For example, attachment theory (Bowlby, as cited in Ingram, 2003) conceptualizes cognitive vulnerability as arising from disruptions to secure attachments with childhood caretakers. Consistent nurturing, affection, and protective interactions with parents are said to facilitate the child’s capacity to form adaptive bonds with others later in life. When disrupted however, maladaptive internal working models (similar to schema models) are said to develop and to generalize into
interpersonal relationships that may then become ineffective in buffering against stress (Ingram, 2003). This is relevant as it has been well established in the research literature that relationships and social support serve as protective mechanisms against psychological ill-health (Quittner, Glueckauf, and Jackson, 1990). In terms of a diathesis-stress model, Quittner et al. (1990) stated that individuals who report high levels of stress, who also have adaptive social relationships, are often protected from the negative impact of stress, with a lessened likelihood of symptom development. Therefore, to the extent that maladaptive schemata contribute to dysfunctional relationships, poor relationships are likely to predict poor affective outcomes (Quittner et al., 1990).

In a similar vein to attachment theory, Ingram (2003) drew from other bodies of literature that investigated parent-child interactions, and later cognitive vulnerability. Ingram (2003) referred to several reviews that have compellingly linked parental characteristics to the development of depression in adult offspring (e.g., Gerlsman, Emmelkamp, & Arrindell, 1990; Ingram et al., 1998). McCranie and Bass (1984) reported that in a sample of female nursing students, an over-controlling mother was associated with dependency needs, and an over-controlling mother and father, was associated with a greater tendency toward self-criticism. High levels of self-criticism have been found to be significantly related to the recall of poor relationships with parents, especially with mothers (Brewin, Firth-Cozens, Furnham, and McManus, 1992). Research has demonstrated that individuals with high levels of self-criticism are vulnerable to depression, with self-criticism being a core component of the cognitive processes found in highly perfectionistic individuals (Blatt, 1995; Blatt & Zuroff, 1992).

1.3.5 Perfectionism: A vulnerability factor for depression

According to cognitive vulnerability-stress theories, negative cognitive processes or characteristic ways of thinking are associated with depression. Beck’s cognitive theory posited that the unrealistic standards upon which people appraise themselves often include themes of perfectionism and of attaining approval from others. The self-awareness theories pointed to the discrepancy between individuals’ current status and that of their goals or standards, as constituting a vulnerability to depression. So, what if individuals hold highly perfectionistic, unrealistic expectations? Perfectionistic individuals set themselves excessively high standards (Stöber &
Joormann, 2001). These standards contain self-related and social components (Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1990, 1991b, 1993), that involve overly critical self-evaluations (Blatt, 1995; Frost et al., 1990), and high levels of self-dissatisfaction (Flett & Hewitt, 2004). Perfectionists hold cognitions about the attainment of ideal standards, and they tend to focus on their failure to attain perfection (Flett, Hewitt, Blankstein, & Gray, 1998).

Perfectionism reflects a characteristic way of thinking that has been found to be a vulnerability factor for depression (Blatt, 1995; Frost et al., 1990; Hewitt & Dyck, 1986; Hewitt & Flett, 1990, 1991a, 1991b), and has been associated with poorer outcomes in the treatment of clinical depression (Blatt, 1995). Several studies (using clinical and non-clinical samples) have linked trait levels of perfectionism to depression (e.g., Flett et al., 1998; Flett, Hewitt, Blankstein, & Mosher, 1991; Frost et al., 1990; Hankin, Roberts, & Gotlib, 1997; Hewitt & Flett, 1991a, Hewitt, Flett, & Ediger, 1996). In line with self-awareness theories of depression, Flett et al. (1998) suggested that, one’s tendency to engage in excessive perfectionistic thinking is associated with depressive tendencies to the extent that rumination about perfectionistic standards serves to highlight possible discrepancies between the actual self, and the perfectionistic ideal self.

Early conceptualizations of perfectionism considered this construct to be unidimensional (Stober & Joormann, 2001). Later conceptualizations identified the multidimensional nature of perfectionism which has been reflected in two widely used scales, both entitled the Multidimensional Perfectionism Scale (MPS; Frost et al., 1990; Hewitt & Flett, 1991b, 1996). Although the authors of these scales operationalized perfectionism in different ways, both sets of authors have agreed that perfectionism comprises two distinct components - self-related or personal and social or interpersonal (O’Connor & O’Connor, 2003). According to Cox and Enns (2003), Hewitt and Flett’s scale has received considerably more empirical attention in clinical samples than that of Frost et al. It is therefore Hewitt and Flett’s (1991b, 1996) perfectionism scale that was used in the present study, and to which the following description and review of related studies refers.

Hewitt and Flett’s (1991b, 1996) MPS contains three dimensions: Self-oriented perfectionism is an achievement-based dimension (Hewitt et al., 1996) that involves excessively high, unrealistic standards for the self with intensive self-scrutiny and criticism, and an inability to accept perceived flaws, or failures within oneself across
multiple domains (Blatt, 1995); **Socially-prescribed perfectionism** is an interpersonal dimension (Hewitt et al., 1996) that involves beliefs that others hold unrealistic expectations of oneself that are difficult or impossible to meet, and upon which the approval and acceptance of others is based (Blatt, 1995; Hewitt & Flett, 1991a, 1991b); and **Other-oriented perfectionism** is an interpersonal dimension that involves the need for others to be perfect (Hewitt et al., 1996). Studies have shown that self-oriented perfectionism, and socially prescribed perfectionism in particular have implications for depression (Hewitt & Flett, 1991a; Hewitt & Flett, 1993), with other-oriented perfectionism relating to depression by way of the distress of difficult relationships.


**Self-oriented perfectionism** has been found specifically to interact with negative achievement-related stressors to predict depression, and **socially-prescribed perfectionism** has been found to interact with both achievement and interpersonal stress to predict depression (Hewitt & Flett, 1991b, 1993). Hewitt and Flett (1993) suggested that socially-prescribed perfectionism may contribute to depression due to interpersonal sensitivity, lack of control, and excessive needs to attain approval, and avoid negative evaluation (see Hewitt & Flett, 1991b). Self-blame among socially-prescribed perfectionists may therefore stem from a perceived inability to succeed at, or control imposed standards (Hewitt & Flett, 1993). Evidence in relation to **other-oriented perfectionism** has been equivocal, and is not relevant to the present study.

In keeping with the diathesis-stress literature, perfectionism has been viewed as a psychological vulnerability, that when activated by stress, can result in depression (Hewitt & Flett, 1993; O’Connor & O’Connor, 2003; O’Connor et al., 2002; Rice & Lapsley, 2001). In a sample of 261 college students, support was found for Beck’s causal model of depression vulnerability, whereby harsh parenting (characterized in part
by criticalness and excessively high parental expectations) led to the development of maladaptive perfectionistic beliefs, which led to a vulnerability to depression (Enns, Cox, & Clara, 2001). According to Hamachek (as cited in Blatt, 1995), excessive concern over making mistakes, and the fear of negative judgements by others, are derived from childhood experiences where parents were perfectionistic, overly critical, demanding and less supportive. In general, empirical evidence is supportive of the notion that problematic parent-child interactions produce cognitive vulnerability for later affective disorders (Ingram, 2003).

1.3.6 Summary

It is evident that the cognitive theories discussed above, point to cognitive vulnerability as a central construct in explaining depression. Hopelessness theory postulates that in the face of persistent uncontrollability or negative life events, people produce a pattern of attributions or attributional styles, which include negative explanations for such events. Beck’s theory refers to dysfunctional attitudes that, in the presence of stressful life events, are negative self-schemata that often contain unrealistic standards upon which people appraise themselves. Self-Awareness theories refer to goals or standards against which people seek to attain self-to-standard congruity. Ingram (2003) argued that the origins of vulnerability to depression occur from disruptions with key attachment figures. These early disruptions (during key developmental periods), activate negative affective structures and lead to the development of negative maladaptive self-cognitions (such as perfectionism and fear of negative evaluation), which in turn create more stress, more negative affect, and less positive relationships, in the presence of life events (Ingram 2003). According to Walker (2001), central to theories of depression is the concept of loss or lack of control over important outcomes in individuals’ lives, and the associated cognitive appraisals.

1.4 Cognitive Theories of Anxiety

1.4.1 Overview

The study of learned helplessness - although originally conceptualized for the purposes of understanding depression - has been a useful psychological model for anxiety (Chorpita & Barlow, 1998). Seligman (1975) proposed that depression results
when an individual is convinced that the situation he or she is in is uncontrollable. Anxiety on the other hand occurs when an individual is uncertain about controllability. Walker (2001) summarized that whereas a sense of hopelessness is associated with depression, a sense of helplessness is associated with anxiety (with or without depression). Over the past fifty years, the experimental laboratory has shown that anxious behavior, characterized by extreme agitation, distractibility, restlessness, increased autonomic responding, muscle tension, hypersensitivity, and interference with ongoing performance, is consistently associated with diminished predictability and control (Barlow, 1988, p. 261).

Mandler (1972) referred to anxiety as a state of helplessness. He suggested that arousal leads to helplessness as a result of a perception that the individual has no cognitive or behavioural response to terminate the state of arousal. Barlow (1988, 2000) drew from emotion theory, experimental psychology, cognitive science, neuroscience, learning theory and developmental psychology in his substantial contribution to our understanding of anxiety and its disorders. Barlow (2000) defined anxiety as “…a unique and coherent cognitive-affective structure within our defensive motivational system” (p. 1249) that has a primary function (or adaptive value) of preparing an organism for action. Anxiety is broadly characterized as a negative affective state that encompasses a sense of helplessness due to a perceived inability to predict, control or obtain desired outcomes (Barlow, 2000). The experience of anxiety involves a strong physiological component that prepares the individual towards a ‘readiness’ to deal with potentially negative events (Barlow, 2000).

Barlow (1988) also described anxiety as a being diffuse (associated with a variety of situations, events and expressions) and as being characterized by high negative affect, arousal, perceptions of a lack of control, and shifts in self-evaluative attention. Some authors have distinguished anxious arousal, or somatic anxiety (involving symptoms of physiologic hyperarousal and somatic tension) from anxious apprehension or worry (involving verbal rumination - often about possible negative future events) (Nitschke, Heller, Imig, McDonald, & Miller, 2001; Watson et al., 1995).

The next sections refer to cognitive theories of anxiety by examining the cognitive affective differences between anxiety and depression, and by presenting the cognitive vulnerability-stress theories in relation to anxiety specifically. Emphasis is on the role of control (or lack of control) in relation to the manifestation of anxiety.
1.4.2 Anxiety and its relationship with depression

Although depression and anxiety commonly co-occur, depression and anxiety are different cognitive-affective structures with different underlying mood states (Barlow, 1988). Sequentially, anxiety is more likely to precede depression than to follow (Angst, Vollrath, Merikangas, & Ernst, 1990), and although anxiety is possible without depression, cases of depression without anxiety are relatively rare (Barlow, 1988; Di Nardo & Barlow, 1990; Dobson, 1985). Accordingly, Chorpita and Barlow (1998) argued that anxiety is a core component of depression. Clark and Watson (1991) conceptualized the relationship between anxiety and depression using a tripartite structure. This view suggests that anxiety (physiological hyperarousal) and depression (anhedonia or absence of positive affect) can be reliably and validly assessed as separate phenomena, as well as consisting of a shared general distress or negative affective component (a tendency to be distressed, worried, anxious, self-critical and have a negative view of self) (Clark, Steer, & Beck, 1994; Clark & Watson, 1991). In other words, depression and anxiety have both shared and unique features.

The primary differences between depression and anxiety are found in the underlying supportive physiology, and in different action tendencies or readiness to cope with and control aversive events (Barlow, 1988). Faced with negative life events, depressed individuals show a lack of action tendencies (i.e., helplessness or hopelessness), whereby anxious individuals apprehensively anticipate the next occurrence of these, or similar events, by preparing for action (Barlow, 1988). Where depressed patients are more likely to blame themselves for an aversive event, to doubt their ability to cope, and to give up as a result, anxious patients try to deal with aversive events by continually preparing to cope. According to Clark et al. (1994), depression involves negative cognitions that are pervasive and absolutistic statements about past loss or failure. Anxiety involves cognitions that reflect possible danger or harm that is more situational or probabilistic.

Barlow (2000) stated “…the strong consensus is that anxiety and related emotional disorders, such as depression, have a common genetic basis, and…specific differences in these disorders are best accounted for by environmental factors” (p. 1254). Psychological vulnerabilities, and biological vulnerabilities are said to produce anxiety disorders and depression. However an additional vulnerability is implicated in other more specific anxiety disorders. An example of this is social phobia. In the
development of this disorder, early learning experiences are likely to have involved the association of anxiety with life circumstances that involve social evaluation contexts (Barlow, 2000).

1.4.3 A cognitive vulnerability-stress model of anxiety

Like the diathesis-stress models of depression, Barlow (2000) proposed a diathesis-stress model for anxiety, maintaining that vulnerabilities are likely to lead to anxiety, when triggered by a stressful life event. In a study using biologically vulnerable anxious monkeys, monkeys were found to only behave anxiously while under stress (Barlow, 1988). Deacon and Abramowitz (2004) stated that anxiety disorders result from an increased sense of personal vulnerability, and from distorted beliefs that focus on physical or psychological threat. Under conditions of stress, anxious apprehension occurs in individuals if they are psychologically vulnerable as a result of prior experiences with unpredictable and uncontrollable events, and as a result of a learned inability to cope with these types of events (Barlow, 1988). Barlow (2000) proposed that vulnerability to developing anxiety is a combination of genetic factors (constituting a generalized biological vulnerability), and psychological factors, or psychological vulnerability (formed through early life experiences), and it is in the presence of a stressful life event or aversive encounter that this vulnerability is ultimately manifested. Bandura (1977) proposed that anxiety (or emotional arousal) is maintained within an individual until coping behaviours are put into place (see Section 1.5.4).

1.4.4 Anxiety and control

Anxiety has commonly been linked to perceptions of control (Rapee, Craske, Brown, & Barlow, 1996; Walker, 2001). Barlow (2000) suggested that a diminished sense of control, or unpredictability is at the heart of anxiety in humans. According to Barlow (2000), “Individuals suffering from anxiety and related disorders process failures or perceived deficiencies as an indication of a chronic inability to cope with unpredictable, uncontrollable, negative events, and this sense of uncontrollability is associated with negatively valenced emotional responding” (p. 1254). Cognitive models of emotional disorders have shown that dysfunctional or negative ways of
thinking - in particular beliefs about control - characterize a vulnerability to anxiety (Weems, Silverman, Rapee, & Pina, 2003). Barlow (2000) suggested that a state of helplessness occurs because of a perceived inability to predict, control, or attain desired outcomes in upcoming situations or contexts. Barlow (2000) described this sense of uncontrollability to be focused largely on future potential threats, danger, or perceived upcoming negative events. When individuals experience events as unpredictable, they may feel less able to cope with, or control these events, in which case anxiety can be the result (Barlow, 1988).

Historically, it was the early animal experiments that first made the case for the link between a loss of control (and/or predictability) and resulting anxiety (Mineka & Kihlstrom, 1978). These studies demonstrated that anxiety in rhesus monkeys occurred as a result of negative life events, in combination with uncontrollability, unpredictability or both (e.g., Insel, Champoux, Scanlan, & Suomi, as cited in Barlow, 2000; Mineka, Gunnar, & Champoux, 1986). Sapolsky and colleagues revealed that early experiences with uncontrollability and unpredictability in primates (whether reared in the laboratory or in the wild), were linked to later manifestations of anxiety and stress (e.g., Sapolsky, Alberts, & Altman, 1997; Sapolsky & Ray, 1989).

On the human front, early parenting styles have been implicated in the development of a sense of control in children (Chorpita & Barlow, 1998). Attachment theory points to the development of a cognitive style that is characterized by security and predictability, as derived from a secure and predictable relationship between a child and his or her caregiver (Chorpita & Barlow, 1998). Both the control and attachment literature identify two fundamental parenting dimensions that are critical to children’s healthy functioning (i.e., early experiences of control and mastery over their environment): (1) Warmth, sensitivity, consistency, and contingency, and (2) encouragement of autonomy, lack of intrusion, overprotection, and lack of excessive parental control (Chorpita & Barlow, 1998). Barlow (2000) proposed that a cognitive template is fostered during early experience, which contributes to the formation of vulnerability. It has been proposed that this cognitive vulnerability works as a mediator between uncontrollable stimuli and anxiety in childhood. This vulnerability is said to operate later as an amplifier, or moderator for stressful life events (Barlow, 2000; Chorpita & Barlow, 1998). According to Barlow (2000), a sense of mastery or control during early development appears to protect individuals against the likelihood of anxious responding.
1.4.5 Perfectionism and fear of negative evaluation as vulnerability factors for anxiety

Many studies (in both non-clinical and clinical populations) have found a relationship between maladaptive perfectionism and anxiety (e.g., Alden, Ryder, & Mellings, 2002; Antony, Purdon, Huta, & Swinson, 1998; Flett, Hewitt, Endler, & Tassone, 1994/1995; Frost & DiBartolo, 2002; Frost et al., 1990; Kawamura, Hunt, Frost, & DiBartolo, 2001). In particular, studies have shown a relationship between perfectionism and social anxiety in both clinical and non-clinical populations (Antony et al., 1998; Blankstein, Flett, Hewitt, & Eng, 1993; Hewitt & Flett, 1991b; Juster et al., 1996). More recently, Flett, Greene, and Hewitt (2004) found strong support for a link between perfectionism and anxiety sensitivity (a characteristic fear of one’s own fear). Kawamura et al. (2001) who used Frost and colleagues’ (1990) MPS found that, consistent with other findings (Juster et al., 1996; Stober & Joorman, 2001), maladaptive perfectionism was significantly correlated with aspects of anxiety that reflected social anxiety and worry. As Kawamura et al. (2001) summarized, “…perfectionism is related to the cognitive, but not necessarily the somatic factors associated with anxious distress” (p. 299).

Social evaluative concerns are a core component of socially-prescribed perfectionism, whereby excessive need for approval and extreme fear of negative evaluation are associated with perfectionists’ belief that others maintain exaggerated expectations of them (Blatt, 1995). When these excessive standards are not met, feelings of failure, helplessness and anxiety can result (Blatt, 1995). A similar, and potentially related construct to socially-prescribed perfectionism (without the perfectionistic component) is that of fear of negative evaluation. According to Leary (1983), people differ in terms of the degree to which they experience apprehension at the prospect of being evaluated negatively. According to Gaudiano & Herbert (2003), “Self-focus in the form of public self-awareness, occurs when individuals believe that they are being observed and evaluated by others.” (p. 538). High levels of self-focus characterize socially anxious individuals (Gaudiano & Herbert, 2003). Social anxiety stems from the extent to which people are concerned with the impressions others form of them (Monfries & Kafer, 1994).
1.4.6 Summary

Anxiety encompasses a strong physiological component with high negative affect, arousal, and perceptions of a lack of control. Vulnerability to anxiety is characterized by beliefs about a perceived inability to predict, control or attain future desired outcomes. In fact, it has been said that a diminished sense of control and unpredictability are at the core of anxious responding. Theories of anxiety – like depression – propose a diathesis-stress interaction, whereby vulnerability to anxiety is manifested when in the presence of an aversive encounter or stressful life event. Individual characteristics such as perfectionism and fear of negative evaluation have particular relevance to anxiety in both personal and social domains.

1.5 Theories of stress and coping

1.5.1 Overview

Although individuals with depression share perceptions of unpredictability and uncontrollability with their anxious counterparts, they evidence fundamentally different action tendencies (or readiness to cope) (Barlow, 1988). Stressed and anxious patients tend to have more in common than depressed and anxious patients (Barlow, 1988). Individuals with stress disorders may share the same action tendencies, vulnerabilities, and experiences as individuals with anxiety, but unlike anxious patients, they tend to maintain an illusion of control (Barlow, 1988). They often have an exaggerated sense of mastery and control, dealing with stressors by increasing their coping and problem-solving capacities, and by working harder, often at the expense of their physical well-being (Barlow, 1988). For stressed patients, the process of anxious apprehension may not occur as it can for anxious patients, because the focus of attention for stressed patients remains external, task-oriented, and achievement-oriented. On the other hand, anxious patients tend to be to self-focused, and consequently focused off the task rather than on the task (Barlow, 1988).

The experience of stress, like anxiety, involves both biological and psychological responses (Cicchetti & Walker, 2001). Stress has been defined as “…the psychological and physiological state of a person responding to demands that stressors in an environment place upon them (i.e., strain) under conditions where those stressors are perceived to be threatening to the self and well-being” (Haslam, O’Brien, Jetten,
Thoits (1995) used the term *stress reaction*, describing it as a state of physiological or emotional arousal that generally results from the perception of an environmental, social or internal demand. According to Cicchetti and Walker (2001), the biological response to stress includes the activation of particular brain circuits and neuroendocrine systems, and the psychological responses to stress range from adaptive coping to depression. Stressful life events, implicated in the diatheses of depression and anxiety, are found to elicit a stress response that involves chronic arousal and impaired function (P.F. Lovibond & S.H. Lovibond, 1995). According to Choenarom et al. (2005), stress commonly precipitates depression, and the effects of stress can sensitize people biologically and psychologically to future depression.

The broad evolution of stress research has emerged from early animal experiments by Seyle (1956) that demonstrated patterned physiological changes in response to noxious stressors. The later development of Holmes and Rahe’s (1967) checklist of major stressful life events (and their associated weights) further developed the study of stress in humans. Since the late 1970’s, stress research has been further refined and elaborated to incorporate factors that moderate or buffer the effects of stress on psychological health. Moderating factors, such as coping resources, coping strategies, and social support, now comprise their own thriving bodies of literature (Folkman & Moskowitz, 2004; Thoits, 1995). The next sections present the cognitive-phenomenological model of stress and coping, discussing the role of stressful life events, coping strategies, coping resources, and perfectionism (as a form of cognitive appraisal).

### 1.5.2 The cognitive-phenomenological model of stress and coping

The cognitive-phenomenological model or transactional model of stress and coping by Lazarus and his colleagues, suggests that the impact of an aversive event on an individual depends on factors relating to the event, to the individual, and to the interaction between the event and the individual (e.g., Cohen & Lazarus, 1979; Folkman, 1984; Folkman, Schaefer, & Lazarus, 1979; Lazarus & Folkman, 1984). Unlike the biological model of stress that assumes that stressors (objective in nature) have the same impact on all people, the psychosocial model of stress accounts for the fact that the same stressors (subjective in nature) impact different individuals in different ways (Sapolsky, 1994; Terry, 1991a). In other words, the biological view does
not reflect individuals’ unique experiences of stress, whereas the psychosocial perspective does (Terry, 1991a).

The cognitive-phenomenological model of stress suggests that it is not the objective characteristics of an event that determines an individual’s response to it (i.e., their level of strain), but rather it is the way in which the person appraises the event that determines their response to it (Folkman, 1984; Terry, 1991a; Terry, 1994). Haslam et al. (2005) stated that the major contribution of Lazarus and Folkman’s work was the conceptualization of stress as a process that is psychologically mediated by the way in which the individual construes the stressor. This involves a two-stage process of cognitive appraisal.

According to Folkman and Lazarus (1980, 1985; Lazarus & Folkman, 1984), when individuals are presented with a potentially stressful situation or event, they engage in primary appraisal, which involves an assessment of the situation’s potential level of threat. Appraisal influences the type of coping individuals use. For example, a person may appraise the situation or event as totally non-threatening, which necessitates no coping response. On the other hand, the person may see the situation or event as threatening, challenging, or involving loss, which does require a coping response. Secondary appraisal involves determining a possible coping response, as a result of a self-assessment as to whether the individual has the necessary resources to cope effectively with the situation. Jerusalem and Schwarzer (1992) stated that there is no fixed order for primary and secondary appraisals - the latter may precede the former, or they may occur concurrently. These authors suggested that the terms might be better referred to as demand appraisal and resource appraisal respectively, in order to better conceptualize the appraisal process - that being, determining the demands of a situation or stressor, and the extent to which an individual’s coping capabilities suffice. Lazarus (2000) summarized that the concept of ‘relational meaning’ is at the core of his approach. He asserted that the ‘person-environment relationship’ is a result of individuals’ appraisals of “…the confluence of the social and physical environment and personal goals, beliefs about self and world, and resources” (p. 665).

1.5.3 Stressful life events

Stressors refer to environmental, social, or internal demands that require individuals to readjust their usual behaviour patterns (Holmes & Rahe, 1967).
According to Thoits (1995) the accumulation of stressors can overtax individuals’ abilities to cope or re-adjust, which can deplete their psychological resources and increase the likelihood of distress. Life events, chronic strains, and daily hassles are the major forms of stressors that have been investigated in the literature (Thoits, 1995). Life events involve acute changes (such as the birth of a first child) and require major readjustments within a short space of time. Chronic strains involve persistent or recurrent demands (such as marital problems), and require readjustments over prolonged periods of time. Daily hassles are ‘mini events’ that occur over the course of a day, and require small behavioural readjustments (such as unexpected visitors).

It has been established that the occurrence of one or more major negative life events in a six to twelve month period, predicts symptoms of psychological distress (see Thoits, 1995). Holmes and Rahe (1967) originally argued that it was the total amount of life change in a given period that would overtax individuals’ physical resources and lead to illness or injury. Brown and Harris (1978) proposed that only negative changes would overtax individuals’ psychological resources, increasing the likelihood of emotional distress. Thoits (1995) stated that later research has frequently shown that negative or threatening events that are also major or highly disruptive events are precipitative of psychological distress and disorder (i.e., anxiety and depression). Haslam et al. (2005) noted that the experience of stress develops when the stressor threatens the self in conjunction with insufficient coping resources.

1.5.4 Coping strategies and coping resources

Coping is one of the most widely studied phenomena in psychology (Somerfield & McCrae, 2000). According to Folkman and Moskowitz (2004), coping is broadly defined as thoughts and behaviours that are used to manage both internal and external demands of situations that individuals appraise as stressful. That is, the coping process is initiated when individuals appraise that important goals have been lost, harmed, or threatened (Folkman & Moskowitz, 2004). Coping has generally been conceptualized in terms of responses that either changes the situation or problem itself, or responses that aim toward dealing with the emotional consequences of the situation or problem. Thoits (1995) referred to these types of coping responses as coping strategies, distinguishing between coping strategies and coping resources. Coping strategies are behavioural and/or cognitive efforts that individuals exert to manage situational
demands that are appraised as taxing or exceeding their abilities to adapt (Lazarus & Folkman, 1984). Coping strategies are used by individuals to reduce the effects of stress (Fleming, Baum, & Singer, 1984). Coping resources are personal and social characteristics that people draw from when dealing with stressors (Pearlin & Schooler 1978). Unlike coping strategies, coping resources are a latent dimension of coping in that they reflect the potential for action rather than action itself. In other words, resources are drawn upon by the individual to mobilize and sustain coping efforts (Yali & Lobel, 2002). Commonly researched coping resources have included sense of mastery or control over life (including self-efficacy), self-esteem, and social support (Thoits, 1995). Coping strategies, and coping resources are explained further in the following sections.

1.5.4.1 Coping strategies

Researchers commonly refer to two types of personal coping strategies or responses – problem-focused coping (active management of the problem) and emotion-focused coping (tension-reducing strategies such as avoidance and ventilation of feelings) (e.g., Lazarus, 1990; Lazarus & Folkman, 1984; Terry, 1991b). Folkman and Moskowitz (2004) referred to third type of coping strategy – meaning-focused coping – which involves cognitive strategies used to manage the meaning of a situation (i.e., drawing on values, beliefs, and goals to modify the meaning of stressful encounter).

Typically, research has explored the two major theoretical functions of coping (problem-focused versus emotion-focused coping) (Folkman & Moskowitz, 2004). It has generally been shown that problem-focused strategies - aimed at actively managing the problem or situation - facilitate adaptation to stress (e.g., Aldwin & Revenson, 1987; Dunkel-Schetter, Folkman, & Lazarus, 1987; Folkman & Moskowitz, 2004; Levy-Shiff, Dimitrovsky, Shulman, & Har-Even, 1998). Conversely, emotion-focused strategies (aimed at dealing with or controlling the emotional consequences of the problem or situation) have been commonly shown to impair adaptation to stress - to the extent that this type of coping fails to confront the situation directly (Folkman & Moskowitz, 2004; Thoits, 1995). However some studies have found that emotion-focused coping decreased levels of distress, or that problem-focused coping reduced future problems but showed little effect on reducing emotional distress (Aldwin & Revenson, 1987; Menaghan, 1982, 1983). According to Pallant (2000), there is growing recognition of
the potential adaptiveness of some emotion-focused strategies, especially in contexts where control of the event is limited (see Folkman & Moskowitz, 2004). For example, in a sample of cancer patients, perceptions of control over the emotional consequences (daily emotional reactions and physical symptoms) of the disease, were more important than control over the disease itself (Thompson, Sobolew-Shubin, Galbraith, Schwankovsky, & Cruzen, 1993).

Folkman and Lazarus (1980, 1985) suggested that both forms of coping are used in stressful encounters. These authors stated that higher levels of problem-focused coping are effective for events that are appraised as controllable (in order to change aspects of the event that might have caused the distress), however higher levels of emotion-focused coping are preferable for events that are appraised as uncontrollable, (in efforts to reduce or regulate distress elicited by the event) (Folkman & Lazarus, 1985). Folkman and Moskowitz (2004), noted that the fit between individuals’ appraisal of controllability and their coping (goodness of fit), as well as their flexibility to modify their coping according to situational demands, are relevant factors to coping effectiveness.

1.5.4.2 Coping resources

Self-esteem and self-efficacy

Individuals’ self-esteem is said to be a personal coping resource that facilitates well-being in the face of stressful encounters (Terry 1991b). Self-esteem has been found to significantly reduce psychological symptoms (especially depression), and to buffer the negative emotional consequences of stressors (Thoits, 1995). Chan (1977) proposed that individuals high in self-esteem are likely to have a past history of coping with stress and as a result, are more likely to cope effectively with further stress at other times. Individuals with low self-esteem can feel caught by an inability to cope with the environment, reacting to difficult circumstances with anxiety and depression (Perlin & Lieberman, as cited in Colletta & Gregg, 1981). Lack of self-esteem has been implicated in a vast number of psychopathologies (Kernis, 2005).

In a similar vein to self-esteem (and of particular interest in the present study) is self-efficacy. Self-efficacy is conceived of as a personal resource or vulnerability factor that is said to operate in the presence of stressful encounters (Bandura, 1986). Perceived self-efficacy refers to the extent to which an individual believes that he or she
is capable of attaining a desired outcome (Walker, 2001). People who trust in their own capabilities to master environmental demands (individuals with high self-efficacy) tend to appraise tasks as challenging rather than threatening (Jerusalem & Schwarzer, 1992). However, individuals who are low in self-efficacy are prone to self-doubts, anxiety, threat appraisals and coping deficits (Jerusalem & Schwarzer, 1992). The terms self-efficacy and self-esteem are used interchangeably, however Bandura himself argued that these phenomena are entirely different. He suggested that people need much more than high self-esteem to be efficacious in given pursuits, and that self-efficacy is particularly important for tasks that require specific knowledge, skills and capabilities (Walker, 2001). Bandura and Locke (2003) stated that individuals who do not hold core beliefs that they have the power to produce desired effects, have little incentive to persevere in the face of difficulties, and are more vulnerable to stress and depression. Self-efficacy is discussed further in the context of control (see Section 1.6.5).

Management of internal states

As described earlier, the experience of loss of control over a situation can result in negative affective states (such as depression and anxiety). Many encounters or situations are associated with a lack of control, which may render the use of problem-focused coping less effective. In a sample of women adjusting to a low-control stressor of a failed IVF attempt, Terry and Hynes (1998) found that coping involving women’s control of their emotional responses, was associated with better adjustment than coping through attempts to manage the problem. Pallant (2000) proposed that in situations that lack the capacity for control, individuals’ capacities for exercising control over their thoughts, feelings, and reactions, may place them in a better position to deal with that situation effectively. Management or control over their internal states may help to minimize the potential levels of distress caused by the event, due to implementing the most adaptive coping resource for that encounter. Folkman and Moskowitz (2004) refer to this as emotion regulation (i.e., the extent to which coping is aimed at ameliorating negative emotions). Management of internal states is discussed further in the context of control in Section 1.6.4.

Social Support

Coping resources can include both personal and social characteristics available to the individual (Yali & Lobel, 2002). According to Lazarus (1990), the intensity of a
stress reaction is determined by an individual’s appraisal as to whether the stressor taxes or exceeds his or her resources. As described earlier, individuals – in their efforts to cope with stressors - use either problem-focused strategies, emotion-focused strategies, or both. Access to social support has been shown to be another coping resource (Terry, 1991b), or type of coping assistance available to individuals in their efforts to cope with potentially stressful encounters (Terry et al., 1995; Thoits, 1986). In fact, Lazarus and Folkman (1984) pointed to an individual’s capacity to engender social supports as a coping skill in its own right. Social support refers to the functions (instrumental, informational, and/or emotional) performed for the individual by significant others (Thoits, 1995).

Choenarom et al. (2005) referred to social support as the structural characteristics of a person’s social network, as well as the perceived availability of resources. A considerable body of research exists demonstrating the beneficial effects of social support in reducing the negative effects of stress (DeLongis & Holtzman, 2005; Haslam et al., 2005). Animal studies such as those conducted by Mineka (see Barlow, 2000), have demonstrated that monkeys receiving social support showed fewer anxiety responses than did monkeys who were reared in isolation. Research evidence generally supports the finding that people with high levels of support do better psychologically than those with less support (see Cohen & Wills, 1985 for a review).

Early research conceptualized social support as a fostering of the recipient’s sense of self-worth and self-esteem during a stressful event (e.g., Pearlin, Menaghan, Liberman, & Mullan, 1981). In line with Lazarus and Folkman’s (1984) cognitive-phenomenological model of stress and coping, social support has been described as a coping process that mediates between a stressful event and subsequent adjustment, via effects on the person’s coping responses (Terry et al., 1995). Terry et al. (1995) proposed that supportive relationships might serve to assist people in finding adaptive coping responses (such as developing strategies to manage the encounter, reappraising the encounter, and/or changing the person’s emotional response to the encounter). Walker (2001) suggested that social support might assist people to gain control over their lives, minimizing the negative effects of feeling ‘out of control’ (See Section 1.6).

Procidano & Heller (1983) described support-seeking as resulting from individuals’ appraisals that they need help in order to adequately deal with a threat, along with a perception that help is available within their support network. House (1981, p. 39) referred to social support as an “interpersonal transaction involving one or
more of the following: (1) emotional concern (liking, love, empathy), (2) instrumental aid (goods and services), (3) information (about the environment), and (4) appraisal (information relevant to self-evaluation)". Other authors have defined social support in similar ways – as comprising supportive transactions or exchanges between people (Terry et al., 1995). Terry et al. (1995) referred to definitions of support that have involved functional or qualitative characteristics of the relationship between people, and definitions that have involved specific structural or quantitative features of people’s social networks (e.g., size of network, frequency of contact). According to Thoits (1995), the perception that emotional support is available seems to be a much stronger influence on psychological well-being than the actual receipt of social support. Thoits (1995) suggested that the most powerful measure of social support is in an individual’s relationship with an intimate spouse or lover – one with whom he or she can confide.

In efforts to understand the mechanisms by which social support modifies the negative consequences of stress, two models have been used – the direct or main effects, and the buffer or moderating models (Choenarom et al., 2005). The main effects model generally supports the finding that social resources lessen the likelihood of symptom development, or increase the likelihood of well-being, irrespective of individuals’ levels of stress (Choenarom et al., 2005; Quittner et al., 1990; Terry et al., 1995). The buffer model suggests that for individuals reporting high levels of stress, social support protects them (or buffers) the negative impact of stress (Choenarom et al., 2005; Cohen & Wills, 1985; Quittner et al., 1990). In other words, this model is interactive – based on the assumption that the effects of social support will be more significant at high levels of stress (in which the demands of the situation exceed an individual’s personal ability to respond) (Terry et al., 1995; Walker, 2001).

Although beyond the scope of this thesis, it is worthy to note that there exists complex and considerable theorizing and inconsistent findings regarding how social support works (DeLongis & Holtzman, 2005; Thoits, 1995). It has been posited that social support (a) provides coping assistance (e.g., by helping to reinterpret the demands of a situation), thereby influencing the use of specific coping strategies (DeLongis & Holtzman, 2005; Thoits, 1995), (b) provides feedback and encouragement to sustain a sense of mastery and competence (Thoits, 1995), (c) provides reassurance that enhances self-esteem or sense of identity (Haslam et al., 2005; Thoits, 1995), or (d) helps to regulate an individual’s emotional state (Thoits, 1995). Social support is discussed
further in the context of the role it might play in providing a sense of control to the recipient (see Section 1.6.6).

Finally, it has been proposed that social supporters are not always positive influences in individuals’ lives, and may in fact be detrimental for recipients’ well-being (Rook, 1992). Although well intentioned, social support attempts may be perceived as unhelpful by recipients. This can be the case especially when there is a mismatch between the needs of the recipient and the support given, or when support involves criticism (DeLongis & Holtzman, 2005; Revenson, 1990). Some authors have suggested that obligatory social ties (e.g., parents, relatives) can produce stressful demands that cancel or outweigh otherwise positive consequences of social support on self-esteem, competence, or identity (Thoits, 1995). The effects of negative social interactions can thereby elicit or reinforce maladaptive coping strategies in the recipient (DeLongis & Holtzman, 2005).

1.5.5 Perfectionism: A factor in the cognitive-phenomenological model of stress and coping

Perfectionistic tendencies have been found to be associated with psychological distress (Shafran & Mansell, 2001), including greater depression, anxiety and stress (Chang, Watkins, & Banks, 2004). Perfectionism denotes a characteristic way of thinking that is likely to affect individuals’ appraisals. Hewitt and Flett (1993) asserted that perfectionistic behaviour can generate stress based on perfectionists’ stringent evaluations, and on their focus on negative aspects of their performances. Perfectionistic behaviour can also increase the aversiveness of the stress response, due to the equating of self-worth on the attainment of perfection (Hewitt & Flett, 1993).

According to O’Connor and O’Connor (2003), and consistent with the cognitive-phenomenological model of stress and coping, some of the vulnerability associated with perfectionism may only be activated in the presence of moderating factors such as stress (Hewitt & Flett, 1993; O’Connor et al., 2002; O’Connor & O’Connor, 2003; Rice & Lapsley, 2001). Central to this model is the notion of coping, and the moderating effects of coping such as problem-focused versus emotion-focused coping, on resulting levels of strain. According to Folkman and Moskowitz (2004), the coping process is sensitive not only to the environment and its demands, but to
personality dispositions that influence the individual’s appraisal of stress and coping resources.

O’Connor and O’Connor (2003) stated that “…there is a dearth of research in the coping and perfectionism literature. To our knowledge, only a few studies have investigated how these variables interact to predict psychological distress (Dunkley & Blankstein, 2000; Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000; Hewitt et al., 1995; Rice & Lapsley, 2001). In a study by Hewitt et al. (1995), with 121 psychiatric inpatients and outpatients, measures of perfectionism, coping and depression were investigated. These authors found that self-oriented perfectionism and emotion-oriented coping (the tendency to focus on negative reactions) were positively associated with depression, and that these variables interacted to predict depression. Perfectionism has relevance to the cognitive-phenomenological model of stress and coping in that it relates to the way in which individuals might appraise themselves. Albert Ellis (2002) referred to perfectionism being dysfunctional to the extent that the attainment of perfectionism (i.e., “I have to be perfect”) is seen as an absolute must, rather than a want or a desire (i.e., “I would like to be perfect”). This unrealistic level of appraisal is inherently self-defeating (Ellis, 2002). Within the self-awareness theories, perfectionism can therefore result in individuals feeling like they have failed when they perceive a discrepancy between their current status and their goals of standards (Carver et al., 1996; Strauman & Higgins, 1993).

1.5.6 Summary

The cognitive-phenomenological model of stress and coping, refers to the central role of appraisal in relation to the manifestation of experienced stress to environmental demands. Stressful life events, chronic strains, and daily hassles can contribute to individuals’ experience of stress, depending on their coping resources (both internal and external) and on their characteristic ways of thinking or expectations. Within the cognitive-phenomenological model of stress and coping, the present study points to perceptions of mastery and control, and characteristic ways of thinking (e.g., perfectionism), as fundamental to the process of appraisal, which in turn, is fundamental to the experience of distress.
1.6 Control

1.6.1 Overview

One of our greatest human fears is losing control (Seligman, 1975; Shapiro & Astin, 1998), and one of our strongest drives is having a sense of control in our lives (e.g., Bandura, 1977, Burger & Cooper, 1979; DeCharms, 1968; Rodin, 1986; Shapiro & Astin, 1998; White, 1959). According to Shapiro and Astin (1998), this means that across various life domains, individuals’ behaviours and cognitions can be understood in terms of their need to gain, maintain and/or reestablish a sense of control. “An impressive number of studies show that a sense of control or mastery both directly reduces psychological disturbance and physical illness and buffers the deleterious effects of stress exposure on physical and mental health” (Thoits, 1995, p. 60). Many researchers have pointed to the importance of control in explaining the link between stressful events and psychological outcomes (see reviews by Skinner, 1995, 1996).

The concept of control plays an important part in the cognitive-phenomenological model of stress, whereby stress can result when a person’s perception that the demands of a situation tax or exceed his or her resources to deal with the situation effectively (Chorpita & Barlow, 1998; Lazarus & Folkman, 1984; Levy-Shiff et al., 1998; Walker, 2001). More specifically, generalized beliefs about control are said to affect primary cognitive appraisals (the appraised threat of a situation), whereas situation-specific appraisals of control are purported to influence secondary appraisal (the assessment of coping resources and strategies) (Folkman, 1984).

Individuals’ perception of loss of control over the demands of a situation has commonly been associated with negative outcomes such as stress, anxiety and depression (Barlow, 2000; Burger, 1989; Chorpita & Barlow, 1998; Rapee et al., 1996; Walker, 2001). Alloy, Kelly, Mineka, & Clements (1990) asserted that when individuals experience uncertainty about their ability to control outcomes (uncertain helplessness) the affective result is one of aroused anxiety. When this lack of control increases (certain helplessness) an individual can experience mixed anxiety-depression. Finally, when an individual’s sense of control diminishes entirely (hopelessness), this loss of control is likely to contribute to a psychological vulnerability associated with a depressive state.
On the other hand, perceptions of control have been linked to a number of positive outcomes. These outcomes have included better health and emotional well-being, achievement, performance, coping, self-esteem, personal adjustment, motivation, and success in a variety of life-domains (see Thompson et al., 1993; Skinner, 1996). Perceived control can enhance an individual’s sense of predictability about outcomes, reduce feelings of helplessness and distress, and can increase the likelihood that the actions a person takes will improve outcomes (Folkman & Lazarus, 1985).

This section reviews the literature on the complex and varied definitions for control, and provides an overview on specific aspects of control and their relevance to distress. The aspects of control covered in this section are desire for control, self-efficacy, control of internal states, and social support, all of which are variables of interest in the present study. Control is also discussed in the context of the postpartum. This section of the thesis provides a foundation upon which the present study’s emphasis on control is based.

### 1.6.2 Defining control

Although there is consensus that control is an important psychological construct in explaining human behaviour, the literature on the topic is complex, and encompasses a large number of constructs to describe the notion of control (Skinner 1996). According to Wallston, Wallston, Smith and Dobbins (1987), control is “the belief that one can determine one’s own internal states and behaviour, influence one’s environment and/or bring about desired outcomes” (p. 5).

Skinner (1996) summarized the control literature by stating that there are two constructs in this diverse literature: One set of constructs is based on the term control and includes “personal control, sense of control, locus of control, cognitive control, agenda control, vicarious control, illusory control, outcome control, primary control, secondary control, action control, decisional control, predictive control, informational control, and proxy control” (p. 549). The other set of constructs, although not using the word control, “…seems closely related, if not identical, to the set that does; these [constructs] include helplessness, efficacy, agency, capacity, mastery, effectance, effectiveness, autonomy, self-determination, competence, contingency, causal attributions, explanatory style, responsibility, blame, probability of success, and outcome expectance” (p. 549).
Some terms appear to be different labels for the same construct, and at times, the same term is used to refer to different constructs (Skinner, 1996). In general terms, control refers to the attainment of desired outcomes (Walker, 2001). Despite the diverse array of terminology and of approaches in operationalizing the concept of control, there still exists a common view that control is an important component in emotional well-being, and perceived loss of control is a significant factor in the development of negative affect (Burger, 1992; Thompson et al., 1993). The most fundamental distinction in the control literature is between actual control (the objective control conditions), and perceived control (an individual’s appraisal about how much control is available) (Skinner, 1996). Classical studies on learned helplessness highlighted that prolonged exposure to objective uncontrollability produces motivational, cognitive, and emotional deficits – even when objective controllability is restored (Seligman, 1975). Other studies have shown that people can have the illusion of control whereby their perceptions of control exist in the face of objective uncontrollability or random situations (Langer, 1975). Perceived control is said to be a more powerful predictor of functioning than actual control, whereby in objectively uncontrollable circumstances, an individual’s conviction that control is available, is sufficient to mobilize action and modulate arousal (Averill, 1973; Burger, 1989). Helplessness deficits on the other hand have been shown to arise as a result of generalized perceptions of expectations of uncontrollability, even when objective control exists (Abramson et al., 1978).

1.6.3 Desire for control

Burger (1992) maintained that irrespective of differing theories and terminology, there is agreement that people are intrinsically motivated to control the events in their environment. People can be defined in terms of a general desire for control, which he conceptualizes as a personality disposition that reflects the extent to which people are motivated to control the events in their lives (Burger & Cooper, 1979). Like other trait variables, people can find themselves somewhere along a continuum ranging from those with an extremely low desire for control to those with an extremely high desire for control (Burger, 1992). Although most people fall somewhere in the middle, people who are at the extreme ends of this continuum are of most interest to clinicians and researchers (Burger, 1992).
Burger (1992) developed a scale called the *Desirability of Control Scale* to measure individuals’ general preference to feel in control of events in their lives (Burger & Cooper, 1979). According to Burger (1995), in comparison to people with a low need for control, those with a high desire for control tend to use more effective coping strategies in life. However, individuals with a high desire for control may also be more susceptible to depression, anxiety and stress when dealing with uncontrollable events (Burger, 1984; Burger & Arkin, 1980).

1.6.4 Self-efficacy (as control)

Authors such as White (1959), deCharms (1968), and Deci (1975) proposed that individuals are motivated by a need to see themselves as competent and masterful, demonstrating to themselves a capability in exercising control over their environments. Bandura (1977, 1986) promoted the concept of self-efficacy, stating that it is the expectation of personal control (or the extent to which people expect that they are capable of performing the behaviour needed to achieve their goals) that underlies the motivation behind many behaviours, rather than the pursuit of mastery per se. Even if individuals believe that outcomes can be influenced by certain behaviours, they will not exert control unless they believe they are capable of applying the requisite responses (Skinner, 1996). In other words, people tap into their beliefs about whether a particular response or competency is within their repertoire to apply to a given situation or encounter. This may also involve assessing the extent to which an individual has access to social supports (Schwarzer & Scholz, 2000) (See Section 1.6.6 on social support as control). Chen, Gully, and Eden (2004) differentiated between *self-efficacy*, being “a relatively malleable, task-specific belief”, and *general self-efficacy*, “which is a relatively stable, trait-like, generalized competence belief” (p. 376).

Self-efficacy has been likened to Rotter’s (1966) concept of locus of control, however Bandura himself maintained that these concepts are quite different (Walker, 2001). Locus of control involves beliefs about action-outcome contingencies (i.e., internal versus external attributions), whereas self-efficacy is about an assessment of the personal skills available to an individual that are required to achieve a successful outcome (Walker, 2001). According to Walker (2001), Bandura’s self-efficacy theory was generalizeable to Seligman’s (1975) theory of learned helplessness. People give up trying because they perceive desired outcomes to be unattainable, or because they don’t
have the self-efficacy to believe they could achieve a potentially attainable outcome. This lack of self-efficacy is a feature of depression, anxiety and stress, and is central to cognitive-behavioural treatments of these states (see Bandura, 1977; Beck, 1976).

1.6.5 Control of internal states

The stress and coping literature presented two types of coping that are said to come into play in potentially stressful situations or encounters - problem-focused coping (control over the problem itself) and emotion-focused coping (control over the emotional consequences of the problem). Problem-focused coping has generally been portrayed in the literature as the more adaptive coping response (see review by Thoits, 1995). However, it has been proposed that in many situations or stressful encounters, where control over the event is not feasible, people may be able to compensate for this lack of external control by exercising control in other arenas (Pallant, 2000). In other words, when external control is not possible, or is limited, emotion-oriented coping may be more effective.

Aligned to the literature on control and using different terminology to the stress and coping paradigm, Thompson and her colleagues (Thompson, Nanni & Levine, 1994; Thompson et al., 1993) referred to two aspects of perceived control: (a) perceptions of control over the event or situation itself, and (b) perceptions of control over the practical, psychological and physical consequences of the event. Similarly, Rothbaum, Weisz, and Synder (1982) postulated that in order for people to satisfy their needs to maintain a sense of control, they can either act directly to change the environment (primary control) or use cognitive strategies to accept the situation as it is (secondary control). These authors maintained that when people perceive *uncontrollability*, abandoning their motivation for control may be an adaptive response to the situation. Rothbaum et al. (1982) argued that primary and secondary control work in a complementary way whereby both processes are adaptive depending on the situation. Good adjustment involves the capacity to be flexible in one’s use of either primary or secondary control, and to recognize when each process might be appropriate (Rothbaum et al., 1982).

In some contexts, perceived control over the emotional consequences of an encounter may be more relevant to adjustment than control over the event itself (Pallant, 2000). Researchers have pointed to the importance of individuals’ perceived control of
their internal states such as their thoughts, emotions and physical reactions (Pallant, 2000; Rapee et al., 1996; Thompson et al., 1994; Thompson et al., 1993). In a study by Thompson et al. (1993), looking at patients’ psychological adjustment to cancer, it was more important for participants to believe they had the capacity to control their daily emotional reactions and physical symptoms than to have control over the course of the disease. Both external control (i.e., the capacity to control external factors) and internal control (the capacity to control one’s internal states) can play an important part in determining how an individual appraises an event or situation, and how he or she chooses to respond. According to Pallant (2000), in the face of uncontrollability, an individual who has the capacity to control his or her internal states (i.e., to limit the emotional impact of the situation), is likely to appraise and respond to the situation more effectively than an individual who does not. Individuals who perceive that they have little control over their internal states, are likely to appraise events as more threatening, be less likely to deal well with the emotional impact, and be less effective in their response to the event.

1.6.6 Social support (as control)

According to Walker (2001), the actions of others (through helping, sharing of information, or giving of advice) can contribute to an individual attaining a sense of control. Social support serves a number of control functions. It can remove or replace personal control, and it can enhance or increase personal control. Instrumental social support can involve direct control on behalf of, or over an individual, which can either enhance or usurp the personal control of the individual. Social support may therefore be helpful or deleterious to individuals’ personal control depending on the circumstances or context. Likewise, informational support can facilitate personal control, or it can serve to hold power over an individual thereby usurping his or her personal control. Emotional support is usually said to enhance individuals’ personal control, and as a result, enhance their self-efficacy and self-esteem. When positive, social support might assist people to gain control over their lives, and minimize the negative effects of feeling out of control (Walker, 2001).
1.6.7 Control and the postpartum

It has been reported that people prefer predictability over unpredictability, whereby the inability to predict events can result in distress (Burger, 1989). People are innately motivated to engage in successful interactions with their environment – interactions that involve experiencing themselves as efficacious by eliciting desired outcomes, and preventing undesired ones. According to Skinner (1996), this fundamental human drive has been conceptualized as *effectance motivation, mastery motivation*, or the *need for competence*. People experience feelings of efficacy that result from having control over their environments, and the cumulative effect of such experiences (together with their appraisals of events) gives rise to people’s overall *perceptions of control*. When an individual’s basic need for control is threatened or a loss of control occurs, this threat or loss can be a source of distress. When loss of control becomes prolonged or chronic, and self-efficacy is threatened, people become more vulnerable to negative affective states such as anxiety and depression.

As discussed in Section 1.1, new mothers commonly report experiencing unpredictability, a loss of control and order over their routines, and feelings of being ‘out of control’ in the postpartum (Lamble & Morris, 1999; Milgrom et al., 1999; Pope, 2000; Sharp & Bramwell, 2004). In this new role - which involves little preparation, if any – women are expected to adjust to a new set of responsibilities and demands, which can often involve little predictability. The demands and tasks involved in caring for an infant often involve different skills and abilities to those previously used by women in their effective interactions in other contexts (e.g., in the workplace). Terry (1991b) referred to a study by Turner and Avison (1985) that showed that in relation to coping with new parenthood, personal control distinguished mothers who coped well from those who coped poorly.

1.6.8 Summary

A sense of control or mastery has been shown to directly reduce psychological distress, as well as to buffer the impact of stressful events on subsequent deleterious psychological outcomes. Diminished or lost control has been implicated in stress, anxiety and depression, whereas perceptions of control have been linked to emotional well-being. Control is a complex concept that has seen a multitude of
conceptualizations and labels. Nevertheless, the motivation for control, and perceptions of control are considered to be fundamental components of the human psyche. Control (or lack of it) has particular implications for the postpartum period, given the potential for this major life event to compromise, or threaten women’s perceptions and experiences of control.

1.7 A Review of the Postnatal Depression Literature: Vulnerability Factors and Sources of Stress

1.7.1 Overview

Section 1.2 provided an overview on the spectrum of psychological distress following childbirth, referring to postnatal depression as the most prevalent mood disorder associated with childbirth. Given its prevalence, postnatal depression has therefore been the most prolifically investigated psychological outcome in relation to women’s postnatal adjustment. An argument was put forward in Section 1.2 regarding the importance of extending this classification to include anxiety and stress in order to fully capture the distress that may occur in women’s adjustment to this major life event. However, because postnatal depression comprising the large part of the postnatal literature, it is the depression literature upon which this section relies. In line with the cognitive theories of depression and anxiety, and the cognitive-phenomenological model of stress and coping, the next section is divided into vulnerability factors (i.e., risk factors) and sources of stress that have been found to be associated with postnatal depression.

1.7.2 Vulnerability to postnatal depression

The cognitive vulnerability-stress models of depression have provided the most comprehensive account for why some women suffer from postnatal depression (Honey, Morgan, & Bennett, 2003). These models incorporate the notion of a diathesis-stress interaction whereby vulnerability is triggered by events that are appraised as negative or stressful. The cognitive-phenomenological model of stress and coping points to appraisal as playing a central role in accounting for why women experience similar life events in different ways. The following sections begin by reviewing the cognitive factors that have been found to create vulnerability in postpartum women, followed by
other reported vulnerability factors (i.e., antenatal factors, obstetric factors, and demographic factors).

1.7.2.1 Cognitive factors

According to Grazioli and Terry (2000), postnatal depression has been associated with many psychological and social factors, however, many of these predictors have been examined without a clear theoretical basis. The proposition that pre-existing cognitive factors play an important role in women’s propensity to develop postnatal depression is derived from a strong theoretical foundation (Grazioli & Terry, 2000). In terms of cognitive vulnerability factors, it has been suggested that negative cognitive style might account for why some women are vulnerable to developing postnatal depression (Whitton, Appleby and Warner, 1996). In a sample of eighty-five primiparous women, pre-existing (prior to birth) attributional style predicted women’s level of postnatal depression (Cutrona, 1983). Similarly, O’Hara, Rehm, and Campbell (1982) found that attributional style was predictive of postnatal depressive symptoms, although other researchers have found non-significant results (e.g., Manley, McMahon, Bradley, & Davidson, 1982; Whiffen, 1988).

Postnatal depression has been associated with negative cognitive style, including maladaptive beliefs (e.g., women’s beliefs that they have little or no control over their lives) (Hayworth et al., 1980), and cognitive distortions (e.g., catastrophizing, over-generalization, all or nothing thinking) (see Beck et al., 1979; Pope, 2000). No support has been found for a unique personality style that predisposes women to postnatal depression (Boyce, 1994; Boyce & Mason, 1996). However, depression-prone risk factors linked to depression have included obsessionality, dependency, and pessimism (Boyce & Mason, 1996; Boyce, Hickie, & Parker, 1991; Kennerley & Gath, 1989), anxious attachment style (McMahon, Barnett, Kowalenko, & Tennant, 2005), low self-esteem (Fontaine & Jones, 1997), being shy/self-conscious (Johnstone, Boyce, Hickey, Morris-Yates, & Harris, 2001), and a tendency towards self-criticism (Priel & Besser, 1999). In a prospective study by Boyce et al. (1991) that investigated predictors of postnatal depression in a sample of 149 women, different risk factors were important at different postnatal times, with personality factors being most relevant in later postnatal adjustment. Boyce et al. (1991) found that at six months postpartum, the greatest risk factor for developing postnatal depression was high interpersonal sensitivity.
Interpersonal sensitivity involves interpersonal awareness, need for approval, separation anxiety, timidity and a fragile inner self (see IPSM, Boyce and Parker, 1989, as cited in Boyce et al., 1991). Boyce (2003) stated that a vulnerable personality style - which includes a lack of assertiveness and worrying about interpersonal relationship - is a risk factor for the development of postnatal depression, due to poor coping mechanisms that are associated with high levels of anxiety. Boyce and Hickey (2005) argued that women with a vulnerable or non-resilient personality style find the demands of looking after a new baby overwhelming, which may be what leads to postnatal depression. Other authors have linked neuroticism to postnatal depression (Marks, Wieck, Checkley & Kumar, 1992; Pitt, 1968; Watson et al., 1984). However, the association between neuroticism and postnatal depression has not always been replicated (Areias, Kumar, Calheiros, Matos, & Figueiredo, 1996; Kumar & Robson, 1984). Milgrom et al. (1999) suggested that common features of women with postnatal depression include perfectionism and a strong need for order and control. To the present author’s knowledge, no studies have investigated these measures specifically in relation to postnatal depression.

1.7.2.2 Antenatal factors

Antenatal depression has been found to be one of the most significant predictors of postnatal depression (see Beck, 1996; Da Costa, Larouch, Dritsa, & Brender, 2000; Dimitrovsky et al., 1987; Gotlib et al., 1989; O’Hara & Swain, 1996; Watson et al., 1984), and postnatal mood (Elliot et al., 1983; Matthey, Barnett, Ungerer, & Waters, 2000). Antenatal anxiety has also been associated with anxious symptomatology in the postpartum (Brouwers et al., 2001a).

1.7.2.3 Demographic factors

Maternal age has been related to postnatal depression, both in being younger (adolescent mothers) and older (over 30 years of age) (Pope, 2000). Boyce and Hickey (2005) found a significantly increased risk for postnatal depression in women 16 years or younger. Factors linked with younger maternal age may be unplanned pregnancy, limited support and illicit drug use, yet little research has been done to investigate these factors (Barnet, Duggan, Wilson, & Joffè, 1995). Older maternal age of primiparous
women has been shown to be a significant predictor of postnatal depression, possibly related to difficulties adjusting to motherhood, unfulfilled expectations, limited coping strategies or increased maternal anxiety with the first child (Pope, 2000). A large Australian study (Astbury, Brown, Lumley, & Small 1994) confirmed that primiparous women over 35 years of age showed a higher likelihood of developing postnatal depression. However, in Pope’s (2000) review of the literature, maternal age is conceptualized as a possible risk factor for postnatal depression, as age may be related to other factors such as lifestyle, parity or affective history. According to Terry et al. (1996), in the majority of cases, demographic variables are unrelated to postnatal depression.

Level of education has revealed differing results in relation to postnatal depression. Wickberg and Hwang (1997) found no association between women’s educational backgrounds and postnatal depression. Conversely, others have found a significant association, with lower level of education being linked to postnatal depression (Bernazzani, Saucier, & Borgeat, 1997; Tammentie, Tarrkka, Astedt-Kurki, & Paavilainen, 2002)

### 1.7.3 Sources of Stress in the postpartum

As depicted in Sections 1.3, 1.4, and 1.5, a central assumption in the cognitive vulnerability-stress models is that vulnerability is manifested in the presence of stressful encounters or negative life events (Monroe & Simons, 1991). The birth of a woman’s first child has been posited as being a stressful life event in itself. However, other sources of stress that occur in the postpartum, can contribute to women’s overall experiences of postnatal distress. Other sources of stress can include cognitive factors that have specific relevance to the postpartum (i.e., women’s cognitions and appraisals about her birth, herself as a mother, her infant, her relationship, and her supports), as well as additional stressful life events, and lack of support (both from women’s partners and from other family members). The following section discusses sources of stress in the postpartum that have been found to be associated with postnatal depression (i.e., cognitive factors, stressful life events, birth-related factors, infant factors, relationship factors, and social support).
1.7.3.1 Cognitive factors

Postnatal depression has been linked to negative thought patterns including poor self-efficacy, and poor self-perception in relation to motherhood (Cutrona & Troutman, 1986, O’Hara et al., 1982; Warner, Appleby, Whitton, & Faragher, 1996); maladaptive coping strategies (Gotlib, Whiffen, Wallace, & Mount, 1991; Terry et al., 1996) and negative appraisals in relation to an anticipated childcare stressor (Honey, Morgan et al., 2003).

Women who have high self-esteem scores have been found to have lower depression scores (Fontaine & Jones, 1997), and to adapt better to motherhood than those mothers with low self-esteem scores (Colletta & Gregg, 1981). Self-esteem is related to one’s general confidence in one’s ability to elicit a desired outcome (Pope, 2000). According to Johnston & Mash (1989), “parenting self-esteem encompasses both perceived self-efficacy as a parent and the satisfaction derived from parenting” (p. 167). Self-efficacy beliefs concern the judgement one makes about one’s ability to perform competently and effectively in a given task or setting (Teti & Gelfand, 1991). Maternal self-efficacy is specifically related to women’s perceived performance in their roles as mothers (Teti & Gelfand, 1991). Maternal feelings of competence are likely to be sustained when women have experiences of being able to manage and soothe their infants. On the other hand, maternal feelings of competence are likely to wane when mothers experience their infants as chronically fussy, unpredictable and difficult (see Cutrona & Troutman, 1986). According to Bandura (1982), low perceived self-efficacy can result in poor persistence, self-blaming attributions and depression. Research has shown that poor levels of maternal self-efficacy are correlated with (a) maternal depression (Cutrona & Troutman, 1986; Gross & Rocissano, 1988); (b) support of family and friends received by the mother (Lederman & Lederman, 1987); (c) perception of difficult child temperament (Cutrona & Troutman, 1986); (d) the quality of the marital relationship (Frank, Jacobson, Hole, Justkowski, & Huyck, 1986); and (e) observed maternal competence (Teti & Gelfand, 1991).
1.7.3.2 Stressful life events

According to Thoits (1986), situations are experienced as stressful when people experience undesirable life demands that disrupt their ability to engage in everyday activities. For new mothers, childbirth and the major life changes that follow can be significant stressors in themselves (Robertson et al., 2004). Additional life stresses occurring before and after the birth can have a cumulative effect on the well-being of mothers, and can contribute to the development of postnatal depression (Cutrona, 1982; Hopkins, Marcus & Campbell, 1984), especially for women who have several stressors and limited supports (Pope, 2000; SIGN, 2002). The relationship between stressful life events and postnatal depression is well-established (Boyce & Hickey, 2005; Robertson et al., 2004). Stressful life events linked to postnatal depression include finances, unemployment, housing, and bereavement, relationship breakdown or divorce, and moving home (Pope, 2000; Robertson et al., 2004). Postnatal depression has consistently been associated with infant-related behavioural or health problems (Hopkins, Campbell, & Marcus, 1987; Whiffen, 1990; Whiffen & Gotlib, 1989) and stress related to childcare (Cutrona, 1983; O’Hara, 1986; O’Hara et al., 1984). Several authors have concluded that the impact of a potentially stressful life event/s on a woman’s well-being is related to the way in which the woman perceives and appraises the event/s (Lane et al., 1997; O’Hara, 1995; 1989; Zelkowitz & Millet, 1995). O’Hara, Schlechete, Lewis, & Varner (1991) reiterated that potentially stressful life events predict postnatal depression when they interact with women’s vulnerability to depression.

1.7.3.3 Birth-related factors

Research evidence regarding the impact of birth experiences and obstetric complications on postnatal depression has been inconsistent (Pope, 2000). Some studies have found no association between obstetric factors (such as operative delivery) and postnatal depression (Cox, Connor, & Kendel, 1982; Hannah, Adams, Lee, Glover, & Sandler, 1992; O’Hara et al., 1982; O’Hara, Neunaber, & Zekoski, 1984; Patel, Murphy, & Peters, 2005; Warner et al., 1996; Whiffen, 1988). Whereas other studies have shown obstetric complications and delivery stress to be significantly predictive of postnatal depression (Cutrona, 1983; Dennerstein, Lehert, & Riphagen, 1989; Kumar &
Robson, 1984; O’Hara et al., 1984; Pfost, Stevens, & Lum, 1990). O’Hara et al. (1982) found that perceived delivery stress in combination with negative cognitive style was a significant predictive factor in postnatal depression. Obstetric factors have also been found to be risk factors for postnatal depression in contexts where women have a vulnerability to psychological disorders (Murray & Cartwright, 1993: O’Hara et al., 1991), or where women have little partner support (Campbell, Cohn, Flanagan, Popper, & Meyers, 1992). The results of a study by Wijma, Ryding and Wijma (2002) revealed that emergency caesarian, in combination with antenatal fear of childbirth predicted mental distress in the immediate postpartum.

Some authors have posited that the indicators for a ‘successful’ childbirth tend to focus on physical aspects (such as mode of delivery), but that the psychological aspects of childbirth play a significant part in women’s experience of childbirth, and in their postnatal adjustment (Baker, Choi, Henshaw, Baker, & Tree, 2005; Green, 1999; Green & Baston, 2003). Increased likelihood of postnatal depression has been linked to women’s negative birth experiences (Brown & Lumley, 1994). A central factor in women’s experience of birth, and their resulting satisfaction is that of perceived control (Baker et al., 2005; Green, 1999; Green & Baston, 2003). Feelings of being in control in labour have been significantly linked to reduced likelihood of postnatal depression (Oakley, Rajan, & Grant, 1990). According to Green, Coupland, and Kitzinger (1990) women’s feelings of being in control during labour, affected both their satisfaction with their birth and their subsequent emotional well-being. For women who experience birth as a trauma, the birth experience can have a negative impact on their later postnatal adjustment, and can in some cases, result in Post-Traumatic Stress Disorder (Soet, Brack, & Dilorio, 2003; White, et al. 2006). Wenzel et al. (2005) reported that a sense of uncontrollability during birth was a common experience of women who experienced subsequent traumatic stress symptoms. According to Baker et al. (2005), in many studies, it was only when psychological factors were excluded from analyses did the impact of medical interventions become evident.

1.7.3.4 Infant factors

Consistent research findings support an association between postnatal depression and problems with infant health, temperament and behaviour (Cutrona & Troutman, 1986; Mayberry & Affonso, 1993; Murray, Stanley, Hooper, King, & Fiori-
Cowley, 1996; O’Hara et al., 1984; Whiffen, 1988). However, it is unclear as to whether infants of depressed mothers are objectively more difficult or are perceived as more difficult by their depressed mothers in comparison to infants of non-depressed mothers (Milgrom et al., 1999). It has been postulated that in the context of having a “difficult” child (and insufficient social supports) women who perceive themselves as ineffective mothers are more likely to become depressed (Pope, 2000). Infant temperament has been reported to have both a direct effect on postnatal depression as well as an effect on postnatal depression via women’s parenting self-efficacy (Campbell et al., 1992; Cutrona & Troutman, 1986; Hopkins et al., 1987). According to Fisher, Rowe, and Feekery (2004) improvements in infant behaviour (i.e., reduction in crying and fussing, and enhanced sleep) are associated with improvements in maternal mood.

1.7.3.5 Relationship Factors

There is a considerable body of literature that supports the association between the poor quality of women’s marital relationships and postnatal depression, whether a poor quality relationship precedes, or follows the onset of depression (Pope, 2000; SIGN, 2002). A study by Boyce et al. (1991), that in part investigated relationship factors, showed that at one month following childbirth, the greatest risk for postnatal depression in women was a spouse rated as low in care, and high in control. At three months postpartum, the greatest risk factors for women were the same spousal variables as well as women reporting their own fathers to be highly controlling. More recent research has shown that a poor-quality relationship was associated with postnatal depression, and even more so when the relationship was perceived as having deteriorated after childbirth (Boyce & Hickey, 2005). Mauthner (1998) summarized that postnatal depression has been correlated with marital problems; marital instability, marital disharmony, low or poor marital adjustment, a poor marital relationship, deterioration in the marital relationship, a dysfunctional marital relationship and dissatisfaction with the marital relationship. Conversely, a positive association between relationship satisfaction and postpartum adjustment has been found (Atkinson & Rickel, 1984; Merchant, Affonso & Mayberry, 1995; Schweitzer, Logan, & Strassberg, 1992; Williams & Carmichael, 1985). It has been said that a stable, supportive marital relationship may play a role in protecting women from developing postnatal depression (Pope, 2000).
1.7.3.6 Social support

Several studies show an association between inadequate social support and postnatal depression (see Pope, 2000; SIGN, 2002). In particular, lack of partner support (unavailability or unreliability with childcare) and lack of support from women’s parents, are associated with postnatal depression (Campbell et al., 1992; Cutrona & Troutman, 1986; O’Hara, 1986; O’Hara, Rehm, & Campbell, 1983; Stemp, Turner, & Noh, 1986; Watson et al., 1984). Webster et al. (2000) found a strong association between low levels of support and depression, whereby women who had low levels of support were twice as likely as well-supported women to score above 12 on the Edinburgh Postnatal Depression Scale. In particular, Webster et al. (2003) found two items (on the Maternity Social Support Scale) to be significantly associated with postnatal depression: Low family support, and conflict with partner. Boyce & Hickey (2005) also found a relationship between unsatisfactory social support and postnatal depression.

According to Pope (2000), further investigation is required to determine the extent to which good levels of social support might mitigate against the development or severity of postnatal depression (see Cutrona & Troutman, 1986; Pope, 2000). Milgrom et al. (1999) suggested that the quality and amount of support available to new mothers may moderate the effect of life stress variables. Cutrona & Troutman (1986) showed the impact of good social support on postnatal depression to be mediated via the cognitive variable of parenting self-efficacy. Women who reported having good social supports pre-natally had higher levels of self-confidence in their roles as mothers and less depression. In general, emotional support from partners, and practical help with housework and childcare, have been proposed to help decrease postnatal depression (Pope, 2000). However, Norwood (1996) suggested that social support is beneficial only up to a certain point, and can also serve as a source of stress, (e.g., fostering dependency). Similarly, the general social support literature has asserted that social supporters can be a negative influence on supportees, whereby their so-called ‘support’ can be detrimental to the well-being of the supportee (Rook, 1992).
1.7.4 Summary

Several psychological and social factors have been implicated in the development of postnatal depression in women. The cognitive vulnerability-stress model for postnatal depression has provided the most comprehensive account for why some women experience new motherhood as a negative or stressful event, and why some women do not (Honey, Morgan et al., 2003). This model highlights the potential impact of cognitive vulnerability factors, in combination with sources of stress that may serve to trigger underlying or antecedent vulnerability, which together may manifest in postnatal distress.

1.8 The present study

1.8.1 Rationale for the present study

Grazioli and Terry (2000), pointed to the importance of using a strong theoretical basis with a cognitive framework, for conceptualizing and exploring the multiple factors associated with postnatal depression. According to Da Costa et al. (2000), there have been only a few studies (e.g., Grazioli & Terry, 2000; Terry et al., 1996) that have examined predictors for postnatal depression in the context of a theoretical framework such as that of the stress and coping paradigm. The present study was based on the cognitive vulnerability-stress theories of depression and anxiety, and the cognitive-phenomenological model of stress and coping. In drawing from these theories to form its theoretical basis, the present study was based on the following underlying assumptions:

1. There is more to postnatal distress than depression. Anxiety and stress are important negative affective states that can adversely affect postnatal women
2. Cognitive vulnerability, which includes expectations and appraisal, is a central construct in explaining depression, anxiety and stress
3. Cognitive vulnerability can be triggered by stressful life events resulting in negative affective states of depression, anxiety and stress
4. New motherhood in and of itself constitutes a stressful life event
The impact of stressful life events on individuals depends on factors relating to the event, to the individual, and to the interaction between the event and the individual.

Perceived control is an important component in explaining depression, anxiety and stress.

Coping involves personal resources or vulnerability factors that operate in the presence of stressful life events, and coping involves aspects of control.

Dysfunctional attitudes, or characteristic ways of thinking contain unrealistic standards upon which people appraise themselves.

When individuals perceive discrepancies between their current status and their goals and standards, this can lead to distress.

The present study, posited that new motherhood is a potentially stressful life event which can trigger underlying vulnerability in some women, especially in the presence of other life stressors, and when coping resources are lacking. It was broadly predicted that when triggered, cognitive vulnerability might manifest as postnatal distress in some women. Of primary interest was the investigation of a number of proposed measures of control, and individual characteristics, and whether these variables differentiated women who were postnatally distressed from women who were not.

1.8.2 A cognitive vulnerability-stress model for postnatal distress

A cognitive vulnerability-stress or diathesis-stress model is proposed in the present study, based on an adaptation of the biopsychosocial model for postnatal depression by Milgrom et al. (1999). Of interest in the present study are the parts of the model that encompass vulnerability factors (or antecedent factors), sources of stress (or precipitating factors), and outcome measures (that extend the classification of postnatal distress beyond that of depression). Although this model is not a complete depiction of the multitude of factors found to be associated with postnatal depression, it is valuable for both research and clinical practice (Milgrom et al., 1999), as it provides a useful theoretical framework for the factors tested in the present study. It was proposed that the cognitive vulnerability-stress model for postnatal distress would provide a conceptual framework for the examination of cognitive factors relating to postnatal
distress. Figure 1 depicts the broad conceptual framework within which the variables in the present study were examined.

Figure 1. Conceptual framework for the cognitive vulnerability-stress model.

In the box on the right of the model are the components of postnatal distress, as conceptualized for the purpose of measuring a broader spectrum of distress than depression alone. The box in the center includes sources of stress or precipitating factors that may trigger postnatal distress in vulnerable women. In the box on the left of the model are vulnerability factors that reflect the notion, and the findings that some women are more vulnerable to developing postnatal distress than others. Taken together, the model reflects that vulnerability is triggered by the presence of stress, which can result in distress. Implicit in the model is the importance of cognitive appraisal - the extent to which different women appraise and respond to events - as derived by their characteristic ways of thinking, and their coping resources.

The model is referred to throughout the next sections, along with a visual depiction of each section of the model, which progressively builds into the entire theoretical model being presented in Section 1.8.5.3. Section 1.8.3 refers to the postnatal outcome measures that constitute the present study’s conceptualization of postnatal distress. An argument for a broader assessment of postnatal distress (over and above that of depression) is presented. Section 1.8.4 refers to the sources of stress proposed to be associated with postnatal distress, and the associated hypotheses. Section 1.8.5 refers to the vulnerability factors proposed to be associated with postnatal distress, and associated hypotheses.

1.8.3 Postnatal distress: Outcome measures

The present study proposed that in order to fully diagnose and treat women in the postpartum, an extended classification over and above that of postnatal depression needs to be considered. To this end, the present study used the Edinburgh Postnatal
Depression Scale (EPDS: Cox, Holden, & Sagovsky, 1987) in combination with the Depression Anxiety Stress Scales (DASS: S.H. Lovibond & P.F. Lovibond, 1995) to measure not only depression, but anxiety and stress as well. In addition, measures of maternal satisfaction and life satisfaction were used to assess women’s levels of postnatal well-being.

Although a major argument of the present study is to expand the criteria for assessing postnatal distress, the majority of studies investigating populations of postnatal women have used postnatal depression as the primary outcome measure. As a result of this focus, the postnatal depression literature was relied upon once again for providing a background regarding the assessment tools commonly used in postnatal populations. This literature also provided a basis for the rationale regarding the present study’s use of an expanded measure of distress over and above depression alone. The measurement of anxious-depression is also discussed due to the importance for detecting this sub-group of women (see Section 1.2.4.1).

1.8.3.1 Measurement of postnatal depression

Background

Several depression rating-scales have been used to assess postnatal depression, including the Beck Depression Inventory (BDI), the Pitt, The Hamilton Depression Rating Scale, the Zung Self-Rating Depression Scale, and the General Health Questionnaire (GHQ) (Boyce, Stubbs, & Todd, 1993). However, the validity of these scales has been questioned in terms of their use in the postpartum. This has occurred because some items (such as lack of sleep, listlessness, weight loss, and poor concentration) are viewed by many women as part of the normal realm of being a nursing mother, rather than being due to depression (Boyce et al., 1993; Milgrom et al., 1999). Scales that include such symptoms can artificially inflate women’s scores on depression increasing the risk of false positives.

The Edinburgh Postnatal Depression Scale (EPDS)

As a result of the potential confounding factors of some depression scales for the postpartum, the Edinburgh Postnatal Depression Scale (EPDS) was developed by Cox, Holden, & Sagovsky (1987). The EPDS has been validated in numerous studies (See Pope, 2000 for a review), and has proven to be a simple, user-friendly, and reliable
instrument for screening women for postnatal depression (Boyce et al., 1993; Cox et al., 1987; Holden, 1994). The EPDS has been reported to accurately detect 86-95% of women with postnatal depression (O’Hara, 1994), and has been used extensively in both clinical practice (Cox, 1991; Cox, Chapman, Murray, & Jones, 1996; Glaze & Cox, 1991; Gerrard et al., 1993; Matthey & Barnett, 1996; Schaper, Rooney, Kay, & Silva, 1994; Webster, Thompson, Mitchell, & Werry, 1994; Wickberg & Hwang, 1997) and in research (Areias et al., 1996; Lee et al., 1998; Yoshida et al., 1997; Zelkowitz & Milet, 1995).

The EPDS is a screening tool that serves as a useful indicator of those women who may be suffering from postnatal depression (Cox et al., 1987; Holden, 1994). Most studies use an EPDS score of over 12, which suggests a likelihood of depression (Pope, 2000; SIGN, 2002). However, some researchers recommend a lower cut-off of over 9 to more sensitively detect women with depressive symptomatology (see Dennis 2004; Lundh & Gyllang, 1993). Irrespective of the cut-off used, a positive identification on the EPDS flags the need for further assessment. Because the EPDS does not discriminate levels of depression, additional information is required to meet diagnostic criteria for depression. Several studies have used the Beck Depression Inventory (BDI) - in conjunction with the EPDS - for the purposes of assessing the severity of depression in postnatal women (see Pope, 2000 for a review). Although it has been demonstrated that the BDI is a psychometrically robust instrument, its use in the postpartum calls for careful interpretation (Affonso, Horowitz, & Mayberry, 2000). It has been noted that somatic symptoms that reflect the normal aspects of postnatal life (e.g., lack of sleep, tiredness, and weight change) may inflate depression scores on the BDI (Affonso et al., 2000; Milgrom et al., 1999), and that episodes of mild depression may not be detected by the BDI at the subclinical level in postnatal women (Affonso et al., 2000).

1.8.3.2 The Depression Anxiety Stress Scales (DASS)

Empirical analyses in both non-clinical and clinical samples (from the general population), have shown conventionally regarded core symptoms of depression – such as sleep disturbance, changes in appetite, weight loss, and loss of libido – are weak markers for the syndrome of depression (P.F. Lovibond & S.H. Lovibond, 1995). The Depression, Anxiety and Stress Scales (DASS), were developed out of extensive psychometric evaluations to maximally discriminate between the core symptoms of
depression and anxiety (P.F. Lovibond & S.H. Lovibond, 1995; S.H. Lovibond & P.F. Lovibond, 1995). As a result, symptoms that were found to poorly discriminate between these two constructs were excluded from the DASS Depression scale during scale development (S.H. Lovibond & P.F. Lovibond, 1995). Interestingly, the items that have been identified as potential confounders within the BDI for use in the postpartum, were rejected during scale development of the DASS. These items included disturbance of sleep, appetite/weight loss, tiredness, lack of energy, and poor concentration (S.H. Lovibond & P.F. Lovibond, 1995). Scale development of the DASS, also yielded a third group of items that characterized a chronic non-specific arousal that the authors termed stress (Crawford & Henry, 2003; S.H. Lovibond & P.F. Lovibond, 1995). The DASS has been found to reliably distinguish between the symptoms of depression (dysphoric mood), anxiety (physiological arousal), and stress (psychological tension and agitation) (Antony, Bieling, Cox, Enns, & Swinson, 1998), in both non-clinical (Antony et al., 1998; Crawford & Henry, 2003; S.H. Lovibond & P.F. Lovibond, 1995) and clinical samples (Antony et al., 1998; Brown, Chorpita, Korotitsch, & Barlow, 1997). The authors of the DASS recommend that for diagnostic purposes, the DASS be used in combination with other clinical information.

Using the DASS to broaden the criteria for postnatal distress

The postpartum period is a time when the accurate detection and treatment of psychological distress is paramount. With the potential for untreated postnatal distress to adversely affect the ongoing well-being of the mother and her infant, it seems pertinent to distinguish women’s negative emotional states, in order to appropriately treat their unique symptoms. New motherhood has been defined as a stressful life event which can result in distress for women, yet depression has ‘trumped’ in terms of representing the diagnostic benchmark for postnatal maladjustment (Matthey et al., 2003). It has been suggested that stressful life events have the potential to precipitate episodes of anxiety and depression, and to “lead to a characteristic stress response involving chronic arousal and impaired function” (P.F. Lovibond & S.H. Lovibond, 1995, p. 335). It has also been reported that patients with sub-threshold depression and anxiety are at a greater risk for developing a threshold disorder following a psychosocial stressor (Helmchen & Linden, 2000), such as new motherhood. This points to the importance of detecting mild symptoms that may identify women at risk.
With new motherhood holding the potential to be a stressful life event (Terry, 1991a; Terry 1991b; Terry et al., 1996), and to elicit various cognitive-affective symptoms (Pope, 2000), it seems reasonable to propose that the DASS be used to comprehensively assess and distinguish between the negative emotional states suffered by postnatal women. The present study advocates that in order to represent a more complete picture of affective disturbance following childbirth, the term *distress* be used to identify not only depression, but anxiety, and stress. The DASS was selected for (1) the purpose of identifying these three negative emotional states as separate phenomena, (2) the promise it holds for postpartum populations, in that it does not include the potential confounding factors for which other depression-severity scales have been criticized, and (3) the capacity of the DASS to identify mild symptoms of each negative affective state, in order to target women who might be distressed at this critical time, and who might be in danger of worsening symptomatology if left untreated.

Using the DASS to identify anxious-depression

Another use of the DASS is its capacity to identify comorbidity of the negative emotional states of depression, anxiety and stress. Of particular interest in the present study was the prevalence of anxious-depression (i.e., cases where depression and anxiety co-occur). As depicted in Section 1.2.4.1, this interest was due to the reported manifestation of a number of increased risks for patients with anxious-depression as compared to patients with depression alone. In non-postpartum populations, patients with anxious-depression have been shown to manifest more severe symptoms (Rivas-Vazquez et al., 2004), show poorer acute and long-term outcome (Rivas-Vazquez et al., 2004), exhibit increased levels of social-occupational impairment (Kush, 2004), are at increased risk for suicide (Fawcett, 1997; Sareen et al., 2005), in comparison to their depressed-only and anxious-only counterparts. The present study was not only focused on determining the prevalence of anxious-depression in a postnatal population, but was interested in examining whether there were differences between anxious-depressed, depressed-only women, and anxious and/or stressed women in relation to their scores on a number of proposed cognitive measures.
1.8.3.3 Postnatal well-being

According to Green and Kafetsios (1997), studies of women’s postnatal experiences tend to focus on the negative and ignore the positive. These authors stated that “…positive experiences of motherhood might be more than just an absence of depression” (p. 2). Little research has been conducted on the well-being of postnatal women (Boyce et al., 2000). In the general psychological literature, the study of well-being emerged out of a reaction to the overwhelmingly disproportionate emphasis of negative states (Diener, Suh, Lucas, & Smith, 1999). According to researchers in the domain of general psychological well-being, life satisfaction is a key indicator (Ryff & Keyes, 1995). Although the focus of the present study is on the negative aspects of the postnatal experience (i.e., depression, anxiety and stress), two measures of postnatal well-being were also examined in the context of postnatal distress. These measures were that of a single-item rating of maternal role satisfaction, and the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). It was hypothesized that scores on these two well-being measures would be lower for distressed women than non-distressed women.

1.8.3.4 Postnatal distress: Outcome measures in the cognitive vulnerability-stress model

In summary, the present study argued for a broader measurement of postnatal distress to include depression, anxiety and stress. In addition, two measures of postnatal well-being (maternal role satisfaction and satisfaction with life) were proposed to be relevant to postnatal distress. The outcome measures within the cognitive vulnerability-stress model are presented visually in Figure 2.
Figure 2. Outcome measures in the cognitive vulnerability-stress model.

### 1.8.4 Sources of stress in the postpartum

According to the cognitive vulnerability-stress or diathesis-stress models, stress activates a diathesis, which can transform the potential for characteristic ways of thinking (vulnerability) into negative affective states. This section provides an overview and associated hypotheses for a number of proposed sources of stress in the postpartum. Section 1.8.5 addresses the factors that are proposed to be vulnerabilities to postnatal distress, in the face of the stressors of new motherhood. Central to the theories of depression, anxiety and stress is the concept of loss or lack of control over important outcomes in people’s lives. It was assumed in the present study that new motherhood has the potential to pose a number of demands that could be appraised by women as taxing or exceeding their personal resources. The demands of a new baby could therefore contribute to a loss of control and order, feelings of inadequacy as a mother, and ultimately to postnatal distress. Of primary interest in the present study are
cognitive factors relating to control. Section 1.8.4.1 provides a background to the concept of control and its proposed relationship to postnatal distress. Specific hypotheses are outlined, according to the respective variables.

1.8.4.1 Cognitive factors

Control

As discussed in Section 1.6 perceptions of a lack of control have commonly been linked to subjective distress (Rapee et al., 1996). Diminished levels of perceived control over the demands of a situation, and a sense of unpredictability, are factors that have been related to negative affective states, such as depression, anxiety and stress. Control has important applications in stress, coping, and adaptation (Walker, 2001). Control can refer to the motivation for a desired outcome, or to the outcome itself. Perceived control has been found to be a more powerful predictor of functioning than actual control. The present study recognized that the postnatal period for first-time mothers can be a challenging time, when loss of control is a common scenario, when women’s usual strategies for control may be compromised, and when women’s sense of competence and self-mastery might be called into question in this new life domain. According to Dunnewold and Sanford (2000) women’s daily routines in the postpartum undergo constant disruption and unpredictability, which can leave women feeling unsettled, frustrated and in some cases stressed, anxious, and depressed.

Perceptions of control and order.

It was anticipated that with the demands associated with infant care in the postpartum, women would experience a loss of control and order over their routines (especially in comparison to the control and order they may have previously been used to). The present study hypothesized that postnatally distressed women would be characterized by low levels of perceived control and order in the postpartum. Based on the reports of postnatal women in clinical practice (also see Dunnewold & Sanford, 2000; Lamble & Morris, 1999), a set of items was generated to measure women’s perceived control and order in the postpartum. These items include themes of predictability, routine, organization, feeling in control, things going smoothly, achieving daily goals, ordering of tasks, neatness, delegation and ability to “go with the flow”. These items were subjected to psychometric analyses as part of the development of a scale to tap into perceptions of control and order. Once established, the specific
hypothesis could be tested regarding perceptions of control and order being predicted to be lower for distressed women than for non-distressed women.

*Parenting self-efficacy.*

Sections 1.5.4.2 and 1.6.5 discussed the relationship between self-efficacy and psychological distress. According to Bandura (1982), low perceived self-efficacy (the extent to which people feel capable of achieving their goals) can result in poor persistence, self-blaming attributions and depression. Although women’s general self-efficacy might be high (see Section 1.8.5 regarding generalized self-efficacy), this may not reflect their levels of competence in the realm of new motherhood. Maternal or parenting self-efficacy is specifically related to women’s perceived performance in their roles as mothers (Teti & Gelfand, 1991). Parenting self-efficacy beliefs refer to “…parents’ self-referent estimations of competence in the parental role” (Coleman & Karraker, 2003, p. 128). It has been argued that maternal self-efficacy is a core feature of women’s adaptation to motherhood (Gross, Conrad, Fogg, & Wothke, 1994). Research has shown that poor maternal self-efficacy is correlated with maternal depression (Gross et al., 1994). The present study hypothesized that distressed women would have poorer levels of parenting self-efficacy than non-distressed women. In order to assess women’s self-efficacy in their role as parent, the present study used the Parenting Sense of Competence subscale from the Parenting Stress Index (Abidin, 1995). This scale assesses a mother’s knowledge of how to manage her child, and her comfort in making decisions about her child’s needs (Abidin, 1995).

1.8.4.2 Other sources of stress

Other sources of stress reflected in the theoretical model are factors that have previously been found to relate to postnatal depression (See Section 1.7). These sources of stress are life events, birth-related factors, infant factors, relationship factors and social support. The notion of control (or perceived lack of control) is once again of interest in relation to women’s experience of birth. A unique contribution in terms of a hypothesized source of stress, is that of social judgement.
Life event factors

*Appraisal of stressful life events.*

The present study conceptualized new motherhood as a potentially stressful life event in and of itself. However, additional stressors (such as illness, relationship difficulties, unemployment) were hypothesized to be associated with postnatal distress. According to Thoits (1995), the accumulation of stressors can overtax individuals’ abilities to cope or readjust to life demands, which can increase the likelihood of psychological distress. Research has shown that one or more major negative life event occurring over a six to twelve month period, was predictive of psychological distress (see Thoits, 1995). In postnatal populations, it has been shown that life stressors occurring before and after the birth can have a cumulative effect on the well-being of mothers, and can contribute to the development of postnatal depression (Boyce & Hickey, 2005; Cutrona, 1982; Hopkins et al., 1984). Stressful life events linked to postnatal depression have included finances, unemployment, housing, and bereavement, relationship breakdown or divorce, and moving home (Pope, 2000; Robertson et al., 2004). In the present study, the time frame for the occurrence of stressful life events, incorporated pregnancy and the postpartum (i.e., up to six months postpartum). In reference to the theoretical model, stressful life events are therefore reflected under *vulnerability factors* (occurring during pregnancy) and under *sources of stress* (occurring following the birth).

Lazarus (1990) suggested that life events hold different significances for people depending on their cognitive agendas and coping resources, with cognitive appraisal accounting for why people experience life events differently. The cognitive-phenomenological model of stress argues that it is not the objective characteristics of events that determines an individual’s distress, but rather the way in which the individual appraises the event/s. The present study therefore hypothesized that women’s appraisal as to the ‘stressfulness’ of the life events they had experienced, would differ for postnatally distressed women compared to non-distressed women.

Birth-related factors

*Feeling out of control during birth.*

In some studies, obstetric complications and operative delivery have been associated with postnatal depression, and in other studies these factors have not (see Pope, 2000 for a review). According to Baker et al. (2005), physical factors such as
medical intervention only become relevant to women’s reported experience of childbirth, when psychological factors were excluded from analyses. In the present study, it was the psychological experience of perceived control that was of primary interest. Researchers have shown that the experience of loss of control over situations, in general, is associated with depression, anxiety and stress (Burger, 1989; Barlow, 2000; Chorpita & Barlow, 1998; Rapee et al., 1996; Walker, 2001). Feelings of being in control in labour have been significantly linked to reduced likelihood of postnatal depression (Oakley et al., 1990), and increased likelihood of emotional well-being (Green, 1999; Green & Baston, 2003; Green et al., 1990). According to Boyce (2003), women who report having had a traumatic delivery (which includes feeling a loss of control) may be at an increased risk for postnatal depression, or Post-Traumatic Stress Disorder. Given that it is the birth of a child that defines a woman’s postnatal membership, and that control is an important focus of the present study, women’s ratings of feeling out of control during their births was the birth-related construct that was measured. Specifically, the present study examined whether feeling out of control was rated higher for women who were postnatally distressed than for women who were not postnatally distressed. It was hypothesized that ratings of feeling out of control during birth would be higher for women who were postnatally distressed than for women who were not postnatally distressed.

Infant-related factors

*Ratings of infant difficulty.*

Perceived infant difficulty has consistently been associated with postnatal depression (see Pope, 2000). Within the stress and coping paradigm, infant difficulty can be conceptualized as a stressor that might overtax women’s abilities to cope with the demands of new motherhood, and thereby increase the likelihood of psychological distress. It was hypothesized that women’s appraisal as to the difficulty/ease of their baby in comparison to other babies, would be worse for postnatally distressed women from non-distressed women. The present study also explored correlations between ratings of infant difficulty and a number of baby-related problems that might have contributed to women’s perceptions of infant difficulty. Adapted from Milgrom et al. (1999) these baby problem areas were: Colic/reflux, sleeping problems, excessive crying, eating problems, and ongoing health problems.
Relationship factors

Quality of relationship with partner after baby.

A considerable body of literature supports the association between the quality of women’s marital relationships and postnatal depression (see Pope, 2000; SIGN, 2002). It was hypothesized that women who were postnatally distressed would have lower ratings regarding the perceived quality of their relationship (after the birth of their baby) than women who were not postnatally distressed.

Social factors

Social support.

Lack of social support has consistently been found to be associated with postnatal depression (see Pope, 2000; SIGN, 2002). Within a cognitive-phenomenological framework, access to social support has been shown to be a coping resource (Terry, 1991b), or type of coping assistance available to individuals in their efforts to cope with potentially stressful encounters (Terry et al., 1995; Thoits 1986). The stressors inherent in new motherhood can pose demands that can threaten women’s capacities to cope, giving rise to the potential benefits of social support as a resource. The present study therefore hypothesized that levels of social support would be lower for postnatally distressed women than for women who were not distressed.

Social judgements.

The transition to new motherhood has been reported to be a stressful period, during which time women are expected to make extensive social and personal adjustments (Dimitrovsky et al., 2002). As part of integrating this new role into their self-concept, women are susceptible to many and varied socio-cultural norms regarding motherhood (Dimitrovsky et al., 2002; Milgrom et al., 1999). According to Dimitrovsky et al. (2002), postnatal depression may be related to the stress involved in adapting to this role, and in reconciling such sociocultural expectations. Based on clinical reports (to the present author, and Lamble & Morris, 1999), the present study was interested in the extent to which women felt judged or criticized by significant others in relation to their roles as new mothers. In order to capture this phenomenon, women were asked to rate the extent to which they perceived being judged or criticized by others (i.e., various family members and other parents), and to nominate the areas of motherhood about which they felt judged (e.g., their birth, childcare, house neatness, dealing with baby’s sleep, etc).
Although the present study was interested in the extent to which women felt judged by a number of significant others, of primary interest was the extent to which women felt criticized or judged by their mothers and mothers-in-law. This interest was based on findings from the social support literature that show that “more intimate providers of support have been found to have a stronger affect on health” (Norwood, 1996, p. 144), and from clinical reports (to the author) that mothers and mothers-in-law are the people who provide the most support in the postpartum. Norwood (1996) posited that family support networks can be a source of stress for the supportee, depending on the values and beliefs that are projected by the so called ‘supporters’. Pope (2000) cited a study conducted in 1976 that showed depressed mood to be more likely in women who had a poor relationship with their mothers. Boyce et al. (1991) found that low maternal care and paternal overprotection were associated with postnatal depression. These authors stated that a woman who has experienced dysfunctional parenting herself, may find the mothering role particularly difficult. Matthey et al. (2000) found that a factor associated with postnatal depressed mood was the perception held by women that their own mothers were over-controlling or over-protective. In this vein, it was hypothesized that levels of perceived criticism/judgement from mothers and mothers-in-law would be higher for postnatally distressed women for non-postnatally distressed women.

1.8.4.3 Sources of stress in the cognitive vulnerability-stress model

In summary, the present study proposed a number of sources of stress to precipitate postnatal distress. Birth and new motherhood pose many demands that can be appraised as taxing or exceeding women’s personal resources, and control has been posited as playing a central role. Additional life stressors and social sources of stress have also been postulated as sources of stress. Figure 3 represents the sources of stress - surrounding birth and occurring in the postpartum (i.e., up to six months after birth) – that were hypothesized to be associated with postnatal distress. It should be noted that the part of the model that refers to hormonal factors is beyond the scope of the present study, but remains in the model in order to subscribe faithfully to the biopsychosocial conceptualization proposed by the authors (i.e., Milgrom et al., 1999).
As discussed in Section 1.7.2, the notion of vulnerability has become a focal organizing construct around which much of the research on affective disorders is conceptualized (Ingram, 2003). It has been argued that new motherhood is a potentially stressful life event (see Sections 1.1 and 1.7.3.2), with new mothers varying in their adjustment from a sense of well-being and adaptive adjustment, through various degrees of stress and strains, to severe depression (and in some cases, psychosis) (Levy-Shiff et al., 1998). Central to the findings that individuals differ in their responses to given stressors, is the notion of cognitive appraisal and coping (See Section 1.5). Appraisals intervene between the initial perception of an event, and the subsequent experience of it, serving as a pathway through which personal and environmental variables influence the emotional, physiological and behavioural outcome (Lazarus, 1993). In part, the appraisal process encompasses judgements about the controllability of a situation (e.g.,
Levy-Shiff et al., 1998), and on the assessment of the personal and social coping resources available to the individual.

According to the cognitive-phenomenological model of stress and coping, new motherhood has the potential to pose demands upon women that can exceed or tax their appraised capacity to attain desired outcomes. This may be more likely for women whose personal expectations or standards are particularly high, and when their appraisals involve self-to-standard discrepancies, which according to the self-awareness theories of depression, can contribute to their experience of distress (see Section 1.3.3). The vulnerability component of the model in the present study, presents three unique cognitive factors that do not seem to have been investigated empirically elsewhere. These factors are (1) a strong need for control and order, (2) perfectionism, and (3) fear of negative evaluation. The general assumptions here are that these factors may represent cognitive vulnerability that may have specific significance to the postnatal period, and that the stressors associated with new motherhood may interact with these characteristic ways of thinking to render women vulnerable to postnatal distress.

1.8.5.1 Cognitive vulnerability factors

As described in Section 1.5, the cognitive-phenomenological model of stress and coping suggests that stress is the result of both the demands of the environment (stressors that pose harm, threat, loss, or challenge) and characteristics of the person (i.e., resources, motives, beliefs, traits) (Lazarus, 1990). It has been reported that personal vulnerability can interact with stressful life events to bring about negative affective responses such as depression, anxiety and stress. Central to the theories of depression, anxiety and stress (outlined in Sections 1.3, 1.4, 1.5), is the concept of control, and the notion of characteristic ways of thinking. Section 1.6 referred to the extensive literature on control. The following sub-sections are presented in two parts: (1) A section on control (i.e., desire for control, generalized self-efficacy, and perceived control of internal states), followed by (2) a section on individual characteristics that encapsulate characteristic ways of thinking, incorporating high personal expectations, beliefs or standards (i.e., perfectionism and fear of negative evaluation).
Control

As outlined in Section 1.6, one of our strongest motivators is to have a sense of control over our lives, and one of our strongest fears is losing control (Shapiro & Astin, 1998). Control can refer to the motivation for a desired outcome, or to the outcome itself. Control - both over one’s external environments (external control) and over one’s internal perceptions and states (internal control) - is a critical variable in one’s health and well-being.

The present study was interested in assessing the impact of control (both external and internal) on women’s experience of distress in the postpartum, as well as understanding the extent to which control-related variables are adaptive and maladaptive. Some modes of control effective in one domain (e.g., the workplace) may be less effective in other areas of life (e.g., new motherhood) (Shapiro & Astin, 1998). For therapists working with women who are adjusting to postpartum challenges, understanding modes of control may contribute to the overall effectiveness of this work.

The control variables tested in the present study were (a) general desire for control and order (the extent to which women perceive they need control and order), (b) generalized self-efficacy (the extent to which women generally feel competent and capable of attaining desired outcomes), and (c) perceived control of internal states (the extent to which women perceive they can manage their thoughts and feelings).

General desire for control and order.

Although it has been shown that the more one feels in control over an event, the better, there are exceptions to this rule (Burger, 1992). New motherhood can be a time when unpredictability and uncontrollability are rife, and this can pose a threat to women who have a high need for control and order (Milgrom et al., 1999). It has been suggested (although not empirically tested) that women with a strong need for control and order could be at risk for postnatal depression (Dunnewold & Sanford, 2000; Milgrom et al., 1999). Lazarus and Folkman (1984) defined stress as resulting from peoples’ perceptions that the demands of a situation tax or exceed their resources to deal with the situation effectively. According to Burger (1992), many of the demands on high desire for control people are self-imposed, therefore it is reasonable to predict that women who have a high desire for control may be vulnerable to distress.

Desire for control has been conceptualized by Burger (1995) as a general personality disposition. Burger and Cooper (1979) developed the Desirability of Control Scale, which has predicted behaviour in a wide variety of situations (Burger,
The present study was interested in tapping into women’s general desire for control and order as a characteristic way of thinking. However, Burger and Cooper’s (1979) Desirability of Control Scale was deemed unsuitable for the population of interest (i.e., postnatal women), due to its references to work, politics and leadership. Burger (1992) himself conceded that it is possible to develop desire for control measures for specific life experiences (which in the present study is new motherhood). Burger (1992) suggested that other researchers have found that scales developed to measure desire for control over health care predicted health care behaviours better than a measure of general desire for control (Smith, Wallston, Wallston, Forsberg, & King, as cited in Burger, 1992). Similarly, locus of control scores that measure specific domains of marriage and academic achievement, predicted outcomes in these domains more effectively than general locus of control scales (Burger, 1995). The present study was interested in better understanding desire for control in the postpartum.

The present study sought to create a new desire for control scale that would apply appropriately (but not specifically) to a population of postnatal women. Like Burger and Cooper (1979) it was conceived of as a set of questions tapping into a general personality trait, rather than a set of questions relating to specific mother-related or baby-related aspects of control. Unlike Burger and Cooper’s (1979) scale however, no references were made to work, politics or leadership, as these topics were deemed less relevant to the population of postnatal women. The scale developed here was derived from themes collated from the clinical records of postnatal women (i.e., around general aspects of control that women found were compromised specifically in the postpartum period). These themes encompassed the notion of order as well as control, covering topics of predictability, routine, organization, expectations, achieving daily goals, ordering of tasks, neatness, delegation and inability to “go with the flow”. The set of items intended to tap into general desire for control and order underwent psychometric analysis before the following hypotheses could be explored: (1) Levels of general desire for control and order would be higher for postnatally distressed women from for non-distressed women. In other words, with the demands associated with caring for a new baby, distressed women would have higher levels of desire for control and order than non-distressed women, to the extent that this ideal or standard is not met.

Generalized self-efficacy.

Self-efficacy is seen as a vulnerability factor that may operate in the presence of stressful encounters. People with high perceived self-efficacy tend to trust their general
capabilities to master environmental demands. Self-efficacy can be conceptualized both in terms of a control resource (see Section 1.6.5) and a coping resource (see Section 1.5.4.2). In terms of control, self-efficacy can be seen as the extent to which one expects to have personal control by feeling capable of achieving one’s goals. In terms of coping, self-efficacy can be seen as a resource that allows an individual to appraise a situation as challenging rather than threatening, and to feel competent to produce desired effects.

Although self-efficacy is commonly understood in domain-specific contexts (and a measure of parenting self-efficacy is used in the present study – see Section 1.8.4.1), some researchers have conceptualized a more generalized measure of self-efficacy (Schwarzer, 1994). The Generalized Self-Efficacy Scale developed by Schwarzer and Jerusalem (1995), refers to a global confidence in one’s coping ability across a range of situations. According to these authors, general self-efficacy denotes a broad and stable sense of personal competence to deal effectively with a variety of stressful situations (Schwarzer, 1994). The present study hypothesized that postnatally distressed women would have lower levels of generalized self-efficacy than non-distressed women.

Perceived control of internal states (PCOISS).

Researchers have pointed to the importance of individuals’ perceived control of their internal states such as their thoughts, emotions and physical reactions (Pallant, 2000; Thompson et al., 1994; Thompson et al., 1993). According to Wallston et al. (1987), perceived control is “the belief that one can determine one’s own internal states and behaviour, influence one’s environment and/or bring about desired outcomes” (p. 5). Perceived control over the emotional responses to a situation may be more adaptive than gaining control over the situation itself, especially in situations where control and predictability are limited (Pallant, 2000). Control over one’s internal states is a major component of emotional intelligence (see Salovey & Mayer, 1990; and a review by Goleman, 1995). The Perceived Control of Internal States Scale (PCOISS), developed by Pallant (2000) was used in order to determine the degree to which individuals felt they had control over their internal states (emotions, thoughts and physical reactions). Perceived control of internal states can be conceived of as a control or coping resource. Pallant (2000) showed low PCOISS scores (low perceived control over internal states) to be associated with higher anxiety, depression, negative mood states, and perceived stress. The general premise in the present study was that new motherhood presents
women with unpredictability and uncontrollability. It was therefore hypothesized that distressed women would have lower scores on PCOISS than non-distressed women.

Based on clinical observation, (and as described in Section 1.1) it was also proposed in the present study that the demands of new motherhood can reduce women’s capacity to attain the control and order over their lives that they were either used to or that they expected (i.e., external control). The present study investigated women’s perceived control of their internal states based on the notion that their capacities to find internal control might ameliorate their experiences of postnatal distress in light of reduced levels of external control and order at this time (i.e., perceptions of control and order). According to Pallant (2000), if people feel confident in their ability to control their negative thoughts, feelings and reactions when exposed to stressors in everyday life, they may be in a better position to deal with these stressors than those who have little control over their internal states.

Individual characteristics

Depressive vulnerability has been linked to two specific personality types of autonomy (which includes an extreme need for achievement and control) and sociotropy (an excessive reliance on social approval) (Beck, 1983). As depicted in Section 1.3.3, self-awareness theories of depression state that when individuals perceive discrepancies between their current status and their goals and standards, this can lead to distress. In particular, when not met, ideal standards (“being the best that I can be”) can result in feelings of dejection which can lead to depression, and ought standards (“being the kind of person that I am supposed to be”) can lead to agitation or anxiety. The present study proposed a role for two alternative measures of cognitive vulnerability– perfectionism and fear of negative evaluation – that tap into individuals’ characteristic ways of thinking. These measures were explored in the context of postnatal distress.

Perfectionism.

Perfectionistic tendencies have been found to be associated with psychological distress (Shafran & Mansell, 2001), including depression (see Section 1.3.5), anxiety (see Section 1.4.5) and stress (see Section 1.5.5). Studies have also supported the notion that perfectionists are vulnerable to depression during periods of high stress (see Section 1.3.5). Perfectionism is conceived of in the present study as an individual characteristic that may serve as a psychological vulnerability factor that is likely to be
activated by the stressors inherent in new motherhood. Perfectionism may have special significance to women in the postpartum (Milgrom et al., 1999), given that the demands of a new baby might prohibit the attainment of perfectionistic goals or standards. The present study proposed that women who have high perfectionism scores might be more vulnerable to postnatal distress. In line with self-awareness theories (see Section 1.3.3), this broad hypothesis was formed on the basis that the demands of a newborn might create an environment whereby highly perfectionistic women may not be able to attain their ideal and ought self-standards. These standards have been measured using the Multidimensional Perfectionism Scale (Hewitt & Flett, 1991b), in particular the subscales of self-oriented perfectionism and socially-prescribed perfectionism. It was hypothesized that postnatally distressed women would have higher perfectionism scores than non-distressed women.

Fear of negative evaluation.

A related construct to perfectionism is that of fear of negative evaluation (the extent to which individuals experience apprehension at the prospect of being evaluated negatively (Leary, 1983). Public self-awareness or self-focus characterizes individuals who have anxiety in social contexts (Gaudiano & Herbert, 2003). As overviewed in Section 1.1, the present study posited that new motherhood involves significant changes for women to their social status, to their social functioning and to their social identity. Being a new mother involves a public ‘role’ whereby women are subject to differing opinions and expectations about motherhood. It was of interest in the present study as to whether fear of negative evaluation might be a vulnerability factor for women in terms of their postnatal adjustment. It was hypothesized that postnatally distressed women would have higher levels of fear of negative evaluation than non-distressed women.

1.8.5.2 Other vulnerability factors

This section outlines hypotheses relating to other vulnerability factors that are not central to the present study, but are of interest nevertheless due to previous findings linking these variables with postnatal distress. These remaining variables pertain to antenatal mood, relationship quality before the birth of the baby, and demographic factors.
Antenatal factors

*Ratings of antenatal depression and anxiety.*

As discussed in Section 1.7.2.2, antenatal depression has been found to be one of the most significant predictors of postnatal depression. Antenatal anxiety has also been associated with anxious symptomatology in the postpartum (Brouwers et al., 2001a). The present study hypothesized that self-reported levels of antenatal depression, and antenatal anxiety would be higher for postnatally distressed women than for non-distressed women.

Relationship factors

*Quality of relationship with partner before baby.*

According to Pope (2000) relationship difficulties have been consistently linked to postnatal depression. This is the case whether relationship difficulties precede or follow the onset of depression (Pope, 2000). The present study used a retrospective rating of relationship quality that referred to *before your baby was born.* It was proposed that a poor quality relationship before having their babies would serve as a vulnerability factor for postnatal distress. It was therefore hypothesized that postnatally distressed women would have poorer levels of pre-baby relationship quality than non-distressed women.

Demographic factors

*Maternal age and level of education.*

In Pope’s (2000) review of the postnatal depression literature, she conceptualized maternal age as a possible risk factor for postnatal depression, but qualified that age may be related to other factors such as lifestyle, parity or affective history. According to Terry et al. (1996), demographic variables are generally unrelated to postnatal depression. With respect to levels of education, a study conducted in Finland, with a sample of 373 new mothers, found that mothers with depressive symptoms had fewer years of education than mothers with no depressive symptomatology (Tammentie et al., 2002). Bernazzani et al. (1997) also found this to be the case. In the present study, no specific hypotheses were proposed for maternal age or level of education as vulnerability factors for postnatal distress, however these variables were explored nevertheless, in relation to postnatal distress.
**Baby age.**

The age of the baby or the number of weeks postpartum, is a variable that has no particular hypothesis associated with it in the present study. Research evidence suggests that 50% of cases of postnatal depression start within the first three months, and 75% by six months postpartum (Cooper et al., 1988). The age of the baby at the time of completing the questionnaire, was a variable that was explored in order to determine whether there were significant differences between women who were distressed and women who were not.

1.8.5.3 Vulnerability factors in the cognitive vulnerability-stress model: The full model

In summary, a number of vulnerability factors have been proposed in the cognitive vulnerability-stress model of postnatal distress. Control-related factors, together with individual characteristics have been posited as cognitive variables that represent vulnerability in postnatal women. Other factors pertaining to pregnancy, women’s relationships, and demographics, are also presented as vulnerability factors. All of these factors are postulated to be vulnerability factors that could be triggered in the presence of the stressful life event of new motherhood. Figure 4 depicts these vulnerability factors in the context of the full model of postnatal distress. It should be noted that the part of the model that refers to biological factors is beyond the scope of the present study, but remains in the model in order to subscribe faithfully to the biopsychosocial conceptualization proposed by the authors (i.e., Milgrom et al., 1999).
1.8.6 Aims of the present study

There are five major aims of this thesis: (1) To expand the criteria for postnatal distress to include anxiety and stress as well as depression. This involves first examining the prevalence of postnatal depression in the total sample - using the EPDS and the DASS - and the extent to which these two scales corroborate their categorical classifications. Second, using a conceptualization of postnatal distress to include depression, anxiety and stress, assessing the extent to which anxious and stressed mothers might otherwise be missed using criteria for depression only. (2) To psychometrically develop two sets of items intended to measure control – levels of perceived control and order (a perceived outcome) and levels of general desire for control and order (the motivation for a desired outcome). These sets of items are proposed to have specific relevance to postnatal populations. The aim here, is to validate these constructs in order to assess them (in a subsequent section) as to the extent to which they differ for postnatally distressed women as compared to non-
distressed women. (3) To use a cognitive framework for assessing factors (both sources of stress and vulnerability factors) that are hypothesized to differentiate women who are postnatally distressed from women who are not postnatally distressed. (4) To test a cognitive vulnerability-stress model by assessing the extent to which the model as a whole, and the individual factors within the model contribute to postnatal distress. (5) To provide a preliminary investigation into three subsets of postnatally distressed women - depressed, anxious-depressed, and anxious and/or stressed (as assessed using the DASS) - and to compare these three groups on cognitive factors. The aim here is to determine whether anxious-depressed women differ significantly, compared to depressed-only and anxious and/or stressed women, on the proposed cognitive sources of stress variables and vulnerability factors.
CHAPTER 2: METHOD

2.1 Study design and sampling

A questionnaire-based, cross-sectional study design was used to provide a preliminary exploration of the associations between a number of unique variables of interest in the present study. A prospective design would have been an optimal approach to ascertain the direction of these associations within the cognitive vulnerability-stress model, however this was not feasible within the scope of a Professional Doctorate of Psychology (DPsych). More extensive future research would be required, using multiple measurement points, to determine the predictive nature of variables within the proposed model. Nevertheless, the present study design was seen as a useful first step in the examination of potential sources of stress and vulnerability factors proposed to be associated with postnatal distress.

An advantage of using questionnaire-based sampling is that respondents’ identities remain anonymous. This can contribute to a larger uptake in participation than a study that involves identifying information for the purposes of follow-up (Neuman, 2003). Enhancing the likelihood of attaining a sizeable sample was an important factor in this explorative research. The aim was to attain as many respondents as possible within the time frame stipulated in the Professional Doctorate. At least 300 participants were required for the purposes of attaining a suitable sample size to conduct Factor Analysis (Tabachnick & Fidell, 2001), for the psychometric development and assessment of two proposed measures of control.

Within the present design, a convenience sample was sought by approaching Maternal and Child Health Centres (in Melbourne metropolitan areas), to request that midwives make the questionnaires available to new mothers and mothers’ groups. Similarly doctors’ practices in Melbourne Metropolitan areas and semi-rural areas, were also approached to make questionnaires available to new mothers. The aim was to collect data from a general community sample whereby differences between distressed versus non-distressed new mothers could be examined. Posters were provided to advertise the study within these settings (see Appendix A). There was no record as to the way in which women received the questionnaires in these settings (i.e., directly from the midwife/doctor, or by requesting or taking a questionnaire upon reading the
displayed poster). There was also no record as to which settings respondents obtained questionnaires from (i.e., Maternal and Child Health Centres, mothers’ groups, or doctors’ practices). Therefore no information could be assessed as to which women elected to participate, and which women did not. This means that the design of this study has potential limitations with respect to the socio-demographic factors that may underlie participation or non-participation in the study. This has implications for the representativeness of the sample and the generalizeability of the findings. Limitations of the study are discussed in Section 4.2.

2.2 Sample

Inclusion/exclusion criteria were used to minimize potential confounding factors. In order to reduce the potential confounds of additional children, criteria for inclusion limited participants to first time mothers with no step or foster children. Similarly, to reduce variability of different stressors impacting women at later stages of infant development, participants were required to be between 6 weeks and 6 months postnatal. This time-period was also consistent with other research that has found that half the cases of postnatal depression occur in the first three months, and three quarters of cases by six months postpartum (Cooper et al., 1988). A total of 325 first-time mothers, recruited from maternal and child health centres, mother’s groups, and doctors’ surgeries, participated voluntarily in this study. Participant characteristics are presented in Section 3.1.

2.3 Measures

This section outlines the measures used in the present study. Appendix B presents the original questionnaire that was distributed to participants. Appendix C presents the items and scales that were analyzed in the present study (i.e., not all items in the original questionnaire were analyzed). Background questions (e.g., maternal age, baby age, education) can be found in the original questionnaire presented in Appendix B.
2.3.1 Postnatal distress: Outcome measures

Postnatal Depression: The Edinburgh Postnatal Depression Scale (EPDS). The EPDS has been designed to screen postnatal women for the likelihood of postnatal depression (Cox et al., 1987). The EPDS has been used extensively as a screening tool in clinical practice and in research into various aspects of postnatal depression (Guedeny, Rermanian, Guelfi, & Kumar, 2000). Boyd, Le, & Somberg (2005) stated that the EPDS is the most widely used screening tool for postnatal depression. The EPDS assesses symptoms of anhedonia and reactivity, self-blame, anxiety, panic, coping, insomnia (due to unhappiness), sadness, tearfulness and self-harm (Boyd et al., 1993). The EPDS excludes somatic symptoms such as fatigue and change in appetite, which may occur normally in the postpartum, and which may otherwise potentially not discriminate depressed from non-depressed women.

The EPDS is a 10-item scale that includes questions such as “I have been able to laugh and see the funny side of things” and “I have blamed myself unnecessarily when things went wrong”. Respondents indicate on a four-point scale, the response that best describes the way they have been feeling over the past seven days. Items are scored from 0 to 3 with a resulting range of 0 to 30. Scores above 12 are considered to be indicative of probable depression and scores above 9 have been referred to by some authors as indicative of possible depression (Cox et al., 1987; Leverton & Elliott, 2000). Scores above 12 have shown the sensitivity of the EPDS to be 86% (the percentage of true cases of postnatal depression identified), the specificity to be 78% (the percentage of true non-cases of postnatal depression), and the positive predictive value of 73% (the percentage of all those tested as positive who were correctly identified as such) (these values related to all depressive subtypes as identified by research diagnostic criteria from Standardized Psychiatric Interviews in 84 postnatal women recruited from health centres in the UK) (Cox et al., 1987). Murray and Carothers (1990) also used a cut-off score of above 12, reporting 95.7% sensitivity, 81.1% specificity, and a positive predictive value of 43% in a community sample. Using the same cut-off score, Harris et al. (1989) found the sensitivity of the EPDS to be 95%, the specificity to be 93%, and the positive predictive value to be 75% for women diagnosed with major depression. Finally, Boyce et al. (1993) - using an Australian sample of women recruited from Mothers’ advisory Clinics - reported the sensitivity of the EPDS to be 100%, the
specificity to be 95.7% and the positive predictive value to be 69.2%. However it should be noted that although the validity of the EPDS was further supported by this study, the sample was small (N=103, Boyce et al., 1993).

Some authors have recommended a cut-off of over 9 to increase the sensitivity of the EPDS in community screening (Dennis, 2004; Leverton & Elliot, 2000; Murray & Carothers, 1990; Zelkowitz & Milet, 1995). This lower threshold has been reported to have a sensitivity of 84-100% and a specificity of 82-88% (Harris et al., 1989; Murray & Carothers, 1990). The present study, based on a community sample, used a cut-off score of over 9.

The reliability and validity of the EPDS has been well-documented (Affonso et al., 2000). According to Boyd et al. (2005), the EPDS shows moderate to good reliability across samples from a large number of countries and languages. Cronbach’s alpha for the EPDS in the present study was .88.

**Depression, Anxiety and Stress: The Depression Anxiety Stress Scale (DASS-21).**

The DASS consists of three self-report scales that have been designed to measure the negative emotional states of depression, anxiety and stress (S.H. Lovibond & P.F. Lovibond, 1995). S.H. Lovibond & P.H Lovibond (1995) reported that the depression scale measures “…dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia”; the anxiety scale measures “autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect”; and the stress scale measures “difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient” (p. 1).

Initially normed on first-year university students (P.F. Lovibond & S.H. Lovibond, 1995), the DASS has also been normed on clinical samples with good psychometric properties (Brown et al., 1997). In both samples, exploratory factor analyses showed a three-factor structure of Depression, Anxiety and Stress (Brown et al., 1997; P.F. Lovibond & S.H. Lovibond, 1995). Evidence of convergent and divergent validity for the DASS has been found, whereby the DASS-Depression scale correlated strongly with the BDI-11 (r=.74), and the DASS-Anxiety scale correlated highly with the BAI (r=.81) (P.F. Lovibond & S.H. Lovibond, 1995; S.H. Lovibond & P.F. Lovibond, 1995).

The DASS-21 is a brief version of the full DASS, which was originally 42 items long. Each of the three DASS-21 scales contains seven items representing the
dimensions of depression, anxiety and stress. Participants are asked to rate the extent to which they experienced each state over the past week on a 4-point Likert-type rating scale. Sub-scale scores are derived by totaling the scores. The Depression scale is calculated by adding items 3, 5, 10, 13, 16, 17, and 21, the Anxiety scale is calculated by adding items 2, 4, 7, 9, 15, 19, and 20; and the Stress scale is calculated by adding items 1, 6, 8, 11, 12, 14, and 18. No items are reversed scored. Scores for each sub-scale are multiplied by two to ensure consistent interpretation with the longer 42 item version (S.H. Lovibond & P.F. Lovibond, 1995). The DASS manual provides a series of cut-off values to classify individuals into severity rating categories. These severity ratings are based on percentile scores, with 0-78 classified as normal, 78-87 as mild, 87-95 as moderate, 95-98 as severe, and 98-100 as extremely severe (S.H. Lovibond & P.F., Lovibond, 1995). S.H Lovibond & P.F. Lovibond’s reported alpha values for the DASS-21 from a student sample (N=717) were .81 for depression, .73 for anxiety, and .81 for stress. In a clinical sample, Clara, Cox, and Enns (2001), reported high levels of internal consistency for the DASS-21 with alpha values of .92 for depression, .81 for anxiety, and .88 for stress. Internal consistency in the present study was explored for each scale of the DASS-21, and Cronbach alpha coefficients were adequate: Depression (.84), anxiety (.77), and stress (.86).

Postnatal well-being: Maternal role satisfaction. One question was asked of respondents in order to ascertain their satisfaction with their role as a mother: “Overall, how satisfied are you with your role as a mother?” A 10-point Likert-type rating scale was used where 1=totally dissatisfied and 10=totally satisfied.

Satisfaction with Life. The Satisfaction with Life Scale (Diener et al., 1985) includes five items that measure participants’ overall life satisfaction. Designed to provide a global evaluation from respondents, rather than domain specific ratings, items include statements such as, “In most ways my life is close to my ideal”, “I am satisfied with my life”, and “If I could live my life over, I would change almost nothing”. Respondents indicate their level of agreement using a seven-point scale (where 1=strongly disagree to 7=strongly agree). Aggregated scores range from 5 (low satisfaction with life) to 35 (high satisfaction with life). Validation studies have reported good internal consistency for the scale, with Cronbach alphas of .85 (Pavot, Diener, Colvin, & Sandvik, 1991) and .89. The Satisfaction with Life Scale has been shown to be unidimensional and to correlate appropriately with other measures of
wellbeing (Pavot et al., 1991). The scale showed good internal consistency in the present study with a Cronbach’s alpha of .87.

2.3.2 Sources of stress

Perceptions of control and order. In order to tap into women’s current perceptions of control and order, eleven items were generated that were intended to tap into themes of predictability, routine, organization, ‘going with the flow’, feeling in control, things going smoothly, achieving daily goals, ordering of tasks, neatness and order. Statements such as “In my life at the moment, I have a predictable routine”, and “In my life at the moment, I am able to get most things done the way I like them to be done” were rated on a 5-point rating scale, whereby 1 = not at all and 5 = very much so. Items 2, 3, and 9 were reverse scored. Scores were summed (following confirmation of items from a principal components analysis), with higher scores representing higher levels of perceived control and order.

Parenting self-efficacy. The present study used the Parenting Competence scale, which is a subscale of the Parenting Stress Index (PSI) (Abidin, 1995). The PSI has been standardized for use with parents of children who range in age from 1 month to 12 years. The full PSI reflects a total stress score, incorporating two domains – a child and a parent domain, which are both further broken down by specific subscales, such as the Parenting Competence scale used here.

The PSI is typically used in research for assessing the effects of stress on parent-child interactions (Abidin, 1995), and in relation to other outcome variables (e.g., mother’s psychological adjustment, child’s adjustment, marital stress, child conduct problems, infant attachment, and maternal depression) (Abidin, 1995). The PSI has also been used in research on special populations (e.g., parents of autistic children, cross cultural populations) (Abidin, 1995). Abidin (1995) describes a multitude of studies that have validated the PSI, showing comparable statistical characteristics to those reported by the author in the PSI manual (Abidin, 1995).

The Parenting Competence subscale was used in the present study to measure mothers’ sense of competence in relation to their roles as parents. It assesses a mother’s knowledge of how to manage her child, and her comfort in making decisions about her child’s needs (Abidin, 1995). Two items out of the thirteen items that make up the
Parenting Competence scale were omitted. These two items relate to mother and father’s education. Demographic information was obtained at the outset of the present questionnaire, so it was not included again with the Parenting Competence scale.

Participants were asked to rate on a 5-point Lickert-type rating scale, their agreement or disagreement with nine statements about their role as parents. For example, “Being a parent is harder than I thought it would be” and “I feel capable and on top of things when I am caring for my child” (1=strongly disagree to 5=strongly agree). It should be noted that in the original representation of the Parenting Competence subscale (Abidin, 1995), the end points are 1=“strongly agree” and 5=“strongly disagree”. These were represented in the opposite way in order to have consistency throughout the present study’s questionnaire. Scores were added, with high scores relating to low perceived competence. Unlike the majority of items that had end points of 1=“strongly disagree” to 5=“strongly agree”, items 10 and 11 had specific responses for each item. For example, the responses for Question 10 were: “When I think about myself as a parent I believe” (a) “I can handle anything”, (b) “I can handle most things pretty well”, (c) “Sometimes I have doubts, but find that I handle most things without any problems”, (d) “I have some doubts about being able to handle things”, and (e) “I don’t think I handle things very well at all”. Items 3, 6, and 7 were reverse scored.

The Parenting Competence subscale is reported to have a Cronbach alpha coefficient of .83 for the thirteen items included in this subscale (Abidin, 1995). However, in the present study two items were omitted (comprising demographic information) resulting in a scale of only eleven items. The Cronbach’s alpha coefficient for the 11-item scale in the present study was .84.

**Ratings of life-event stress.** Respondents were asked to indicate the presence of any number of eight potentially stressful life events (adapted from Brugha, Bebbington, Tennant, & Hurry, 1985), that might have occurred during pregnancy or the postnatal period. In order to ascertain the negative impact, (or stress) associated with the stressors identified by women, a ten-point rating scale is included whereby women are asked to “…please rate how stressful you found the combination of [these] events to be” This rating scale is anchored by 1=not at all stressful to 10=extremely stressful.
Feeling out of control during birth. A single item ten-point Likert-type rating scale was used to determine the extent to which women felt out of control during their births, whereby 1 = “not at all”, and 10 = “very much so”.

Ratings of infant difficulty. In order to determine the extent to which mothers’ perceived their babies as difficult, a global rating was used. The question “in general, how difficult or easy would you rate your baby compared to other babies?” A ten-point Likert-type rating scale was used whereby 1 = ”extremely difficult” and 10 = ”extremely easy”. This item was reverse scored so that higher scores would reflect higher levels of infant difficulty. In order to explore correlations between this rating, and types of baby-related problems women experienced, four items adapted from Milgrom et al. (1999), are included in the present study. Mothers are asked whether their baby has any of the following: Colic/reflux, sleeping problems, excessive crying, eating problems (as depicted in Milgrom et al., 1999) with an additional item regarding the infant’s ongoing health. Respondents are asked to rate each item according to the level of severity. Ratings fall into four categories of none (with a corresponding score of 1), mild (with a corresponding score of 2), moderate (with a corresponding score of 3), and severe (with a corresponding score of 4).

Quality of relationship with partner after baby. A single item rating was used to assess women’s relationship quality after having their baby. This item stated, “please rate the quality of your relationship after your baby was born”. A ten-point Likert-type rating scale was used where 1 = constant friction or relationship breaking down and 10 = close, warm relationship. These end points were derived from questions used in Cooper et al. (1996). In their development of a predictive index for postnatal depression, using a number of predictive variables, Cooper et al. (1996) examined the single variable of relationship with partner.

Social support. Maternity Social Support Scale (MSSS). Social support was assessed using the MSSS (Webster, Linnane, Dibley, Hinson, Starrenburg, & Roberts, 2000). This scale is a 6-item, 5-point Likert-type rating scale that measures social factors associated with postnatal depression (i.e., low friendship network, lack of family support, lack of help from spouse/partner, conflict with spouse/partner, and feeling unloved by spouse/partner). The total possible score is 30 with cut-off points suggested
by Webster et al. (2000) as follows: 0-18 (low social support), 19-24 (medium support), and >24 (adequate support). Included in this scale was a not applicable category for all social support items. This was done in order to distinguish between a rating response of never suggesting that support is not provided by the particular person/s, versus not applicable which accounts for the particular supporter not being available in the woman’s life (e.g., deceased parents, or family who live overseas). Scores for two items on the MSSS were reversed: (Item D) “There is conflict with my partner”, and (Item E) “I feel controlled by my partner”. Items were summed, and higher scores indicate increased levels of social support. Webster, Pritchard, Creedy, & East, (2003) reported the MSSS to have shown Cronbach’s alpha reliability of 0.69 in the antenatal period, 0.72 at 3 days postpartum, and 0.78 at 16 weeks postpartum. Cronbach alpha in the present study was .69.

Social judgements. In order to determine the extent to which mothers felt socially judged or criticized, and by whom, thirteen items were generated. A ten-point Likert-type rating scale was used for respondents to rate the extent of criticism or judgement they experience (from 1= not at all criticized or judged to 10=very criticized or judged), from a number of listed people (i.e., their partner, their parents, their partners’ parents, their own and their partners’ families, and other parents).

A second component of this scale comprises a list of the areas about which mothers feel they are being criticized or judged (e.g. how she deals with her baby’s sleep, feeding her baby, childcare, going back to work, how her house looks, etc.). There was the option for respondents to write additional areas (not listed) about which they feel criticized or judged (See Appendix C for a complete list of items).

2.3.3 Vulnerability factors

General desire for control and order. In order to tap into women’s general desires for control and order, eleven items were generated that are intended to tap into themes of predictability, routine, organization, ‘going with the flow’, feeling in control, things going smoothly, achieving daily goals, ordering of tasks, neatness and order. Statements such as “In general, it is very important to me to have a predictable routine”, and “In general, I am a person who has very clear ideas about the way things should be done” are rated on a 5-point rating scale, whereby 1=not at all true of me and 5=very
true of me. Item 3 was reverse scored. Scores were summed, following confirmation of items from a principal components analysis (see Section 3.3), with higher scores representing higher levels of general desire for control and order.

**Perceived control of internal states: The Perceived Control of Internal States Scale-12 (PCOISS-12).** The PCOISS was originally developed by Pallant (2000) as an 18-item scale. This scale measures respondents’ perceptions of their capacity to moderate the impact of aversive events on their thoughts, emotions and physical well-being. Examples of questions include: “I can usually talk myself out of feeling bad”, and “even when under pressure I can usually keep calm and relaxed”. Responses are rated on a 5-point Likert-type rating scale (1=strongly disagree to 5=strongly agree), and are summed to attain a total score of between 18 and 90. Pallant (2000) reported the findings of two studies that demonstrated the PCOISS-18 to have good internal consistency (Cronbach alpha = .92 and .90) as well as incremental validity over other measures of control (Pallant, 2000). A shorter version of the scale was subsequently developed (PCOISS-12) (Pallant, 2006) and was used in the present study. The PCOISS-12 uses a 10-point Likert-type rating scale (1=strongly disagree to 10=strongly agree), in order to allow more potential for variability in scores (Pallant, 2006). Scores on the PCOISS-12 were obtained by adding all items, and range from a low perceived control score of 12 to a high perceived control score of 120. The PCOISS-12 correlates very strongly with the full 18-item version (r=.98), and demonstrates good psychometric properties. The internal consistency of the PCOISS-12 is good (Cronbach alpha = .90, .87) (Pallant, 2006). The PCOISS-12 was found to have a Cronbach’s alpha coefficient of .91 in the present study.

**Generalized self-efficacy. Generalized Self-Efficacy Scale (GSES).** The GSES was developed by Schwarzer (1994). This 10-item scale was designed to measure respondents’ beliefs in their ability to tackle new or difficult situations, and to deal with associated obstacles or setbacks. A four-point scale was used to rate statements such as, “I can always manage to solve difficult problems if I try hard enough”, “When I am confronted with a problem, I can usually find several solutions”. Responses range from 1=strongly disagree to 4=strongly agree. Scores for each item are added to give a total score that can range from 10 to 40. Higher scores reflect higher levels of generalized self-efficacy. Schwarzer (1992) reports high internal consistency, with Cronbach’s
alphas ranging from .82 to .93. Concurrent validity is shown in correlations between the GSES and other measures such as self-esteem internal control beliefs, optimism, pessimism, general anxiety, and shyness (Schwarzer, 1992). Despite the different anchor points used in the present study, the internal consistency of the scale still showed a Cronbach alpha coefficient (of .87), which is consistent with those reported in other studies.

Perfectionism: The Multidimensional Perfectionism Scale (MPS) (Hewitt & Flett, 1989; 1991b; Hewitt, Flett, Turnbull, Donovan, & Mikail, 1991). (See Appendix C). The MPS is a 45-item scale that measures three subscales of perfectionism: Self-oriented, other-oriented and socially-prescribed perfectionism. Only two subscales were used in the present study – self-oriented perfectionism, (which relates to unrealistic standards and perfectionistic motivation for the self) and socially-prescribed perfectionism (the belief that significant others expect oneself to be perfect) - resulting in a thirty-item scale. Examples of items for self-oriented perfectionism are “I strive to be as perfect as I can be”, and “I set very high standards for myself”. Examples of items for socially-prescribed perfectionism are “The people around me expect me to succeed at everything I do”, and “Although they may not show it, other people get very upset with me when I slip up”. Items are rated on a seven-point Likert-type rating scale where 1=disagree and 7=agree. Items 4, 5, 7, 14, 18, 22, 24, 25, and 30 are reverse scored. Scores were obtained by summing the items for each of the two subscales. Higher scores indicate greater levels of perfectionism.

Research has corroborated that the dimensions of the MPS have an adequate degree of reliability and validity, and are relatively free from response biases (Hewitt & Flett, 1991a; 1991b). Specifically, studies have shown that the MPS subscales have adequate internal consistency in clinical samples, with respective alpha coefficients of .88 and .81 for self-oriented and socially-prescribed perfectionism in a sample of 263 psychiatric patients (Hewitt & Flett, 1991b). The MPS also has acceptable levels of temporal stability in non-clinical samples (e.g., .88 and .75 for self-oriented- and socially-prescribed perfectionism respectively) (Hewitt & Flett, 1991b). In addition, Hewitt et al. (1991) found socially-prescribed perfectionism to be associated significantly with the subscales (in the Frost Multidimensional Perfectionism Scale) of parental expectations and parental criticism. Self-oriented perfectionism was correlated significantly with all measures that tapped into high standards for the self (Hewitt et al.,
In the present study the Cronbach alpha coefficients for the self-oriented perfectionism subscale and the socially-prescribed perfectionism subscale were .90 and .85 respectively.

**Fear of negative evaluation: The Brief-Fear of Negative Evaluation Scale (Brief-FNE).** The Brief-FNE is a 12-item scale that measures the extent to which people feel apprehensive at the prospect of being evaluated negatively (Leary, 1983). Participants were asked to “…indicate how characteristic each statement is of them (from 1= not at all characteristic of me to 5= extremely characteristic of me). Leary (1983) found that the Brief-FNE items correlated quite highly ($r = .96$, $p < .0001$) with the original 30-item scale (developed by Watson and Friend, 1969). Reliability for the Brief-FNE was also found to be quite high (Cronbach’s alpha=.90), comparing favourably to the obtained reliability coefficient of .92 for the 30-item FNE. A 4-week test-retest reliability coefficient of .75 was reported by Leary (1983), which also compares favourably to Watson and Friend’s reported test-retest coefficient of .68 for the 30-item scale. The Brief-FNE has also shown expected relationships with other measures: (a) The Social Avoidance and Distress Scale (SAD) (Watson & Friend 1969) - SAD-anxiety subscale, +35; SAD-avoidance subscale, +19 and (b) the Interaction Anxiousness Scale +.32 (all probabilities <.05) (reported in Leary 1983). In the present study the Cronbach alpha coefficient for the Brief-FNE was .91.

**Ratings of antenatal depression and anxiety.** Two questions are asked of respondents to assess antenatal mood, with ratings given on a 10-point rating scale: (1) “Did you feel miserable or depressed during your pregnancy?” (1=not at all miserable or depressed to 10=very miserable or depressed). (2) “Did you feel tense or anxious during your pregnancy?” (1=not at all tense or anxious to 10=very tense or anxious).

**Quality of relationship with partner before baby.** A single item rating is used to assess women’s relationship quality before the birth of her baby. This item states, “please rate the quality of your relationship before your baby was born”. A ten-point Likert-type rating scale was used where 1=constant friction or relationship breaking down and 10=close, warm relationship. These end points were derived from questions used in Cooper et al. (1996).
2.4 Procedure

Prior to undertaking this research, ethical approval was obtained from the Swinburne University School of Social and Behavioural Sciences Research Ethics Committee. To attain the maximum sample size within the allocated time, anonymity was imperative, which meant that ethical issues pertaining to confidentiality were not relevant in this questionnaire study. A major consideration in the ethics of the study was that of providing information on resources women could access if they required help. To this end, the questionnaire was accompanied by a final page outlining resources such as postnatal associations and crisis lines (See Appendix B).

A convenience sample was obtained in Melbourne, Australia, by inviting primiparous women to voluntarily participate in this study. Data collection was conducted over a period of approximately fifteen months. The study was entitled “Factors associated with first-time mothers’ experience of motherhood”. Information posters (see Appendix A), along with copies of the questionnaires (with reply paid envelopes) (See Appendix B), were placed in maternal and child health centres, mothers’ groups, and doctors’ waiting rooms (See Appendix A). Women were invited to complete the questionnaires, either by way of sighting the posters and taking a questionnaire, or by way of direct invitation from a midwife or doctor. Completed questionnaires were sent via reply-paid post to Swinburne University. There was no record of the way in which women received the questionnaires as participation was anonymous. Due to the way in which questionnaires were distributed (i.e., via midwives and medical practitioners) it was not possible to ascertain the response rate. In other words, it was not clear how many of the questionnaires sent to these facilities were in fact passed on to potential respondents, and therefore what proportion of women responded.

2.5 Statistical analyses

A number of data checks were undertaken prior to analyses being conducted. As recommended by Tabachnick and Fidell (2001), these procedures were undertaken to ensure the quality and accuracy of the data file and to check that the data itself was suitable for the planned analyses.

The following checklist from Tabachnick & Fidell (2001) was used as a framework for this preliminary inspection of the data set:
1. Inspection of univariate descriptive statistics for accuracy of input.
   (a) Out-of-range values
   (b) Plausible means and standard deviations

2. Evaluation of amount and distribution of missing data.

3. Identification of non-normal variables.
   (a) Checking skewness and kurtosis, probability plots
   (b) Transforming variables if necessary

4. Identification of and attendance to univariate outliers.

5. Checking pairwise plots for nonlinearity and heteroscedasticity, where appropriate.

The following procedures, recommended by Tabachnick and Fidell (2001), were implemented:

(a) Each questionnaire was inspected prior to data entry to check for the presence of missing data and for any indication of inappropriate response patterns. Questionnaires with excessive amounts of missing data or with clear indicators of inappropriate responses (e.g., responding yes to every item in a scale with a mix of positively and negatively worded items) were assessed for removal from the data set. This occurred in only one case, whereby it was clear by the excessive amount of non-completion of items that the questionnaire was not viable for inclusion.

(b) Once the data were entered into SPSS, a number of accuracy checks were conducted. Frequency distributions were obtained for each item to check for out-of-range responses. Mean scores and standard deviations for each item and scale were also obtained and checked for plausibility. Formulae for the reversal of items and the calculation of scale total scores were also checked for accuracy.

(c) A number of graphical and statistical procedures were then used to check the distribution of scores on each of the items and scales. These included the generation of histograms, box-and-whisker plots, normal probability plots, and the calculations of such statistics as skewness and kurtosis. In addition to providing information on the
overall pattern of the distribution of scores, these procedures also allowed for the
detection of extreme scores or outliers at either end of the distributions. Where
distributions were found to be skewed, and assumptions of normality were not met,
non-parametric techniques were used. Histograms for all scales are presented in
Appendix D).
CHAPTER 3: RESULTS

3.1 Participant characteristics

Participants ranged in age from 18 to 44 years, with a mean age of 32 years ($SD=4.6$). By way of comparison, the mean age of primiparous women giving birth in Victoria in 2004 was 29.4 (Riley, Davey, & King, 2005). It is noteworthy with respect to generalisability of these findings, that the average maternal age in this study is higher than the State’s average. The age of women’s babies at the time of completing the questionnaire ranged from 6 weeks to 6 months, with a mean age of 13 weeks ($SD=5.0$). The majority of women (94%) were married ($n=248$) or in a de facto relationship ($n=59$), with 9 women (2.8%) in a non-cohabiting relationship, 5 women (1.5%) who were single, 2 women (0.6%) who were divorced, and 1 woman (0.3%) who was widowed. In relation to educational level, 103 women (31.9%) reported having had no tertiary education, 107 women (33.1%) reported having completed undergraduate university degrees, and 113 women (34.8%) reported having completed postgraduate university degrees. It is evident that the sample population is somewhat skewed towards educated women, which is not representative of the general population, and is worthy of consideration with respect to generalisability of these findings. Generalisability is discussed in Section 4.2. Obstetric characteristics of the sample are presented in Appendix D.

3.2 Outline of the results and associated analyses used

The results are divided into five sections, each with a corresponding title to describe the broad objective of the section. Outlined below are these section titles, and brief descriptions of each section.

(1) **Anxiety and Stress in the Postpartum: Is there more to postnatal distress than depression?**

This section focuses on the outcome measures of the present study, addressing the arguments presented in Section 1.2 regarding an expanded conceptualization of postnatal distress to include not only depression, but anxiety and stress. The outcome
measures are explored, and cross classifications between the DASS-21 and the EPDS are presented to reflect the prevalence of depression, anxiety and stress in the present sample. The purpose of this section is to reflect the extent to which anxious and stressed women might have been overlooked if depression had been the sole criterion for distress (See Section 3.3). The findings of this section were published by Miller, Pallant and Negri (2006) (See Appendix E).

(2) Development of two measures of control in a postpartum population

As outlined in Section 1.6, (also, see Section 1.8.4.1), control was proposed as a central concept of relevance to postnatal women. This section covers the development of two control-related scales designed by the author. Items generated to tap into (a) women’s perceptions of control and order in the postpartum, and (b) women’s general desire for control and order, were assessed for their underlying structure using principal components analysis. (See Section 3.4).

(3) Differences between distressed and non-distressed women on sources of stress and vulnerability factors

Women were classified into either the distressed group (i.e., at least one positive classification on DASS-depression, -anxiety, or –stress scales), or the non-distressed group (i.e., no positive classification on the DASS-depression, -anxiety, or –stress scales). This section examines whether there were significant differences in scores on the hypothesized predictor variables (both sources of stress and vulnerability factors) for distressed versus non-distressed women. (See Section 3.5).

(4) Testing a cognitive vulnerability-stress model of postnatal distress

This section assesses the extent to which multiple factors (both sources of stress and vulnerability factors) operate within a model to predict postnatal distress. Only factors that were found in the previous section (Section 3.5) to significantly differ between distressed and non-distressed women, were selected for use in multivariate analyses in this section. (See Section 3.6).
Differences between anxious-depressed women and their depressed-only or anxious and/or stressed counterparts

This section presents the prevalence of comorbid classifications, with primary interest being the sub-group of women who had symptoms of both anxiety and depression (anxious-depression) (See Section 1.2.4.1). Three groups of women are generated (depressed-only, anxious-depressed, and anxious and/or stressed). Differences between the three groups are examined with respect to cognitive measures of interest (well-being measures, sources of stress, and vulnerability factors). Findings are presented regarding the extent to which scores on each variable differed for the anxious-depressed group compared to the other two groups. (See Section 3.7).

3.3 Anxiety and stress in the postpartum: Is there more to postnatal distress than depression?

3.3.1 Overview

The present study proposed that in order to fully diagnose and treat women in the postpartum, an extended classification over and above that of postnatal depression needs to be considered. To this end, the present study used the Edinburgh Postnatal Depression Scale (EPDS: Cox, Holden, & Sagovsky, 1987) in combination with the Depression Anxiety Stress Scales (DASS: S.H. Lovibond & P.F. Lovibond, 1995) to measure postnatal distress. Given the potential ramifications of maternal distress for the mothers themselves, their infants and their relationships, the present study considered mild symptoms of distress to be of clinical importance.

Results reflect the prevalence of depression, anxiety and stress in the present sample, and elucidate the extent to which women without classifications of depression, might have been overlooked despite being classified as anxious and/or stressed. Due to the extreme positive skew of the outcome measures (see histograms in Appendix D), categorical data are used (i.e., numbers and percentages of women who attained classifications on depression, anxiety or stress). Descriptive and psychometric data are provided, as well as a comparison of DASS mean scores found in the present sample to normative DASS data.
3.3.2 Descriptive and psychometric data for postnatal outcome measures

Descriptive and psychometric data for postnatal outcome measures are presented in Table 1. With the exception of maternal role satisfaction, which is a single item Likert-type rating, all outcome measures are scales, with means and standard deviations provided. All scales show good internal consistency with Cronbach alpha values above .7.

Table 1

Descriptive and psychometric data for postnatal outcome measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Number of items</th>
<th>Possible range</th>
<th>Actual range</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPDS</td>
<td>320</td>
<td>6.84</td>
<td>4.83</td>
<td>10</td>
<td>0-30</td>
<td>0-25</td>
<td>.88</td>
</tr>
<tr>
<td>DASS-Depression</td>
<td>323</td>
<td>5.10</td>
<td>6.36</td>
<td>7</td>
<td>0-42</td>
<td>0-32</td>
<td>.84</td>
</tr>
<tr>
<td>DASS-Anxiety</td>
<td>323</td>
<td>3.33</td>
<td>5.30</td>
<td>7</td>
<td>0-42</td>
<td>0-30</td>
<td>.77</td>
</tr>
<tr>
<td>DASS-Stress</td>
<td>324</td>
<td>10.36</td>
<td>8.10</td>
<td>7</td>
<td>0-42</td>
<td>0-40</td>
<td>.86</td>
</tr>
</tbody>
</table>

Note. EPDS=Edinburgh Postnatal Depression Scale, DASS=Depression Anxiety Stress Scales.

3.3.3 Comparison with normative DASS data

The use of general depression measures with postnatal women has been criticized in the past because of the inclusion of items relating to common experiences of women in the postpartum period which may serve to artificially inflate their scores. The DASS-21 was used because somatic items that might otherwise reflect ‘normal’ symptoms of postnatal life do not appear in it.

Mean scores obtained in this study were compared with normative data provided in the DASS manual for women in general. All three scales – depression, anxiety, and stress – yielded lower means than the normative data reported by the DASS authors (S.H. Lovibond & P.F. Lovibond, 1995). It should be noted that the age range of women in the present study was 18 to 44 years, whereas the age range for the DASS normative sample was 17-69 years.
Table 2
Comparison of DASS scores with normative results

<table>
<thead>
<tr>
<th></th>
<th>Present study (n=325)</th>
<th>Normative Data (n=1870)*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>DASS-Depression</td>
<td>5.10</td>
<td>6.4</td>
</tr>
<tr>
<td>DASS-Anxiety</td>
<td>3.33</td>
<td>5.3</td>
</tr>
<tr>
<td>DASS-Stress</td>
<td>10</td>
<td>8.1</td>
</tr>
</tbody>
</table>


Note. DASS=Depression Anxiety Stress Scales.

3.3.4 Prevalence of depression according to the EPDS and the DASS

In the present sample of postnatal women (N=325), the mean score on the EPDS was 6.94 (SD=4.8). The EPDS identified 36 women (11.3%) to have a score above the commonly-recommended cut-off of 12 (Cox et al., 1987), indicating that these 36 women were likely to be depressed. However, using a more sensitive cut-off of 9 (Murray & Carothers, 1990; Zelkowitz & Milet, 1995) 80 women (25%), were identified as likely to be depressed. From this point in the results section, women identified as likely to be depressed using a cut-off of over 9 on the EPDS, will be referred to as likely depressed. Those women scoring 9 or less on the EPDS will be referred to as unlikely depressed.

Consistent with common clinical practice, additional information is required to assess the severity of depression for the women identified as likely depressed on the EPDS. In this study the DASS-Depression scale was used for this purpose. The recommended cut-offs in the DASS manual (S.H. Lovibond & P.F. Lovibond, 1995) were utilized resulting in five severity categories: normal, mild, moderate, severe, and extremely severe. Women scoring in the normal category on depression were referred to from this point on as non-depressed, and women scoring in the mild, moderate, severe and extremely severe categories were referred to as depressed. On the DASS-21, the number and percentage of women identified in this sample as depressed was 61 (19%).
An exploration was conducted of the two depression measures in terms of cross classifications. These findings are presented in Figure 5.

**Figure 5.** DASS-21 classifications for women identified as likely and not likely depressed on the EPDS.

### 3.3.5 Prevalence of postnatal distress according to the DASS-21 and the EPDS

The present study proposed a broader classification for assessing postnatal distress, over and above that of the usual focus of depression. To this end, the DASS-21 was used to assess the severity levels of not only depression, but of anxiety and stress as well. According to the recommended cut-offs in the DASS manual (S.H. Lovibond & P.F. Lovibond, 1995), scores were classified into severity categories of normal, mild, moderate, severe, and extremely severe, with respect to depression, anxiety and stress. Women who scored in the normal range on depression, anxiety or stress, are referred to here as non-depressed, non-anxious and non-stressed respectively. Women who scored in the mild to extremely severe ranges, were referred to as depressed, anxious or stressed respectively. It should be noted that although the terms ‘depressed’, ‘anxious’, and ‘stressed’ are used to reflect classifications on the DASS,
these terms do not confirm clinical diagnoses that might otherwise be determined using interview and DSM criteria.

The first step was to investigate the 80 women who were identified by the EPDS as likely depressed, and to present the corresponding DASS classifications for this group. Figure 5 presents the typical clinical pathway, whereby once the 80 women had been identified as being likely candidates for depression (on the EPDS), these women would have been assessed further. According to the DASS-21, 46 women were found to be depressed, and 34 were not. Applying the broader criteria of anxiety and stress, using the DASS-21, it was revealed that of the 34 women identified by the EPDS as likely depressed, but not corroborated by the DASS-depression scale as depressed, 10 women were anxious, and 5 women were stressed. Nineteen women received no classification on the DASS-21 (see Figure 5). The EPDS scores for these 19 women are presented in Appendix D. Eighteen of these women scored between 10 and 12 on the EPDS. This means that these women’s scores fall below the more commonly used clinical cut-off of over 12. One woman scored 16 on the EPDS. The items endorsed by this individual woman were inspected for any obvious anomalies (e.g., chunks of missing DASS data or data entry error on specific items), but none were found.

The next step was to investigate the prevalence of depression, anxiety and stress for the total sample, using the DASS-21. Women who scored in the mild, moderate, severe and extremely severe categories on at least one DASS scale (i.e., on depression, anxiety, or stress) were considered to be postnatally-distressed. Using this criterion, 94 women (29%) in the total sample were postnatally-distressed. Figure 6 presents the number and percentages of women who were depressed, anxious and stressed in the total sample. It should be noted when interpreting Figure 6 that comorbid classifications are subsumed within this diagram whereby depression trumps anxiety, and anxiety trumps stress. In other words, some of the depressed women had classifications of anxiety, but were denoted as ‘depressed’. Similarly, some of the anxious women had classifications of stress but were denoted as ‘anxious’. The women denoted as ‘stressed’ had classifications of stress only. Comorbid classifications are disentangled further in Table 18 in Section 3.7.2.
Figure 6. Classifications of women on the DASS-21.

According to the DASS-21, this finding reveals that an additional 33 women (10%) over and above the 61 women (19%) found to be depressed in the total sample, were postnatally distressed (i.e., with classifications of anxiety and/or stress). In other words, had depression been the only criterion for which the present sample had been assessed, 33 distressed women (a further 10% of the total sample) would have been missed using the DASS-depression scale alone.

Returning to the EPDS classifications, of the 80 women identified by the EPDS as likely depressed, 46 women (58%) were correspondingly identified as depressed using the DASS-depression scale. However of these 80 EPDS-identified women, 15 (19%) were not corroborated by the DASS-21 as being depressed, which may have resulted in no further assessment if depression had been the sole criterion. With the inclusion of the DASS-anxiety and –stress scales, these 15 distressed women were able to be identified, whereby 10 women were found to be anxious, and 5 women were found to be stressed. Of the 240 women classified by the EPDS as not likely to be depressed, the DASS-21 revealed that 14 women (6%) were in fact depressed. Similarly, of the 240 women identified by the EPDS as not likely to be depressed, 8 women (3%) were anxious, and 10 women (4%) were stressed. These findings indicate that despite the sensitive EPDS cut-off of over 9, 14 depressed women were not identified by the EPDS as likely to be depressed, and 18 women who were postnatally...
distressed would not have been assessed further, had the EPDS been the initial screening tool used. With respect to the presence of anxiety in the total sample, 41 women (13%) had symptoms of anxiety either in isolation or in combination with depression and/or stress. This finding further supports the notion of including anxiety in the assessment of postnatal women.

3.3.6 Discussion

The present study proposed a broader classification for postnatal distress, to include measures of not only depression, but of anxiety and stress as well. Some authors have suggested that many women experience distress in the postpartum that is potentially missed using the criteria for depression alone (Fisher et al., 2002; Matthey et al., 2003). These authors have stated that it is incorrect to conclude that women are functioning well just because they do not fit the criteria for depression. This notion is particularly relevant in light of the potential adverse consequences of untreated distress in new mothers at this critical time.

Applying a broader conceptualization of postnatal distress in the present study, 94 women (29% of the total sample) were found to have at least one classification of depression, anxiety or stress, in the mild, moderate, severe or extremely severe categories on the DASS-21 (S.H. Lovibond & P.F. Lovibond, 1995). The EPDS identified 61 of the 94 distressed women as likely depressed, although according to the DASS-21, 15 of these women were not depressed, but were rather anxious and/or stressed. As is common practice with the use of the EPDS as a screening tool, an index of the severity of depression is required. However, in practice, if a depression scale (in this case the DASS-depression scale) had been the only measure used to assess the severity of the 80 EPDS-identified women, these 15 non-depressed – but clearly, distressed - women would have potentially been overlooked for further investigation and assistance.

The EPDS did not identify 14 women (4%) who were found by the DASS-21 to have mild and moderate symptoms of depression. This is surprising given the sensitive cut-off (of over 9) that was used on the EPDS. However, with the capacity of the DASS-21 to detect mild cases of depression (unconfounded by normal concomitants of the postpartum), these women, in practice, could have been attended to, and followed up for worsening symptomatology by the application of the DASS-21 over time. Of
more concern, was that the EPDS, as a screening tool, did not identify 18 women (6%) who were distressed (i.e., anxious and/or stressed on the DASS-21). Although the EPDS was not designed to detect anxiety and stress, the implication for these 18 women is that in practice, they could ‘fall through the cracks’ due to an over-reliance on depression being the marker for distress in the postpartum. Taken together, the findings of this study demonstrate that a total of 33 women (10% of the total sample) might have been overlooked if depression had been the sole marker upon which postnatal distress was determined.

With respect to the 19 women who scored above the cut-off of 9 on the EPDS, but received no classification on the DASS, 18 of these women scored between 10 and 12 on the EPDS, which are scores that fall below the more commonly recommended cut-off score of over 12 for clinical populations (Cox et al., 1987). In clinical practice, these women would generally not have been referred for clinical follow-up with scores below this cut-off. The aim of the present study was to increase sensitivity by using a lower cut-off score (of over 9) to optimize correctly classifying women with mild symptoms in a community sample (see Cox, et al., 1987; Harris et al., 1989; Murray & Carothers, 1990). If the more traditional cut-off of 12 had been used in the present study, these 18 women would have been classified as non-depressed by both the EPDS and the DASS. One woman scored 16 on the EPDS, but received no classification on the DASS. This finding may be a false positive. However, one false positive (which presumably would be followed up by clinical interview in practice) is less of a clinical concern than the occurrence of false negatives (Pope, 2000).

In summary, these findings support the utility of the DASS-21 in detecting women with mild to extremely severe symptoms of depression, anxiety and stress. As confirmed by the research data of S.H. Lovibond & P.F. Lovibond (1995), differences between normal subjects and clinically disturbed patients in their experiences of depression, anxiety and stress, are essentially differences of degree. It appears that the DASS-21 could be a useful tool to accompany the EPDS in measuring the severity of a broader spectrum of distress that includes anxiety and stress as well as depression.
3.4 Development of two measures of control in a postpartum population

3.4.1 Overview

A central theme in the present study is that of control. Control (or lack of it) has been proposed to have relevance to the postpartum period. First, loss of control and order following the birth of a baby has been proposed to be a source of stress within the cognitive vulnerability-stress model. Second, an intrinsic motivation or desire for control has been posited to render women vulnerable to postnatal distress, to the extent that the demands of new motherhood prohibit women’s capacities to meet their expectations of desires for control and order (a vulnerability factor). This section explores two sets of items that were generated from themes that have emerged in clinical practice with postnatal women. One set of items was generated to tap into the extent to which women perceived a loss of control and order in the postpartum. The other set of items was generated to tap into women’s general desire or need for control and order.

The items relevant to each proposed measure of control, were subjected to principal components analysis in order to explore their underlying structure. The number of factors to be retained was guided by three decision rules: (1) Kaiser’s criterion (eigenvalues above 1), (2) inspection of the screeplot, and (3) the use of Horn’s (1965) parallel analysis. The reliability of the two resulting scales, was assessed using Cronbach alpha coefficients. Finally, bivariate correlations were conducted to determine the distinctiveness of each scale.

3.4.2 Perceptions of control and order

It was hypothesized that following the birth of a baby, women’s levels of control and order would be compromised, and that this loss of control and order could therefore be a risk factor (i.e., a source of stress) for postnatal distress. In order to measure women’s perceived levels of control and order in the postpartum, a set of 11 items were generated (based on clinical reports to the author). Responses were rated on a 5-point rating scale (1=not at all to 5=very much so), in relation to the extent to which women perceived each statement to be true of them at the moment. Table 3 provides summary information for each item.
Table 3

Descriptive statistics for items proposed to measure perceived levels of control and order

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>At the moment:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I have a predictable routine</td>
<td>325</td>
<td>2.77</td>
<td>1.12</td>
</tr>
<tr>
<td>2. I feel disorganized</td>
<td>325</td>
<td>3.23</td>
<td>1.13</td>
</tr>
<tr>
<td>3. I mostly have to go with the flow</td>
<td>325</td>
<td>2.33</td>
<td>0.99</td>
</tr>
<tr>
<td>4. I feel in control</td>
<td>324</td>
<td>3.31</td>
<td>0.91</td>
</tr>
<tr>
<td>5. I am able to go about things in a systematic way</td>
<td>325</td>
<td>3.07</td>
<td>0.95</td>
</tr>
<tr>
<td>6. Things are going smoothly</td>
<td>324</td>
<td>3.54</td>
<td>0.88</td>
</tr>
<tr>
<td>7. I am able to get most things done the way I like them to be done</td>
<td>324</td>
<td>3.34</td>
<td>0.96</td>
</tr>
<tr>
<td>8. I am able to achieve my goals for the day (most of the time)</td>
<td>325</td>
<td>3.25</td>
<td>0.99</td>
</tr>
<tr>
<td>9. I can never seem to finish one task before having to move on the next one</td>
<td>325</td>
<td>3.11</td>
<td>1.02</td>
</tr>
<tr>
<td>10. My environment is always neat and ordered</td>
<td>325</td>
<td>2.94</td>
<td>1.05</td>
</tr>
<tr>
<td>11. I do most things myself rather than relying on other people</td>
<td>325</td>
<td>3.73</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Before analyses with outcome measures could be explored, the underlying structure of the 11 items was assessed using principal components analysis. Three factors were found with eigenvalues greater than 1, explaining 42%, 11% and 9% of the variance, respectively. All items loaded above .49, on the first factor extracted, with the exception of Items 11 and 3. Item 11 did not load on the first factor, but loaded (.730) on the second factor, and (.372) on the third factor. Item 3 loaded (.431) on the first factor, but loaded higher on the second (-.496) and third (.620) factors. Appendix D presents a table of these findings. These findings suggested that Items 11 and 3 were measuring a different construct to that of the items that loaded on Factor 1. Inspection of the scree plot (see Appendix D) provided support for the retention of one factor. Parallel analysis was used to verify the number of components to retain (Horn, 1965). The size of eigenvalues obtained from the principal components analysis were compared with those obtained from a randomly generated data set of the same size. This technique confirmed the retention of one factor.
Items 11 and 3 were then removed from the item pool, and another principal components analysis was conducted on the remaining nine items. This resulted in one factor with an eigenvalue exceeding 1, explaining 49% of the variance. All items loaded on this factor above .49. Table 4 presents the loadings of the nine items.

Table 4

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. I am able to get most things done the way I like them to be done</td>
<td>.820</td>
</tr>
<tr>
<td>4. I feel in control</td>
<td>.775</td>
</tr>
<tr>
<td>8. I am able to achieve my goals for the day (most of the time)</td>
<td>.762</td>
</tr>
<tr>
<td>6. Things are going smoothly</td>
<td>.746</td>
</tr>
<tr>
<td>5. I am able to go about things in a systematic way</td>
<td>.742</td>
</tr>
<tr>
<td>1. I have a predictable routine</td>
<td>.693</td>
</tr>
<tr>
<td>2. I feel disorganized</td>
<td>.655</td>
</tr>
<tr>
<td>10. My environment is always neat and ordered</td>
<td>.548</td>
</tr>
<tr>
<td>9. I can never seem to finish one task before having to move on the next one</td>
<td>.494</td>
</tr>
</tbody>
</table>

Cronbach’s alpha of .86 on the revised nine-item pool, supported the internal consistency of the scale. This resulting nine-item scale was called the *Perception of Control and Order Scale (PerCOS)*, which measured participants’ perceived levels of current control and order in the postpartum. Scores for PerCOS ranged from 12 to 44 (with a possible range of 9 to 45). Scores approximated a normal distribution (see Appendix D), with no evidence of skewness or kurtosis (*M*=28.53, *SD*=6.23). This indicates that when using PerCOS as a dependent variable, parametric tests are appropriate.

### 3.4.3 General desire for control and order

It was hypothesized that women who have a high desire for control and order, might be at risk for postnatal distress. In other words, a predisposing tendency to seek control and order (at a time when control and order is likely to be compromised), may create a vulnerability to postnatal distress. In order to measure women’s general desire
for control and order, a set of 11 items was generated that correspond in content to the items generated to measure (PerCOS). Women were asked to respond on a 5-point rating scale (1=not at all true of me to 5=very true of me), the extent to which they perceived each statement to be true of them in general. Table 5 presents summary information for each item.

Table 5
Descriptive statistics for items proposed to measure general desire for control and order

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>In general:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. It is very important to me to have a predictable routine in my life</td>
<td>325</td>
<td>3.39</td>
<td>1.16</td>
</tr>
<tr>
<td>2. I hate feeling disorganized</td>
<td>325</td>
<td>4.11</td>
<td>.96</td>
</tr>
<tr>
<td>3. When necessary, I can relax and just go with the flow</td>
<td>324</td>
<td>2.5</td>
<td>1.02</td>
</tr>
<tr>
<td>4. I like to be in control of my life</td>
<td>325</td>
<td>4.18</td>
<td>.84</td>
</tr>
<tr>
<td>5. I like to go about things in a systematic way</td>
<td>325</td>
<td>3.74</td>
<td>1.03</td>
</tr>
<tr>
<td>6. When things don’t go smoothly, I feel very uncomfortable</td>
<td>324</td>
<td>3.38</td>
<td>1.03</td>
</tr>
<tr>
<td>7. I am a person who has very clear ideas about the way things</td>
<td>324</td>
<td>3.67</td>
<td>1.03</td>
</tr>
<tr>
<td>should be done</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. If I can’t achieve my goals for the day, I feel like I’ve failed</td>
<td>325</td>
<td>2.86</td>
<td>1.13</td>
</tr>
<tr>
<td>9. I feel very frustrated if I can’t complete a task before moving on to the next one</td>
<td>325</td>
<td>2.87</td>
<td>1.12</td>
</tr>
<tr>
<td>10. It is very important to me that my environment is neat and ordered</td>
<td>324</td>
<td>3.66</td>
<td>1.10</td>
</tr>
<tr>
<td>11. I prefer to do most things myself than relying on other people to do them</td>
<td>324</td>
<td>3.95</td>
<td>1.03</td>
</tr>
</tbody>
</table>

A decision was made at the outset to remove the two items that had been removed from the PerCOS items (i.e., Items 3 and 11), in order to keep the two corresponding scales consistent. Before analyses with outcome measures could be explored, the items - designed to assess general desire for control and order - were subjected to principal components analysis to assess their underlying structure. Principal components analysis of the 9 resulting items revealed one factor with an
eigenvalue of greater than 1, explaining 45% of the variance. All items loaded on this factor at above .54. Inspection of the scree plot provided support for the existence of one factor (see Appendix D). Parallel analysis also confirmed the retention of one factor. Table 6 presents the loadings of the nine items.

Table 6  

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. I hate feeling disorganized</td>
<td>.757</td>
</tr>
<tr>
<td>5. I like to go about things in a systematic way</td>
<td>.744</td>
</tr>
<tr>
<td>1. It is very important to me to have a predictable routine in my life</td>
<td>.708</td>
</tr>
<tr>
<td>9. I feel very frustrated if I can’t complete a task before moving on to the next one</td>
<td>.674</td>
</tr>
<tr>
<td>4. I like to be in control of my life</td>
<td>.669</td>
</tr>
<tr>
<td>7. I am a person who has very clear ideas about the way things should be done</td>
<td>.642</td>
</tr>
<tr>
<td>10. It is very important to me that my environment is neat and ordered</td>
<td>.639</td>
</tr>
<tr>
<td>8. If I can’t achieve my goals for the day, I feel like I’ve failed</td>
<td>.627</td>
</tr>
<tr>
<td>6. When things don’t go smoothly, I feel very uncomfortable</td>
<td>.536</td>
</tr>
</tbody>
</table>

Cronbach’s alpha of .84 on the revised nine-item scale indicates that it has good internal consistency. This resulting nine-item scale, which appears to tap into participants’ levels of general desire for control and order was called the General Desire for Control and Order Scale (GeDCOS). Scores for GeDCOS showed a normal distribution (see Appendix D). Scores on GeDCOS ranged from 14 to 45 (with a possible range of 9 to 45), with a mean score of 31.88 (SD=6.25). Like PerCOS, these findings suggest that when using GeDCOS as a dependent variable, parametric tests may be appropriate.

3.4.4 Relationship between PerCOS and GeDCOS

In order to determine whether PerCOS and GeDCOS are tapping into different aspects of control (i.e., perception of current levels of control and order as opposed to general desire for control and order), each 9-item scale was correlated using Pearson product-moment correlation coefficient. No significant correlation was found between
the two variables ($r=.070$, $n=320$, $p=213$), suggesting that these scales are independent, and are measuring different aspects of control.

3.4.5 Discussion

One of the strongest motivators for individuals is to have a sense of control over their lives (Shapiro & Astin, 1998). Control is a critical variable in our health and well-being, with losses of control being commonly associated with negative outcomes such as depression, anxiety and stress (Burger, 1989, Barlow, 2000; Chorpita & Barlow, 1998; Rapee et al., 1996; Walker, 2001). Control can refer to the perceived outcome, or to the motivation for a desired outcome. Based on a cognitive-phenomenological model of stress and coping, the present study posited that new motherhood has the potential to pose demands upon women that could be appraised as taxing or exceeding their personal resources, manifesting as losses of control and order (the outcome) and resulting in affective disturbances. It was further posited that women whose control expectations (motivation for a desired outcome) were particularly high, would be at a heightened risk for postnatal distress.

The aim of the present section was to develop two measures of control that would tap into both the perceived outcome, and the motivation for a desired outcome. Based on the clinical reports of new mothers, two sets of items were generated, and subjected to exploratory factor analyses. The first set of items was intended to tap into the extent to which women perceived having control and order in the postpartum (the outcome), which was conceptualized as a potential source of stress. The second set of items was intended to measure women’s general desire for control and order (the motivation for a desired outcome) as a potential vulnerability factor. Using principal components analysis, two scales were verified. The Perception of Control and Order Scale (PerCOS), resulted in nine items that cover themes of current perceptions of predictability, routine, organization, feeling in control, things going smoothly, achieving daily goals, ordering of tasks, neatness, and order. The General Desire for Control and Order Scale (GeDCOS) was also a nine-item scale covering the same themes as PerCOS, but with an additional self-evaluative component that taps into expectations and feelings about needing to attain control and order, thereby assessing women’s general desire or need for control and order.
In summary, evidence in non-postpartum populations has revealed that psychological distress is linked to perceptions of losses of control (Rapee et al., 1996), as well as to excessively high desire for control (Burger, 1992). To the present author’s knowledge, there are no existing measures of perceived control or of desire for control that have been applied to postnatal populations. This is surprising given that the postpartum period holds the potential to reduce women’s levels of control and order, and to provide challenges to their high expectations or desire for control and order (Lamble & Morris, 1999; Milgrom et al., 1999). It was a central aim of the present study to develop measures that would tap into both women’s perceived levels of control and order, as well as their generalized desire for control and order. To this end, PerCOS and GeDCOS were developed. Having established the factor structure and internal consistency of PerCOS and GeDCOS in the present section, further analyses could then be conducted in order to determine whether these constructs were in fact sources of stress and vulnerability factors that might differ significantly between postnatally distressed women and non-postnatally distressed women. Section 3.4 examines the extent to which these two constructs did in fact differ between women who were postnatally distressed, and women who were not.

3.5 Differences between distressed and non-distressed women on sources of stress and vulnerability factors

3.5.1 Overview

Based on the cognitive vulnerability-stress theories of anxiety and depression, and the cognitive-phenomenological model of stress and coping, this section examines a number of proposed sources of stress and vulnerability factors hypothesized to be associated with postnatal distress. As identified in Section 3.3, 94 women were found to be postnatally distressed (i.e., with at least one classification on the DASS-21), and 230 women were not. This section presents findings in relation to the extent to which the proposed variables in the theoretical model (i.e., sources of stress and vulnerability factors) differentiated women who were distressed from women who were not.

The distributions of scores for the outcome measures were extremely positively skewed (see Appendix D), and attempted transformations proved unsuccessful. As the assumption of normality was violated, non-parametric statistical tests were therefore
required. Women were classified into either the *distressed* group (i.e., at least one positive classification on DASS-depression, -anxiety, or –stress scales), or the *non-distressed* group (i.e., no positive classification on the DASS-depression, -anxiety, or –stress scales). Mann-Whitney U tests (the non-parametric alternative to independent sample t-tests) were used to determine whether there were differences between the *distressed* and the *non-distressed* groups on each hypothesized variable in the theoretical model (i.e., postnatal well-being measures, measures of *sources of stress*, and *vulnerability factor* measures – including demographic variables). Given the number of repeated analyses conducted in this section it was decided to apply a more stringent significance level of .01 to control the overall Type 1 error rate (Field, 2005).

Descriptive and psychometric data are provided for all scales. Correlations were used to provide additional information in relation to perceived infant difficulty. A Chi-Square analysis was used to examine level of education in relation to postnatal distress. This analysis was done because education was measured in a non-continuous fashion, and therefore it had to be used as a categorical variable.

### 3.5.2 Postnatal well-being

Two measures of well-being were used in the present study: A single-item rating of *maternal role satisfaction*, and the Satisfaction with Life Scale (Diener et al., 1985). In general, it was predicted that *distressed* women (*n*=94) would score lower on these measures of well-being than women who were not *distressed* (*n*=230). Table 7 presents descriptive and psychometric data for postnatal well-being measures.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Number of items</th>
<th>Possible range</th>
<th>Actual range</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MRS</strong></td>
<td>324</td>
<td>8.48</td>
<td>1.6</td>
<td>1</td>
<td>1-10</td>
<td>2-10</td>
<td>-</td>
</tr>
<tr>
<td><strong>Satisfaction with life</strong></td>
<td>324</td>
<td>28.10</td>
<td>5.21</td>
<td>5</td>
<td>5-35</td>
<td>9-35</td>
<td>.87</td>
</tr>
</tbody>
</table>

*Note. MRS=Maternal role satisfaction, SL=Satisfaction with life.*
3.5.2.1 Maternal role satisfaction

Ratings of maternal role satisfaction ranged from 2-10 on a single-item, 10-point Likert-type rating scale. The end points of this item were 1=totally dissatisfied with your role as a mother to 10=totally satisfied. The majority of women reported high levels of maternal role satisfaction, with 299 women (92%) scoring from 7 to 10, and 25 women (8%) scoring from 2 to 6 on the 10 point scale. The mean score on this item was 8.48 (SD=1.60). Results of a Mann-Whitney U test revealed a significant difference between the distressed and non-distressed groups, with maternal role satisfaction being lower for the distressed group (mean rank=115.88) than the non-distressed group (mean rank=181.55; Z=-5.93, p<.001), as predicted. However, further exploration of the data, revealed that of the 94 women classified as distressed 64 (68%) still reported experiencing high levels of maternal role satisfaction (scores ranging from 8 to 10). This finding suggests that being postnatally distressed does not necessarily equate to a lack of maternal role satisfaction.

3.5.2.2 Satisfaction with life

Scores on the Satisfaction With Life Scale ranged from 9 to 35 (with a possible range of 5 to 35). The mean score on this scale was 28.08 (SD=5.21). Like the other outcome measures in the present study, the satisfaction with life scores showed a high skew (in a positive direction) (see Appendix D). Results of a Mann-Whitney U test revealed a significant difference between the distressed and non-distressed groups, as expected, with satisfaction with life scores being lower for the distressed group (mean rank=117.10) than, for the non-distressed group (mean rank=181.06; Z=-5.60, p<.001).

3.5.3 Sources of stress

The cognitive vulnerability-stress or diathesis-stress models state that stress activates a diathesis, which can transform the potential for characteristic ways of thinking (vulnerability) into negative affective states. This section provides the results pertaining to a number of proposed sources of stress in the postpartum. These sources of stress were hypothesized to differ for distressed women when compared to women who were not postnatally distressed. It was hypothesized that the demands of a new baby could contribute to a loss of control and order, to feelings of inadequacy as a
mother, and therefore to postnatal distress. This section is divided into cognitive sources of stress that relate to the central construct of control (i.e., perceptions of control and order, and parenting self-efficacy), and other sources of stress (that relate to women’s control perceptions at birth, perceived infant difficulty, stressful life events, perceived relationship quality, and social factors).

3.5.3.1 Cognitive sources of stress

Two cognitive measures were proposed within the cognitive vulnerability-stress model, that relate to women’s perceptions of control: Perception of control and order (as developed in Section 3.3), and parenting self-efficacy (adapted from Abidin, 1995). It was hypothesized that there would be differences between the distressed and non-distressed groups on perception of control and order and on parenting self-efficacy. Table 8 presents descriptive and psychometric data for cognitive sources of stress.

Table 8
Descriptive and psychometric data for cognitive sources of stress

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Number of items</th>
<th>Possible range</th>
<th>Actual range</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>PerCOS</td>
<td>322</td>
<td>28.53</td>
<td>6.23</td>
<td>9</td>
<td>9-45</td>
<td>12-44</td>
<td>.86</td>
</tr>
<tr>
<td>PSE</td>
<td>307</td>
<td>24.21</td>
<td>6.72</td>
<td>11</td>
<td>11-55</td>
<td>11-48</td>
<td>.84</td>
</tr>
</tbody>
</table>

*Note.* PerCOS=Perception of Control and Order Scale, PSE=Parenting Self-efficacy.

Perceptions of control and order.

It was hypothesized that the distressed group of women would have lower levels of perceived control and order than the non-distressed women. The Perception of Control and Order Scale (PerCOS) was used. Results of a Mann-Whitney U test revealed a significant difference between the two groups with lower scores on PerCOS found for the distressed group (mean rank=106.15) than for the non-distressed group (mean rank=183.38: Z=−6.77, p<.001).

Parenting self-efficacy

It was hypothesized that the distressed group would have lower levels of parenting self-efficacy (i.e., higher scores) than the non-distressed group. The Parenting
Competence subscale (from the PSI: Abidin, 1995) was used to measure new mother’s sense of competence or self-efficacy in relation to their role as parents (referred to in the present study as parenting self-efficacy). Results of a Mann-Whitney U test revealed a significant difference between these two groups. Higher scores reflect poorer levels of parenting self-efficacy (as this subscale comes from a larger set of subscales where the aggregated subscale scores form an indicator of stress, whereby high scores indicate the presence of a problem). The distressed group was found to have poorer parenting self-efficacy (mean rank=208.90) than the non-distressed group (mean rank=132.64: Z=-6.77, p<.001).

3.5.3.2 Other sources of stress

Birth-related factors

*Feeling out of control during birth.*

It was hypothesized that compared to the non-distressed group, the distressed group would have higher mean scores on ratings of feeling out of control during birth. Women were asked to rate on a 10-point Likert-type rating scale, the extent to which they felt out of control during their births. Scores ranged from 1 (not at all) to 10 (very much so). The mean score for this item was 4.30 (SD=3.20). Results of a Mann-Whitney U test revealed a significant difference between the distressed (mean rank=181.42) and non-distressed group (mean rank=149.08: Z=-2.91, p=.004) on feeling out of control during birth, revealing higher ratings of feeling out of control during birth for the distressed group than the non-distressed group.

Infant-related factors

* Ratings of infant difficulty.

It was predicted that distressed women would rate their infants as more difficult than non-distressed women. Women were asked to rate on a 10-point Likert-type rating scale, the extent to which they perceived their babies to be difficult in comparison to other babies. Scores ranged from 1 to 10, where low scores reflected infant ease, and high scores reflected infant difficulty. The mean score for this item was 3.67 (SD=2.2). Results of a Mann-Whitney U test revealed a significant difference between the
distressed group (mean rank=197.42) and the non-distressed group (mean rank=146.91: \( Z=-4.49, p<.001 \)) on ratings of infant difficulty. In other words, distressed women reported their babies to be more difficult (as compared to other babies) than non-distressed women.

**Correlations between ratings of infant difficulty and infant-related problems.**

Women were asked to indicate the extent to which they experienced the following infant-related problems: Colic/reflux, sleeping problems, excessive crying, eating problems, and ongoing health problems. Each problem was rated on a 4-point rating scale, labeled none, mild, moderate, and severe. In order to understand which infant-related factors were associated with ratings of infant difficulty, Spearman’s correlations were conducted between the scores on each baby-related problem, and ratings of infant difficulty. Table 9 presents these findings, revealing the most significantly correlated problem with ratings of infant difficulty to be sleeping problems, followed by excessive crying. It should be noted that low scores on ratings of infant difficulty reflect higher difficulty, whereas low scores on each infant-related problem reflect no problems or mild problems. This explains the negative correlations reflected in Table 9.

**Table 9**

*Spearman’s correlations between ratings of infant difficulty and infant-related problems*

<table>
<thead>
<tr>
<th>Problem</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleeping problems</td>
<td>-.600***</td>
</tr>
<tr>
<td>Excessive crying</td>
<td>-.551***</td>
</tr>
<tr>
<td>Colic/reflux</td>
<td>-.344***</td>
</tr>
<tr>
<td>Ongoing health problems</td>
<td>-.305***</td>
</tr>
<tr>
<td>Eating problems</td>
<td>-.214***</td>
</tr>
</tbody>
</table>

*Note. *\( p<.05. **p<.01. ***p<.001. \)*

**Life event factors**

*Appraisal of stressful life events: ratings of life-event stress.*

In line with the cognitive-phenomenological model of stress, it has been suggested that it is not the objective characteristics of an event that determines an
individual’s response to it, but rather the way in which the event is perceived. In the present study, women were asked to rate the extent to which they perceived a combination of listed life events to be stressful. This was a single item, rated on a 10-point Likert-type rating scale (1=not at all stressful to 10=extremely stressful), that immediately followed the section on the questionnaire that required women to tick whether they had experienced one or more stressful life events. This rating is referred to as ratings of life-event stress. Scores ranged from 1 to 10, with a mean score of 6.35 (SD=2.34). In order to determine whether there was a difference between the distressed and non-distressed groups of women on ratings of life-event stress, a Mann-Whitney U test was conducted. Based on a significance level of .01, results revealed a non-significant difference between the distressed group (mean rank=124.33) and the non-distressed group (mean rank=104.18: Z=-2.20, p=.028) on ratings of life-event stress.

Relationship factors

Quality of relationship with partner after baby.

It was hypothesized that poor quality relationships would be a source of stress in the postpartum, and would be associated with postnatal distress. Women were asked to rate the quality of their relationship after the birth of their babies. This single item was scored on a 10-point rating scale, and is referred to here as relationship quality after baby. Scores ranged from 1 to 10, with a mean score of 8.56 (SD=1.7). The end points for this item were 1=constant friction or relationship breaking down, and 10=close, warm relationship. Mann-Whitney U results revealed a significant difference, between the distressed and non-distressed groups, whereby the distressed group (mean rank=133.17) had lower ratings on relationship quality after baby than the non-distressed group (mean rank=168.90: Z=-3.289, p=.001).

Social Factors

Social support.

It was hypothesized that poor availability of social support would be a source of stress in the postpartum, and therefore predictive of postnatal distress. Social support was measured by the Maternity Social Support Scale (MSSS: Webster et al., 2000), which is a 6-item, validated scale to measure social factors relevant to the postpartum.
Results from a Mann-Whitney U test revealed a significant difference between the *distressed* group (mean rank=101.55) and the *non-distressed* group (mean rank=147.93: \( Z=-4.41, p<.001 \)), showing lower levels of social support reported by the *distressed* group than by the *non-distressed* group.

**Social judgements.**

One of the aims of the present study was to assess the clinically-reported phenomenon of criticism and judgement of others towards new mothers. Women were asked to rate (on a 10-point rating scale) the extent to which they felt criticized or judged by a number of proposed others (1=not at all to 10=very criticized or judged). Table 10 presents the mean scores (in descending order) of the ratings women provided for each person, or group of people.

**Table 10**

*Descriptive statistics for ratings of perceived criticism/judgement by significant others*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Min Score</th>
<th>Max Score</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother-in-law</td>
<td>284</td>
<td>1</td>
<td>10</td>
<td>4.73</td>
<td>2.92</td>
</tr>
<tr>
<td>Own mother</td>
<td>302</td>
<td>1</td>
<td>10</td>
<td>3.90</td>
<td>2.82</td>
</tr>
<tr>
<td>Partner’s family</td>
<td>288</td>
<td>1</td>
<td>10</td>
<td>3.77</td>
<td>2.62</td>
</tr>
<tr>
<td>Partner’s father</td>
<td>247</td>
<td>1</td>
<td>10</td>
<td>3.64</td>
<td>2.60</td>
</tr>
<tr>
<td>Own father</td>
<td>267</td>
<td>1</td>
<td>10</td>
<td>3.39</td>
<td>2.42</td>
</tr>
<tr>
<td>Partner</td>
<td>314</td>
<td>1</td>
<td>10</td>
<td>3.32</td>
<td>2.44</td>
</tr>
<tr>
<td>Other parents</td>
<td>230</td>
<td>1</td>
<td>10</td>
<td>3.17</td>
<td>2.14</td>
</tr>
<tr>
<td>Own family</td>
<td>305</td>
<td>1</td>
<td>10</td>
<td>3.16</td>
<td>2.28</td>
</tr>
</tbody>
</table>

In relation to family members, Table 10 reflects that new mothers reported their mothers-in-law as being the most critical/judgemental of them, followed by their own mothers, their partners’ families, their partners’ fathers, their own fathers, and their partners. Their own families were rated as less critical than other parents. Due to the commonly-reported phenomenon by new mothers of feeling criticized by others in relation to their mothering, further analyses were conducted to determine whether there were significant differences in ratings of criticism/judgement for *distressed* women compared to *non-distressed* women.
A series of Mann-Whitney U tests were conducted to determine whether the *distressed group* and *non-distressed* group differed on perceived criticism/judgement they experienced from each listed person or group of people (See Table 11). Once again, a more stringent significance level of .01 was used to determine significance. The only significant differences to exceed the more conservative alpha value were found for ratings of criticism/judgement relating to women’s own mothers, their partners, other parents, and their own families. Table 11 presents these findings.

Table 11

*Results of Mann-Whitney U tests to assess differences between distressed and non-distressed women according to people rated as critical/judgemental*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Z Score</th>
<th>Distressed group mean rank</th>
<th>Non-distressed group mean rank</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother-in-law</td>
<td>-1.57</td>
<td>154.30</td>
<td>137.63</td>
<td>.12</td>
</tr>
<tr>
<td>Own mother</td>
<td>-4.06</td>
<td>181.48</td>
<td>137.79</td>
<td>.001**</td>
</tr>
<tr>
<td>Partner’s family</td>
<td>-2.24</td>
<td>161.02</td>
<td>137.08</td>
<td>.025</td>
</tr>
<tr>
<td>Partner’s father</td>
<td>-1.25</td>
<td>132.62</td>
<td>120.39</td>
<td>.213</td>
</tr>
<tr>
<td>Own father</td>
<td>-1.91</td>
<td>147.69</td>
<td>128.25</td>
<td>.056</td>
</tr>
<tr>
<td>Partner</td>
<td>-2.93</td>
<td>179.79</td>
<td>147.51</td>
<td>.003**</td>
</tr>
<tr>
<td>Own family</td>
<td>-3.45</td>
<td>178.96</td>
<td>141.55</td>
<td>.001**</td>
</tr>
<tr>
<td>Other parents</td>
<td>-1.70</td>
<td>134.41</td>
<td>108.37</td>
<td>.007**</td>
</tr>
</tbody>
</table>

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

Of interest was the commonly reported phenomenon of the ‘interfering’ mother-in-law. Surprisingly, there was no significant difference between the *distressed* and *non-distressed* groups on perceived criticism/judgement from mothers-in-law, despite mothers-in-law receiving the highest mean score for ratings of criticism/judgement. However, further inspection of the data (see frequencies provided in Appendix D) revealed that of the 284 women who provided a rating for their mother-in-laws, 111 (39%) rated their mother-in-laws with scores from 6 to 10 (i.e., at the higher end of being critical/judgemental). Of the 302 women who provided a rating for their own mothers, 80 (26%) rated their mothers with score from 6 to 10 (i.e., at the higher end of being critical/judgemental), revealing that more women rated their mothers-in-law as
highly critical/judgemental than women who rated their own mothers as highly
critical/judgemental. This finding suggests that criticism/judgement from women’s
own mothers has significance to their distress, whereas criticism/judgement from their
mothers-in-law does not.

Participants were also asked to indicate which (motherhood-related) areas they
perceived feeling criticized or judged about. A list of these areas is presented in Table
12, with the corresponding numbers of women who endorsed them. The item most
frequently endorsed was the item relating to how women deal with their babies’ sleep
(52%).

Table 12
Numbers and percentages of women who endorse motherhood-related topics in relation
to perceived criticism/judgement from significant others

<table>
<thead>
<tr>
<th>Area</th>
<th>Numbers and percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>How I deal with my baby’s sleep</td>
<td>169 (52%)</td>
</tr>
<tr>
<td>Feeding my baby</td>
<td>146 (44.9%)</td>
</tr>
<tr>
<td>How I look</td>
<td>136 (41.8%)</td>
</tr>
<tr>
<td>How my house looks</td>
<td>132 (40.6%)</td>
</tr>
<tr>
<td>Going back to work</td>
<td>129 (39.7%)</td>
</tr>
<tr>
<td>My interactions with my child</td>
<td>92 (28.3%)</td>
</tr>
<tr>
<td>Childcare</td>
<td>70 (21.5%)</td>
</tr>
<tr>
<td>The birth of my baby</td>
<td>53 (16.3%)</td>
</tr>
</tbody>
</table>

An open-ended category was also provided for women to nominate additional
(motherhood-related) areas about which they felt judged or criticized. The aspects of
mothering that women reported in this open-ended category included feeling criticized
and judged about breastfeeding/not breastfeeding, how their babies look/behave,
managing their babies’ crying, etc. A complete list of these responses is provided in
Appendix D.

3.5.3.3 Summary of findings related to sources of stress

Of primary importance in the sources of stress section were the control variables
of perception of control and order and parenting self-efficacy. Scores on both of these
cognitive variables differed significantly for women who were postnatally distressed as
compared to women who were not. As predicted, these findings suggest that control perceptions are associated with postnatal distress. Distressed women, as compared to non-distressed women, were also found to report significantly higher levels of feeling out of control during birth, to rate their babies as significantly more difficult, to report significantly lower levels of relationship quality, and to report significantly lower levels of social support. In relation to perceived criticism/judgement from others, the distressed women rated their own mothers (but not mothers-in-law), their partners, their own families, and other parents as significantly more critical than non-distressed women. Other findings in this section revealed that women’s ratings of infant difficulty were most significantly correlated with sleeping problems and excessive crying.

3.5.4 Vulnerability factors

The cognitive vulnerability-stress model depicts the notion that new motherhood is a life event that has the potential to pose demands upon women that could be appraised as taxing or exceeding their personal resources, thereby resulting in distress. Stress may activate a diathesis, whereby vulnerability in women whose personal expectations or standards are particularly high, may be triggered to render them more susceptible to postnatal distress. This section provides the results regarding a number of proposed cognitive vulnerability factors and the extent to which these factors differentiate women who are postnatally distressed from women who are not. The section is divided into cognitive vulnerability factors relating to control and to individual characteristics, and other vulnerability factors relating to antenatal factors, relationship factors, and demographic factors.

3.5.4.1 Cognitive vulnerability factors

Based on the cognitive vulnerability-stress model, five cognitive measures were of interest in the present study, and were hypothesized to be vulnerability factors for women experiencing distress in the postpartum. Three of these cognitive measures relate to control: (a) the scale developed in Section 3.3 that measures women’s general desire for control and order (GeDCOS). (b) A validated scale to assess women’s levels of generalized self-efficacy (Schwarzer & Jerusalem 1995). (c) A validated scale to assess the extent to which women rated their capacity to control their internal states
The remaining two cognitive measures were considered to be individual characteristics that may be associated with postnatal distress. These two measures are validated scales for perfectionism (Hewitt & Flett, 1989, 1991b) and fear of negative evaluation (Leary, 1983). Table 13 presents the descriptive and psychometric data for the cognitive vulnerability factors in the present study.

Table 13
Descriptive and psychometric data for cognitive vulnerability factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>No. of items</th>
<th>Possible range</th>
<th>Actual range</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Desire for Control &amp; Order</td>
<td>320</td>
<td>31.88</td>
<td>6.25</td>
<td>9</td>
<td>9-45</td>
<td>14-45</td>
<td>.84</td>
</tr>
<tr>
<td>Generalized self-efficacy</td>
<td>322</td>
<td>31.42</td>
<td>4.66</td>
<td>10</td>
<td>10-40</td>
<td>15-40</td>
<td>.87</td>
</tr>
<tr>
<td>Perceived Control of Internal States</td>
<td>318</td>
<td>78.07</td>
<td>19.39</td>
<td>12</td>
<td>12-120</td>
<td>12-119</td>
<td>.91</td>
</tr>
<tr>
<td>MPS self-oriented perfectionism</td>
<td>318</td>
<td>64.80</td>
<td>16.50</td>
<td>15</td>
<td>15-105</td>
<td>27-104</td>
<td>.90</td>
</tr>
<tr>
<td>MPS socially-prescribed perfectionism</td>
<td>314</td>
<td>45.03</td>
<td>13.34</td>
<td>15</td>
<td>15-105</td>
<td>15-87</td>
<td>.85</td>
</tr>
<tr>
<td>Fear Negative Evaluation</td>
<td>317</td>
<td>37.09</td>
<td>9.92</td>
<td>12</td>
<td>12-60</td>
<td>15-60</td>
<td>.91</td>
</tr>
</tbody>
</table>

General desire for control and order.

It was hypothesized that distressed women would have higher scores on general desire for control and order than non-distressed women. The distribution of scores on this scale approximated normality (see Appendix D). Results of a Mann-Whitney U test revealed a significant difference between the distressed and non-distressed groups on general desire for control and order. As predicted, distressed women (mean
rank=190.40) were shown to have a higher general desire for control and order scores than non-distressed women (mean rank=149.01; Z=-3.63, p<.001).

**Generalized self-efficacy.**

It was hypothesized that distressed women would have lower levels of generalized self-efficacy than non-distressed women. The Generalized Self-Efficacy Scale (Schwarzer, 1992) was used in the present study. The distributions of scores on this scale approximated normality (see Appendix D). A Mann-Whitney U test revealed a significant difference between the distressed (mean rank=126.21) and non-distressed groups (mean rank=175.19; Z=-4.30, p<.001) on generalized self-efficacy, revealing poorer levels of generalized self-efficacy for distressed women than for non-distressed women.

**Perceived control of internal states.**

It was hypothesized that distressed women would have poorer capacities than non-distressed women to control their internal states. The Perceived Control of Internal States Scale (Pallant, 2000) was used to measure the extent to which women rated their capacity to control their internal states. The distribution of scores on this scale approximated normality (see Appendix D). Results of a Mann-Whitney U test confirmed this hypothesis, showing a significant difference between the distressed (mean rank=98.92) and the non-distressed groups (mean rank=184.54; Z=-7.56, p<.001) on perceived control of internal states. As predicted these findings showed that perceived control of internal states scores were lower for distressed women than non-distressed women.

**Individual characteristics**

**Perfectionism.**

It was hypothesized that distressed women would have higher levels of perfectionism (self-oriented perfectionism and socially-prescribed perfectionism) than non-distressed women (Hewitt & Flett, 1989, 1991b). The distribution of scores on these two perfectionism sub-scales approximated normality (see Appendix D). Mann-Whitney U tests revealed a significant difference between the distressed group (mean rank=179.97) and the non-distressed group (mean rank=150.43; Z=-2.61, p=.009) on self-oriented perfectionism. The distressed women had higher self-oriented perfectionism scores than non-distressed women. Similarly, a significant difference was found between the distressed group (mean rank=183.95) and the non-distressed group...
group (mean rank=145.78: \( Z=-3.40, p=.001 \)) on socially-prescribed perfectionism. This finding reveals that distressed women had higher socially-prescribed perfectionism scores than non-distressed women.

Fear of negative evaluation.

It was hypothesized that distressed women would have higher levels of fear of negative evaluation than non-distressed women. The Brief Fear of Negative Evaluation Scale was used to assess this hypothesis (Leary, 1983). The distribution of scores on this scale approximated normality (see Appendix D). Results of a Mann-Whitney U test revealed a significant difference between the distressed group (mean rank=204.67) and the non-distressed group (mean rank=139.54: \( Z=-5.76, p<.001 \)). This finding reveals that distressed women had higher fear of negative evaluation scores than non-distressed women.

3.5.4.2 Other vulnerability factors

Antenatal factors

Ratings of antenatal depression and anxiety.

It was hypothesized that distressed women would have higher ratings of antenatal depression and antenatal anxiety than non-distressed women. Two questions were asked of respondents to assess antenatal mood, with ratings given on a 10-point rating scale: (1) “Did you feel miserable or depressed during your pregnancy?” (2) “Did you feel tense or anxious during your pregnancy?” Higher scores were found for ratings of antenatal anxiety (\( M=4.58, SD=2.6, \) range 1-10) than were found for ratings of antenatal depression (\( M=2.90, SD=2.2, \) range 1-10). Results of a Mann-Whitney U test revealed a significant difference between the distressed (mean rank=198.79) and non-distressed groups (mean rank=147.67: \( Z=-4.59, p<.001 \)) on ratings of antenatal depression. Similarly, results of a Mann-Whitney U test revealed a significant difference between the distressed (mean rank=187.52) and non-distressed groups (mean rank=152.27: \( Z=-3.10, p=.002 \)) on ratings of antenatal anxiety.

Relationship factors

Quality of relationship with partner before baby.

It was hypothesized that poor quality relationships prior to having the baby, would be a vulnerability factor for postnatal distress. Women were asked to rate the
quality of their relationship before the birth of their babies. This single item was scored on a 10-point rating scale, and is referred to here as relationship quality before baby. Scores ranged from 2 to 10, with a mean score of 9.01 (SD=1.44). The end points for this item were 1=constant friction or relationship breaking down, and 10=close, warm relationship. Results of a Mann-Whitney U test revealed a significant difference between the distressed group (mean rank=136.74) and the non-distressed group (mean rank=167.44: Z=-2.94, p=.003) on relationship quality before baby, whereby the distressed women reported lower levels of relationship quality before their babies were born than the non-distressed women.

Demographic factors

Maternal age.

Women in the sample were aged between 18 and 44 (M=32.14 years, SD=4.60). In order to determine whether there was a difference between the distressed and non-distressed groups of women on maternal age, a Mann-Whitney U test was conducted. Results revealed no significant difference between the distressed group (mean rank=152.89) and the non-distressed group (mean rank=164.95: Z=-1.053, p=.292) on maternal age.

Level of education.

Women were asked to nominate the highest level of education that they had completed. Overall, the sample was skewed towards higher levels of education, with 220 women (68%) completing university (either undergraduate and/or postgraduate degrees), 58 women (18%) having completed some additional training, and 45 (14%) completing either some or all of secondary school. To explore levels of education, two education groups were generated: non-tertiary (including school and additional non-tertiary education) and tertiary. A chi-square analysis was conducted (using Yates continuity correction for a 2x2 table), indicating a significant association found between level of education and postnatal distress (χ²=5.76, df=1, p=.016). It was found that 37.9% of the non-tertiary group were distressed, however only 24.2% of the tertiary educated group were distressed. This finding suggests that lower levels of education might be a risk factor for postnatal distress.
**Baby age.**

At the time of completing the questionnaire, women’s babies ranged in age from 6 weeks to 6 months ($M=12.6$ weeks, $SD=5.02$ weeks). A Mann-Whitney U test revealed that there was no significant difference between the *distressed* (mean rank=158.62) and the *non-distressed* (mean rank=163.37; $Z=-.414, p=.670$) women on the age of the baby.

3.5.4.3 Summary of findings related to vulnerability factors

As predicted, *distressed* and *non-distressed* women differed significantly on all cognitive vulnerability factors. Compared to *non-distressed* women, *distressed* women were found to have higher general desire for control and order scores, poorer levels of generalized self-efficacy, lower scores on perceived control of internal states, higher scores on self-oriented and socially-prescribed perfectionism, and higher scores on fear of negative evaluation. In relation to antenatal vulnerability factors, significant differences were found between the *distressed* and *non-distressed* groups on ratings of antenatal depression and ratings of antenatal anxiety. Ratings of both antenatal depression and anxiety were higher for the *distressed* group. No differences were found between the *distressed* and *non-distressed* groups on maternal age or on baby age. Significantly more women with non-tertiary levels of education were in the *distressed* group than women with tertiary levels of education.

3.5.6 Discussion

New motherhood has been conceptualized as a potentially stressful life event (Cutrona, 1983; Terry, 1991a) involving enormous changes to women’s roles, to their relationships, and to their perceptions of themselves in this new life domain. The demands of caring for an infant, along with other stressful life events, and in combination with pre-existing vulnerabilities, can result in significant emotional distress for new mothers. The cognitive vulnerability-stress model in the present study posited a number of sources of stress that were proposed to trigger characteristic ways of thinking (vulnerability) into negative affective states. To explore whether the proposed sources of stress and vulnerability factors were associated with postnatal distress, the 94 *distressed* women (who had at least one classification on DASS-depression, -anxiety or
-stress) were compared on each variable, to the 230 non-distressed women (who were in the normal range on DASS-depression, -anxiety, and -stress). The distressed women were found to differ significantly from the non-distressed women on a number of measures that were classified as sources of stress and vulnerability factors.

In support of other studies on postnatal depression, predictions were confirmed in the present study, whereby the distressed women differed significantly to the non-distressed women on a number of measures. Distressed women reported higher levels of self-rated antenatal depression and anxiety; reported significantly higher levels of feeling out of control during birth; rated their babies as significantly more difficult compared to other babies; experienced significantly more stress associated with life events (that occurred in pregnancy and the postpartum); reported significantly lower levels of relationship quality after the birth of the baby; and reported lower levels of social support. All these factors have previously been found to be associated with postnatal depression (see Pope, 2000; SIGN, 2002).

A unique contribution of the present study was that of women’s perceptions of feeling criticized/judged by a number of proposed others. Anecdotal accounts of this phenomenon (to the present author, and Lamble & Morris, 1999) were supported by the findings of the present study. Significant differences were found between the distressed and non-distressed women in relation to perceived criticism/judgement from their own mothers, their partners, their own families, and other parents. Although the mean rating for perceived criticism/judgement of mothers-in-law was higher than for women’s own mothers, the mother-in-law ratings did not significantly differ when distressed women were compared to non-distressed women. This may be due to the more intimate and historical basis with which women’s own mothers impact upon them (in terms of distress), as compared to the impact of mothers-in-law who may be somewhat more emotionally removed. This ‘emotional proximity’ might also account for the findings that women’s perceptions of criticism/judgement from their partners, their own families, and other parents (perhaps serving as self-referent peer groups) were related to postnatal distress. In contrast, ‘emotional distance’ might account for the findings that ratings of perceived criticism/judgement from women’s partners’ families, did not significantly differ between distressed and non-distressed women. Similarly, women’s ratings of perceived criticism/judgement of their own fathers did not significantly differ between distressed and non-distressed women. This finding is not in agreement with the finding of Boyce et al. (1991) that paternal overprotection was associated with postnatal
depression, However, it is not surprising that fathers were family members whose criticism/judgement was not found to differ significantly for distressed and non-distressed women. It may be the case that the impact of fathers’ views in relation to new motherhood may occur less and/or be expressed less than the views held by mothers.

With respect to demographic variables, the distressed group did not differ significantly from the non-distressed group on maternal age or baby age, showing support for Terry et al. (1996) who reported that demographic variables are generally unrelated to postnatal depression. Nevertheless, significantly more non-tertiary educated women were distressed compared to tertiary educated women. This finding is consistent with Tammentie et al. (2002) and Bernazzani et al. (1997) who found that women with fewer years of education had higher depressive symptoms. However, this finding might be indicative of other factors at play, such as socio-economic disadvantage that might be associated with the present study’s broader measurement of distress.

Of primary and unique importance in the present study was the emphasis on the role of cognitive factors, with control forming a central basis. Five control-related cognitive variables were hypothesized to be associated with postnatal distress. These variables were conceptualized as sources of stress (perceptions of control and order, and parenting self-efficacy) and vulnerability factors (general desire for control and order, generalized self-efficacy, and perceived control of internal states). Two additional vulnerability factors were hypothesized to be associated with postnatal distress, encapsulating characteristic ways of thinking. These two variables were perfectionism (self-oriented and socially-prescribed perfectionism) and fear of negative evaluation.

As anticipated, levels of perceived control and order were significantly lower for distressed women compared to non-distressed women. This finding supports the speculation that loss of control and order is a source of stress in the postpartum, and is consistent with the general control literature that has linked losses of control to subjective distress (Rapee et al., 1996). Similarly, levels of reported parenting self-efficacy (the extent to which women felt competent in their roles as mothers) were significantly lower for distressed women than non-distressed women. This finding supports other reports regarding poor maternal self-efficacy being associated with maternal depression (Gross et al., 1994; Teti & Gelfand, 1991), and suggests that poor
self-efficacy in the specific domain of motherhood can operate as a cognitive source of stress at this time.

Regarding vulnerability factors, it was found that the quality of women’s relationships before the birth of their babies, (rated retrospectively) was significantly poorer for distressed women than for non-distressed women. Although this rating was retrospective, the finding points to a poor quality relationship prior to the birth of a baby being a possible vulnerability factor for postnatal distress. This is in agreement with the findings of others that a poor quality relationship often precedes the development of postnatal depression (see Pope, 2000; SIGN, 2002). Prospective research is required to establish the extent to which a poor pre-baby quality relationship serves as a vulnerability factor within the cognitive vulnerability-stress framework. According to Pope (2000), there is overwhelming evidence to confirm that difficulties in women’s relationships are associated with depression, whether these difficulties precede or follow the onset of postnatal depression.

Of importance in the present study, the three cognitive, control-related vulnerability factors hypothesized to be associated with postnatal distress were also substantiated. First, distressed women were found to have higher scores on general desire for control and order, than non-distressed women. Burger (1995) conceptualized desire for control as a general personality disposition that can render individuals vulnerable to distress. Some authors have suggested that women with a strong need for control and order could be at risk for postnatal depression, although this has not been established empirically (Dunnewold & Sanford, 2000; Milgrom et al., 1999). The present study developed the General Desire for Control and Order Scale and demonstrated that postnatally distressed women had more of a tendency for desiring control and order than their non-distressed counterparts. With the constant demands associated with new motherhood, and the potential for this life event to be associated with losses of control and order, it makes sense that women who have high needs for control and order may be more susceptible to postnatal distress following the birth of a child.

Second, generalized self-efficacy (GSES: Schwarzer & Jerusalem, 1995) was investigated to assess whether distressed and non-distressed women differed on this control/coping resource. Where parenting self-efficacy was used as a domain-specific measure of self-efficacy, generalized self-efficacy was used as a measure of global confidence in one’s coping ability across a range of situations (Schwarzer & Jerusalem,
The findings in the present study revealed that distressed women had poorer levels of generalized self-efficacy than non-distressed women, suggesting that generalized self-efficacy is associated with postnatal distress. Thirdly, distressed women were found to have lower scores on perceived control of internal states, than non-distressed women. This finding was consistent with Pallant’s (2000) findings that low scores on perceived control of internal states was associated with negative mood states. The Perceived Control of Internal States Scale developed by Pallant (2000) was used to determine the degree to which women felt they had control over their internal emotions, thoughts and physical reactions. This was deemed relevant to postnatal populations given the typical losses of external control and predictability that can occur in new motherhood (Lamble & Morris, 1999; Milgrom et al., 1999; Pope, 2000; Sharp & Bramwell, 2004). Whether conceived of as a control or coping resource, perceived control of internal states was shown to significantly differ for postnatally distressed women compared to women who were not postnatally distressed. This finding suggests that for women whose capacities to control their internal states is poor, postnatal distress may be more likely, than for women whose perceived control of their internal states is high.

In addition to the three control-related cognitive measures of general desire for control and order, generalized self-efficacy, and perceived control of internal states, two measures - proposed as constituting characteristic ways of thinking - were assessed. These measures were perfectionism (Hewitt & Flett, 1991b) and fear of negative evaluation (Leary, 1983). Both measures were found to differ significantly between distressed and non-distressed women. Regarding perfectionism, distressed women were found to have higher self-oriented and socially prescribed perfectionism scores than non-distressed women. Studies with non-postpartum populations have shown that perfectionists are vulnerable to depression during periods of high stress (Hewitt & Flett, 1996; Hewitt et al., 1996), and are also vulnerable to anxiety and stress (Chang et al., 2004). It has been suggested that perfectionism may have special significance to women in the postpartum (Milgrom et al., 1999), given that the demands of a new baby might prohibit the attainment of perfectionistic goals or standards. The results of the present study provide support for this notion to the extent that perfectionism scores were found to be higher for those women who were distressed compared to those women who were not. This finding is suggestive of the potential for perfectionistic women to be at greater risk for postnatal distress than non-perfectionistic women.
With respect to fear of negative evaluation, it was proposed that becoming a new mother involves a public ‘role’, whereby women are subject to the scrutiny of others. Fear of negative evaluation is the extent to which individuals experience apprehension at the prospect of being evaluated negatively (Leary, 1983), and this fear has been linked to anxiety. It was anticipated that women with high fear of negative evaluation scores would be vulnerable to postnatal distress given the social aspect of new motherhood. Fear of negative evaluation was shown to be a variable that differed significantly between distressed from non-distressed women. This finding may have significance for postnatal populations given that social supports have been found to be associated with reduced levels of postnatal depression (Pope, 2000), and the potential avoidance of such supports (due to fears of negative evaluation) may exacerbate postnatal distress (due to resulting social isolation).

Taken together, the findings in this section provide support for a number of additional cognitive factors (over and above the established risk factors for postnatal depression). In terms of sources of stress, low levels of perceived control and order and parenting self-efficacy might be helpful perceptions to ascertain from postnatal women, as part of the assessment of their postnatal adjustment. In addition, the vulnerability factors found to significantly differ between distressed and non-distressed women in the present study (general desire for control and order, generalized self-efficacy, perceived control of internal states, perfectionism, and fear of negative evaluation) may also be useful factors to gauge in postnatal women, in order to identify those women who might be at heightened risk for postnatal distress.

3.6 Testing a cognitive vulnerability-stress model of postnatal distress

3.6.1 Overview

The present study proposed a cognitive vulnerability-stress model to theoretically conceptualize postnatal distress (See Section 1.8.5.3), with a number of sources of stress and vulnerability factors hypothesized as predictors. Univariate analyses conducted in Section 3.5 highlighted the factors found to significantly differ for distressed compared to non-distressed women. Multivariate analyses were conducted in the present section in order to further examine the proposed cognitive vulnerability-stress model, whereby the relative contribution of each predictor variable
could be assessed within a model. The predictors used in these analyses were selected from the variables that were found previously to significantly differ between distressed and non-distressed women (see Section 3.5). Due to the dichotomous dependent variable (i.e., distressed versus non-distressed groups), logistic regression analyses were required to investigate the relative contribution of each predictor variable in the prediction of the presence of postnatal distress (Peng & So, 2002). Distress was coded 1, and non-distress was coded 0.

The significant predictor variables from Section 3.5 were screened for missing data. Only those variables with the majority of cases represented were retained for these analyses. Correlations between predictor variables were explored using Spearman’s correlations, to ensure that no variables correlated above .7 (Tabachnick & Fidell, 2001). All predictor variables that were retained for use in the logistic regression analyses were recoded into categorical variables using median splits to create dichotomous groups. The median split values are provided in Section 3.6.2. This followed recommendations by Tabachnick and Fidell (2007) that to ensure adequate power in logistic regression analyses it was necessary to maintain adequate cell frequencies for all pairs of variables included in the model. If the predictor variables had been used in their original form (with scores across a wide range of possible discrete values) this would have resulted in very small expected cell frequencies for many of the variables. Tabachnick and Fidell (2007, p. 442) recommends collapsing categories for variables with more than two levels when this is the case. The use of dichotomized variables also aids in the ease of interpretation of the results in relation to odds ratios, which reflect the change in odds of being in one of the categories of outcome when the value of the predictor increases by one unit.

Problematic scores on each variable (whether low or high scores) were coded 1, and adaptive scores on each variable were coded 0. For variables that were single-item ratings, the mid-point of 5.5 was used whereby scores from 6-10 were coded 1 (as the problematic scorers), and scores from 1-5 were coded 0 (as the adaptive scorers). Separate logistic regression analyses were used to determine the significant predictors to be included in the final logistic regression analysis. These analyses were conducted in conceptual groupings of predictor variables as follows: (a) demographic and antenatal factors, (b) sources of stress, and (c) vulnerability factors. The significant factors from each of these analyses were then entered into a final model which forms the focus of the present section.
3.6.2 Logistic Regression analyses

3.5.2.1 Demographic and antenatal factors

A direct logistic regression analysis (Tabachnick & Fidell, 2001) was used to assess the relative contribution of demographic and antenatal factors in predicting the presence of postnatal distress. The variables used in this analysis were maternal age (median split = 32.5 years), level of education (tertiary/non-tertiary), ratings of antenatal depression (cut-point = 5.5), and ratings of antenatal anxiety (cut-point = 5.5). This set of predictors explained between 8.1% (Cox and Snell R Square) and 11.7% (Nagelkerke R Square) of the variance. The model correctly classified 73.8% of cases overall. The variables found to significantly contribute to the predictive ability of this model were level of education and ratings of antenatal depression. Table 14 presents the odds ratios for each predictor variable.

Table 14
Odds ratios and 95% confidence intervals from logistic regression for demographic and antenatal factors

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Predictor</th>
<th>Odds Ratios (95% Confidence interval)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postnatal distress</td>
<td>Maternal age</td>
<td>1.01 (.60-1.68)</td>
<td>.977</td>
</tr>
<tr>
<td></td>
<td>Level of educationª</td>
<td>2.08 (1.23-3.57)</td>
<td>.006**</td>
</tr>
<tr>
<td></td>
<td>Ratings of antenatal depression</td>
<td>3.26 (1.66-6.39)</td>
<td>.001**</td>
</tr>
<tr>
<td></td>
<td>Ratings of antenatal anxiety</td>
<td>1.57 (.91-2.70)</td>
<td>.103</td>
</tr>
</tbody>
</table>

Note. Logistic regression, direct entry, odds ratios given for each dichotomous predictor with other predictors controlled. a Odds ratios and confidence intervals inverted. Odds ratios significant at ***p<0.001; **p<0.01; *p<0.05.

3.6.2.2 Sources of stress

To explore the unique contribution of sources of stress in the prediction of distress, within the cognitive vulnerability-stress model (see Section 1.8.5.3), the following variables were entered into a direct logistic regression analysis: perceptions of control and order (median split = 29.5), parenting self-efficacy (median split = 23.5), ratings of feeling out of control during birth (cut-point = 5.5), ratings of infant difficulty
(cut-point = 5.5), relationship quality after the baby (cut-point = 5.5), and ratings of perceived criticism/judgement from own mother (cut-point = 5.5). The model correctly classified 77.2% of cases overall. This set of predictors explained between 22% (Cox and Snell R Square) and 32% (Nagelkerke R Square) of the variance. Within the model containing sources of stress predictor variables, the variables that were found to significantly contribute to the predictive ability of the model were perceptions of control and order, parenting self-efficacy, quality of relationship after baby, and ratings of perceived criticism/judgement from own mother. Table 15 presents the odds ratios for each predictor variable.
Table 15

*Odds ratios and 95% confidence intervals from logistic regression for sources of stress factors*

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Predictor</th>
<th>Odds Ratios (95% Confidence interval)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postnatal distress</td>
<td>Perceptions of control &amp; order</td>
<td>2.73 (1.36-5.48)</td>
<td>.005**</td>
</tr>
<tr>
<td></td>
<td>Parenting self-efficacyª</td>
<td>2.49 (1.27-4.9)</td>
<td>.008**</td>
</tr>
<tr>
<td></td>
<td>Ratings of feeling out of control during birth</td>
<td>1.43 (.755-2.70)</td>
<td>.274</td>
</tr>
<tr>
<td></td>
<td>Ratings of infant difficulty</td>
<td>2.24 (1.09-4.59)</td>
<td>.028*</td>
</tr>
<tr>
<td></td>
<td>Relationship quality after the baby</td>
<td>8.16 (2.67-24.93)</td>
<td>.000***</td>
</tr>
<tr>
<td></td>
<td>Ratings of perceived criticism/judgement from own mother</td>
<td>2.70 (1.42-5.12)</td>
<td>.002**</td>
</tr>
</tbody>
</table>

*Note.* Logistic regression, direct entry, odds ratios given for each dichotomous predictor with other predictors controlled. *ª* Odds ratios and confidence intervals inverted. Odds ratios significant at ***p<0.001; ** p<0.01; * p<0.05.

3.6.2.3 Vulnerability factors

A direct logistic regression was used to explore the unique contribution of vulnerability factors to the prediction of distress. These factors were general desire for control and order (median split = 32.5), generalized self-efficacy (median split = 31.5), perceived control of internal states (median split = 81.5), self-oriented perfectionism (median split = 64.5), socially-prescribed perfectionism (median split = 44.5), and fear of negative evaluation (median split = 36.5). The model correctly classified 76.4% of cases overall. This set of predictors explained between 20.1% (Cox and Snell R Square) and 28.7% (Nagelkerke R Square) of the variance. The vulnerability factors that significantly contributed to the predictive ability of the model were perceived control of internal states and fear of negative evaluation. Table 16 presents the odds ratios for each predictor variable.
Table 16

Odds ratios and 95% confidence intervals from logistic regression for vulnerability factors

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Predictor</th>
<th>Odds Ratios (95% Confidence interval)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postnatal distress</td>
<td>General desire for control and order</td>
<td>1.57 (.84-2.94)</td>
<td>.162</td>
</tr>
<tr>
<td></td>
<td>Generalized self-efficacy</td>
<td>1.64 (.89-3.00)</td>
<td>.111</td>
</tr>
<tr>
<td></td>
<td>Perceived control of internal states</td>
<td>5.01 (2.61-9.59)</td>
<td>.000***</td>
</tr>
<tr>
<td></td>
<td>Self-oriented perfectionism</td>
<td>1.07 (.56-2.06)</td>
<td>.830</td>
</tr>
<tr>
<td></td>
<td>Socially-prescribed perfectionismª</td>
<td>1.08 (0.58-2)</td>
<td>.816</td>
</tr>
<tr>
<td></td>
<td>Fear of negative evaluation</td>
<td>2.50 (1.36-4.62)</td>
<td>.003**</td>
</tr>
</tbody>
</table>

Note. Logistic regression, direct entry, odds ratios given for each dichotomous predictor with other predictors controlled. ª Odds ratios and confidence intervals inverted. Odds ratios significant at ***p<0.001; ** p<0.01; * p<0.05.

3.6.2.4 The final model

In order to identify the most important predictors of postnatal distress, a final model was tested using the seven significant variables found in each of the previous sections (Sections 3.6.2.1, 3.6.2.2, 3.6.2.3). The variables included in this model were level of education, ratings of antenatal depression, perceptions of control and order, parenting self-efficacy, ratings of infant difficulty, relationship quality after the baby, ratings of perceived criticism/judgement from own mother, perceived control of internal states, and fear of negative evaluation. The Hosmer-Lemeshow goodness-of-fit test was greater than 0.05 (p=.227), suggesting an acceptable level at which the model’s estimates fit the data. The model correctly classified 81.2% of cases overall. This set of predictors explained between 32% (Cox and Snell R Square) and 46% (Nagelkerke R Square) of the variance. The factors that significantly contributed to the predictive ability of the model were ratings of antenatal depression, perceptions of control and order, parenting self-efficacy, relationship quality after the baby, ratings of perceived criticism/judgement from own mother, perceived control of internal states, and fear of negative evaluation. Table 17 presents the odds ratios for each predictor variable in the final model.
### Table 17

*Odds ratios and 95% confidence intervals from logistic regression for the final model*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Odds Ratios (95% Confidence interval)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic &amp; antenatal factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of education</td>
<td>2.0 (0.94-4.17)</td>
<td>.070</td>
</tr>
<tr>
<td>Ratings of antenatal depression</td>
<td>3.44 (1.42-8.37)</td>
<td>.006**</td>
</tr>
<tr>
<td>Sources of stress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceptions of control and order</td>
<td>2.70 (1.25-5.87)</td>
<td>.012*</td>
</tr>
<tr>
<td>Parenting self-efficacy</td>
<td>2.27 (1.08-4.88)</td>
<td>.030*</td>
</tr>
<tr>
<td>Relationship quality after baby</td>
<td>3.96 (1.20-13.11)</td>
<td>.024*</td>
</tr>
<tr>
<td>Ratings of infant difficulty</td>
<td>1.81 (.14-.81)</td>
<td>.141</td>
</tr>
<tr>
<td>Ratings of perceived criticism</td>
<td>2.20 (1.06-4.53)</td>
<td>.033*</td>
</tr>
<tr>
<td>/judgement from own mother</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vulnerability factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived control of internal states</td>
<td>3.89 (1.79-8.45)</td>
<td>.001**</td>
</tr>
<tr>
<td>Fear of negative evaluation</td>
<td>2.54 (1.22-5.31)</td>
<td>.013*</td>
</tr>
</tbody>
</table>

*Note.* Logistic regression, direct entry, odds ratios given for each dichotomous predictor with other predictors controlled. *a* Odds ratios and confidence intervals inverted. Odds ratios significant at ***p<0.001; **p<0.01; *p<0.05.

#### 3.6.3 Discussion

The present study proposed a cognitive vulnerability-stress model for postnatal *distress* (see Section 1.8.5). Section 3.4 provided univariate findings in relation to the extent to which scores on each variable within the theoretical model differed significantly between *distressed* and *non-distressed* women. The significant variables from Section 3.4 were used in the present section (with the exception of variables with large amounts of missing data) to statistically test these factors in the context of a model. Logistic regression analyses were initially used to determine the significant predictors within conceptual groups of (a) demographic and antenatal factors, (b) sources of stress, and (c) vulnerability factors. Once the significant predictors were ascertained, these predictors were entered into a final logistic regression analysis to
assess the extent to which the combination of factors (i.e. the model) predicted the categorical outcome of postnatal distress. The final model correctly classified 81.2% of cases overall, and explained between 32% and 46% of the variance.

Within the final model, the following predictors were significant: Ratings of antenatal depression, perceptions of control and order, parenting self-efficacy, relationship quality after the baby, ratings of perceived criticism/judgement from own mother, perceived control of internal states, and fear of negative evaluation. When holding other variables constant, women who reported low levels of relationship quality after having their babies were 3.96 times more likely to be in the distressed group than women with high reported levels of relationship quality. Women with low levels of perceived control of internal states were 3.89 times more likely to be in the distressed group than women with high scores on this scale. Women with high ratings of antenatal depression were 3.44 times more likely to be in the distressed group than women with low ratings of antenatal depression. Women who reported low levels of perceived control and order were 2.7 times more likely to be in the distressed group than women whose reported levels of control and order were high. Women with high levels of fear of negative evaluation were 2.54 times more likely to be in the distressed group than women whose fear of negative evaluation scores were low. With respect to parenting self-efficacy, women who had poor levels of self-efficacy in their parenting roles, were 2.27 times more likely to be in the distressed group than women who had good levels of parenting self-efficacy. Finally, women who rated their mothers as highly critical/judgemental were 2.2 times more likely to be in the distressed group than women who rated their mothers as less critical/judgemental.

Within the final model, level of education and ratings of infant difficulty were not sustained as significant independent contributors to the prediction of postnatal distress, when in combination with the other predictor variables. Perhaps fear of negative evaluation in the final model accounted for the variance explained by ratings of infant difficulty in the initial logistic regression analysis (see Section 3.6.2.2). The argument for this is based on the wording of the question for ratings of infant difficulty which asks women to rate the difficulty of their baby “…in comparison to other babies”. Perhaps their fear of being evaluated negatively might distort their perceptions of how ‘difficult’ they perceive their babies to be in comparison to other babies.

The significant findings in this section provide further evidence for the importance and statistical significance of the hypothesized variables within the
cognitive vulnerability-stress model that was proposed in the present study. The final model is a representation of the key variables that remain significant when other variables are controlled. It should be noted that despite the dichotomous scoring categories of high/low, these predictor variables maintained their statistical significance. This is suggestive of the strength of these variables in predicting postnatal distress. Predictor variables within the final model that showed support for the findings of others were ratings of antenatal depression (Beck, 1996; Da Costa et al., 2000; Dimitrovsky et al., 1987; Elliot et al., 1983; Gotlib et al., 1989; Matthey et al., 2000; O’Hara & Swain, 1996; Watson et al., 1984), poor levels of parenting self-efficacy (Cutrona & Troutman, 1986; Gross & Rocissano, 1988), and poor levels of relationship quality (Boyce et al., 1991; Boyce & Hickey, 2005). These variables have consistently been linked to low postnatal mood or postnatal maladjustment in previous studies (see Pope, 2000, for a review).

Of unique contribution within the final model were predictor variables proposed as sources of stress and vulnerability factors within the cognitive vulnerability-stress model (presented in Section 1.8). With respect to sources of stress, low levels of perceived control and order and high ratings of perceived criticism/judgement from women’s mothers, significantly increased the likelihood of women being in the distressed group. Regarding vulnerability factors, perceived control of internal states and fear of negative evaluation remained significant factors in the prediction of distress in the final model. These findings reiterate the relevance of two important concepts in relation to postnatal distress. Firstly, the findings support the notion of control (control over the environment and control over one’s internal thoughts, emotions and physical reactions) as a significant factor in relation to postnatal distress. The present findings are consistent with the non-postpartum findings of others that link losses of control to psychological distress (e.g., Burger, 1989; Barlow, 2000; Chorpita & Barlow, 1998; Rapee et al., 1996). The control-related variables that showed significance in the final model were perceptions of control and order, parenting self-efficacy, and perceived control of internal states. Secondly, the findings suggest that women’s social perceptions have significance to postnatal distress – both in terms of high levels of fear of negative evaluation and perceptions of high levels of criticism/judgement from women’s own mothers. These socially-related factors may provide some support for the susceptibility of women to the many and varied socio-cultural norms about motherhood and the associated distress (Dimitrovsky et al., 2002).
3.7 Differences between anxious-depressed women and their depressed-only or anxious and/or stressed counterparts

3.7.1 Overview

Along with the capacity of the DASS-21 to assess separate negative emotional states of depression, anxiety and stress, comes the opportunity to assess women for comorbid classifications. Some authors have referred to the high risk nature of patients who have both anxiety and depression (anxious-depression) (Fawcett, 1997; Matthey et al., 2000; Rivas-Vazquez et al., 2004; Sareen et al., 2005). It was therefore of interest in the present study to distinguish the anxious-depressed subset of women from those women who had classifications of depression only (depressed), from those women who had classifications of anxiety without depression (anxious) and from those women who had classifications of stress without depression (stressed).

This section is divided into two parts. First, findings are presented according to four sub-groups of the 94 DASS-identified distressed women (see Section 3.3.5). These four sub-groups comprised those women classified as depressed (depressed, n=38), depressed and anxious (anxious-depressed, n=23), anxious (anxious, n=18), and stressed (stressed, n=15) (See Section 3.6.2). The extent to which the EPDS identified these distressed groups of women was examined. Second, three sub-groups were formed (referred to as three distress groups) out of the 94 distressed women. These three sub-groups of distressed women included the depressed only women (depressed, n=38), the anxious-depressed women (anxious-depressed, n=23) and a combined group of women who were not depressed, but who were either anxious only, anxious and stressed, or stressed only (anxious and/or stressed, n=33) (See Section 3.7.3). The latter group was combined because clinically, anxious patients have much in common with stressed patients (Barlow, 1988), and because this resulted in relatively equal numbers in each group for statistical analyses. These three groups were examined to determine whether they differed on the two measures of well-being, and on the cognitive variables (sources of stress and vulnerability factors) previously found to be significantly associated with postnatal distress (See Section 3.5).

Kruskal-Wallis tests were used to compare differences between three groups of women on cognitive measures of interest: Well-being measures, sources of stress, and vulnerability factors. Findings are presented regarding the extent to which scores on each variable differed significantly when the anxious-depressed group was compared to
the other two groups. Due to the number of Kruskal-Wallis tests conducted, it was once again decided to apply a more stringent significance level of .01 to control the overall Type 1 error rate (Field, 2005).

3.7.2 Prevalence and severity of depression, anxious-depression, anxiety, and stress

Table 18 shows the classifications for women in the present sample, according to both EPDS and the DASS-21, with anxious-depressed women reflected as a separate group from the women who were just depressed.

Table 18
Classifications of women on both the DASS-21 and the EPDS

<table>
<thead>
<tr>
<th>EPDS Classifications</th>
<th>EPDS Likely Depressed</th>
<th>EPDS Unlikely Depressed</th>
<th>EPDS Missing Data</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>DASS Depressed</td>
<td>25</td>
<td>12</td>
<td>1 (moderate)</td>
<td>38</td>
</tr>
<tr>
<td>DASS Anxious-Depressed</td>
<td>21</td>
<td>2</td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>DASS Anxious</td>
<td>10</td>
<td>8</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>DASS Stressed</td>
<td>5</td>
<td>10</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>No DASS Classification (normal)</td>
<td>19</td>
<td>207</td>
<td>3</td>
<td>229</td>
</tr>
<tr>
<td>DASS Missing Data</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>240</td>
<td>5</td>
<td>325</td>
</tr>
</tbody>
</table>
Table 18 shows that out of the total sample of women, the DASS-21 found 38 women (12%) to be depressed (without anxiety), 23 women (7%) to be anxious-depressed, 18 women (6%) to be anxious (without depression), and 15 women (5%) to be stressed (without depression or anxiety). An interesting finding was the capacity of the EPDS to detect anxious-depressed women. In order to explore this finding statistically, four groups of women were generated according to their classification on the DASS-21. This was done to determine whether there were differences among these four groups of women on EPDS scores. The four groups were the depressed group \((n=37)\), the anxious-depressed group \((n=23)\), the anxious group \((n=18)\) and the stressed group \((n=15)\). Because of the negative skew in the distribution of scores on the EPDS (the dependent variable), a Kruskal-Wallis test was used. Results indicated a statistically significant difference among the groups. Inspection of the mean ranks revealed that the highest scores on the EPDS were found for the anxious-depressed group (mean rank=70.83), followed by the depressed group (mean rank=44.35), the anxious group (mean rank=38.69) and the stressed group (mean rank=26.97) \((\chi^2=28.42, df=3, p<.001)\). These findings point to the capacity of the EPDS to detect anxious-depression. Histograms of EPDS scores for each of the four distress groups (depressed, anxious-depressed, anxious and stressed) are presented in Appendix D.

In order to further interpret these findings, the DASS-21 severity categories (i.e., mild, moderate, severe, and extremely severe) were explored for each defined group of women (i.e., depressed, anxious-depressed, anxious, and stressed), with the corresponding number of women who received an EPDS classification (i.e., likely depressed and unlikely depressed). Table 19 reflects these findings.
Table 19

*Numbers of women in each scoring category on DASS-depression, -anxiety and -stress scales for each classified group (depressed, anxious-depressed, anxious, and stressed groups), and the number of women with corresponding EPDS identifications*

<table>
<thead>
<tr>
<th></th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
<th>Extremely</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depressed group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DASS-depression</td>
<td>24</td>
<td>12</td>
<td>1</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>EPDS-likely depressed</td>
<td>14</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>EPDS-unlikely depressed</td>
<td>10</td>
<td>2</td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>Anxious-depressed group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DASS-depression</td>
<td>3</td>
<td>9</td>
<td>9</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>EPDS-likely depressed</td>
<td>3</td>
<td>7</td>
<td>9</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>EPDS-unlikely depressed</td>
<td>2</td>
<td></td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>DASS-anxiety</td>
<td>5</td>
<td>8</td>
<td>3</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>EPDS-likely depressed</td>
<td>4</td>
<td>8</td>
<td>2</td>
<td>7</td>
<td>21</td>
</tr>
<tr>
<td>EPDS-unlikely depressed</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Anxious group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DASS-anxiety</td>
<td>10</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>EPDS-likely depressed</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>EPDS-unlikely depressed</td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td><strong>Stressed group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DASS-stress</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>EPDS-likely depressed</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>EPDS-unlikely depressed</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

*Note.*  

- a Missing data for one woman who failed to complete the EPDS.  
- b The EPDS missed 4 classifications, 2 on depression and 2 on anxiety, which accounted for 2 cases of anxious-depression.

The most notable findings reflected in Table 19, are that the EPDS, despite the sensitive cut-off of over 9, failed to identify 10 women who had *mild* symptoms of depression, and 2 women who had *moderate* symptoms of depression. The EPDS identified almost all of the anxious-depressed women, except for 2 women, one of whom had DASS-21 scores that were *moderate* on depression and *severe* on anxiety, and the other who had DASS-21 scores that were *moderate* on depression and *mild* on depression and anxiety.
anxiety. Interestingly, the EPDS (which is a tool to detect the likelihood of depression) identified 10 women who had symptoms of anxiety (without depression). Similarly, the EPDS detected 5 cases of stress (without depression).

Inspection of Table 19, suggested that the anxious-depressed group of women had more severe scores on DASS-depression than the women who were depressed (without anxiety). In order to explore this statistically, a Mann-Whitney U test was conducted to determine whether there was a difference between these two groups on DASS-depression scores. A significant difference was found between these two groups whereby the anxious-depressed group (mean rank=42.02) had higher scores on DASS-depression than the depressed (only) group (mean rank=24.33: \( Z=-3.84, p<.001 \)).

3.7.3 Differences between the three distress groups

3.7.3.1 Overview

Section 3.5 identified a number of variables (well-being measures, sources of stress, and vulnerability factors) that significantly differed when distressed women’s scores were compared statistically to non-distressed women’s scores. With an interest in the high-risk sub-group of anxious-depressed women, this section examines the two well-being measures (maternal role satisfaction and satisfaction with life), the cognitive sources of stress variables, and the cognitive vulnerability variables, in relation to the extent that significant differences could be found between the three distress groups. For scales that showed a normal distribution, one-way between groups analysis of variance (ANOVA) was used to assess differences between the three distress groups. For scales that showed a skewed distribution, or in cases where single-item ratings were used (i.e., maternal role satisfaction), Kruskal-Wallis tests were used to determine differences between the three groups. Given the number of repeated analyses conducted in this section it was decided to apply a more stringent significance level of .01 to control the overall Type 1 error rate (Field, 2005).

3.7.3.2 Differences between the three distress groups on postnatal well-being measures

The three distress groups were explored in relation to the two well-being measures of maternal role satisfaction (a single-item rating) and satisfaction with life.
Maternal role satisfaction

Results of a Kruskal-Wallis test indicated a statistically significant difference among the groups on maternal role satisfaction. Inspection of the mean ranks revealed that the lowest level of maternal role satisfaction was found for the anxious-depressed group (mean rank=32.54) as compared to the depressed group (mean rank=49.80) and the anxious and/or stressed group (mean rank=55.27) ($\chi^2=10.47$, $df=2$, $p=.005$). This finding shows that women who are both anxious and depressed have lower levels of maternal role satisfaction than women who are just depressed or just anxious and/or stressed.

Satisfaction with life

A Kruskal-Wallis test was also conducted for satisfaction with life (due to the extreme positive skew of this variable). Results revealed a significant difference among the three distress groups on satisfaction with life, with the anxious-depressed group scoring lower on satisfaction with life (mean rank=32.54) than the depressed group (mean rank=48.45) and the anxious and/or stressed group (mean rank=56.83) ($\chi^2=10.86$, $df=2$, $p=.004$). This finding shows that women who have both anxious and depressive symptomatology report lower levels of satisfaction with life than women who are just depressed or just anxious and/or stressed.

3.7.3.3 Differences between the three distress groups on sources of stress

Significant differences were found between the distressed and non-distressed groups on perception of control and order and parenting self-efficacy (see Section 3.5). Therefore further analyses were conducted to assess whether there were differences between the three distress groups on these two sources of stress variables. Because the scores on perception of control and order and parenting self-efficacy were normally distributed, ANOVAs were used.

Perception of control and order.

A significant difference was found between the three distress groups [$F(2, 90)=7.66$, $p=.001$] on PerCOS. Post hoc tests using the Tukey HSD indicated that the mean score for the anxious-depressed group ($M=20.26$, $SD=5.49$) was significantly
different from the depressed group \((M=26.18, SD=6.20)\) and the anxious and/or stressed group \((M=25.88, SD=6.54)\). Anxious-depressed women reported lower levels of perceived control and order than the depressed or anxious and/or stressed women.

Parenting self-efficacy

A significant difference was also found between the three groups \([F(2, 83)=7.9, p=.001]\) on parenting self-efficacy. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for the anxious-depressed group \((M=33.90, SD=7.81)\) was significantly different from the other two groups – the depressed \((M=26.32, SD=6.27)\), and the anxious and/or stressed group \((M=28.14, SD=7.42)\) on parenting self-efficacy. This finding reveals that anxious-depressed women reported poorer levels of parenting self-efficacy than did the depressed or anxious and/or stressed women.

3.7.3.4 Differences between the three distress groups on vulnerability factors

As presented in Section 3.5.4.1, significant differences were found between the distressed and non-distressed groups on general desire for control and order, generalized self-efficacy, perceived control of internal states, perfectionism, and fear of negative evaluation. Given the normal distribution of scores on these scales, ANOVAs were conducted to determine whether differences existed between the three distress groups on these vulnerability variables.

General desire for control and order

No significant differences were found between the three distress groups on general desire for control and order \([F(2, 90)=1.58, p=.211]\). Mean scores and standard deviations for the three distress groups on general desire for control and order were as follows: the anxious-depressed group \((M=34.65, SD=5.75)\), the depressed group \((M=32.43, SD=6.33)\), and the anxious and/or stressed group \((M=34.73, SD=5.82)\).

Generalized self-efficacy

A significant difference was found for the three distress groups on generalized self-efficacy \([F(2,90)=5.28, p=.007]\), whereby the anxious-depressed group \((M=26.95, SD=5.69)\) differed significantly from the other two groups: Depressed group \((M=29.97, SD=6.27)\), and the anxious and/or stressed group \((M=26.28, SD=6.35)\).
$SD=4.56$) and anxious and/or stressed group ($M=31.03$, $SD=3.89$). Lower levels of generalized self-efficacy were found for the anxious-depressed women than the depressed or anxious and/or stressed women.

Perceived control of internal states

With the number of analyses conducted in this section, it was decided to use a more stringent significance level of .01. As a result of this adjusted significance level, the findings regarding differences between the three distress groups on perceived control of internal states, did not fall within the criteria for significance [$F(2,90)=4.38$, $p=.015$]. Inspection of the means indicated that the mean scores were lower for the anxious-depressed group than the depressed and the anxious and/or stressed groups.

Perfectionism

No significant differences were found between the three distress groups on self-oriented perfectionism [$F(2,89)=.522$, $p=.595$]. Mean scores for three distress groups were as follows: The depressed group ($M=67.27$, $SD=15.48$), the anxious-depressed group ($M=66.91$, $SD=15.75$) and the anxious and/or stressed group ($M=70.79$, $SD=18.02$). Similarly, no significant differences were found between the three distress groups on socially-prescribed perfectionism [$F(2,89)=1.42$, $p=.246$]. Mean scores for three distress groups were as follows: The depressed group ($M=47.19$, $SD=12.73$), the anxious-depressed group ($M=53.43$, $SD=14.93$) and the anxious and/or stressed group ($M=49.34$, $SD=14.59$).

Fear of negative evaluation

Using the more stringent significance level of .01, there was no significant difference between the three distress groups on fear of negative evaluation [$F(2,89)=3.62$, $p=.031$].

3.7.4 Discussion

The sub-group of anxious-depressed women was of particular interest in the present study as some authors have identified that (non-postpartum) patients in whom anxiety and depression co-occur, manifest more severe symptoms (Rivas-Vazquez et al., 2004), are more difficult to treat (Emmanuel et al., 1998), show poorer acute and
long-term outcome (Rivas-Vazquez et al., 2004), and are at increased risk for suicide (Fawcett, 1997; Sareen et al., 2005) than patients with either pure anxiety or depression.

In the present study, the DASS-21 identified 61 women (19%) to be depressed, of whom 23 (7% of the total sample) were also anxious (anxious-depressed). These anxious-depressed mothers were found to have significantly higher levels of depressive symptoms on both the DASS-21 and the EPDS compared to participants who reached criteria for depression alone. The EPDS (which is a tool to detect the likelihood of depression) identified 10 out of 18 anxious women, who ranged in severity from mild to extremely severe on the DASS-21. This finding, together with the findings that the EPDS successfully identified 21 out of 23 anxious-depressed women, points to the assertions of others that an anxiety sub-scale exists within the EPDS (e.g., Brouwers, van Baar, & Pop, 2001b; Green, 1998; Jomeen & Martin, 2005; Pop, Komproe, & van Son, 1992; Stuart et al., 1998). However, Brouwers et al. (2001b), who confirmed an anxiety sub-scale within the EPDS suggested that the total score of the EPDS more accurately measured anxiety than did the anxiety sub-scale alone. Although the EPDS identified the majority of anxious-depressed women, some of the anxious women, and some of the stressed women, the EPDS failed to identify 2 anxious-depressed women, 8 anxious women, and 10 stressed women. These findings substantiate the role for a tool such as the DASS-21 to assess and detect postnatal women for the presence of depression, anxiety and stress, as well as the comorbidity of these negative affective states. This type of assessment might facilitate the identification of appropriate treatment strategies.

The anxious-depressed sub-group was found to have significantly lower levels of maternal role satisfaction, and significantly lower levels of satisfaction with life than women who were just depressed or anxious and/or stressed. Similarly, anxious-depressed women were found to have poorer scores on some cognitive sources of stress variables and some cognitive vulnerability factors. With respect to sources of stress, the anxious-depressed group was found to differ significantly from the depressed and anxious and/or stressed groups on perception of control and order (PerCOS) and on parenting self-efficacy. The anxious-depressed group reported significantly lower levels of perception of control and order, and poorer levels of parenting self-efficacy. With respect to vulnerability factors, no significant differences were found (at the .01 significance level) between the three distress groups on general desire for control and order, perceived control of internal states perfectionism, or fear of negative evaluation.
Although these variables were vulnerability factors that significantly differed between distressed and non-distressed women (see Section 3.5), they were not found to significantly differ when the anxious-depressed women were compared to the depressed women or the women who were anxious and/or stressed. It is possible that these variables are similarly associated with depression as they are with anxiety. Given that anxiety and/or depression form part of the symptom profile of each of the three distress groups (i.e., depressed, anxious-depressed, and anxious and/or stressed), perhaps scores on general desire for control and order, perceived control of internal states, perfectionism, and fear of negative evaluation, did not differ enough to reach significance when comparing the three distress groups.

Regarding cognitive control-related vulnerability, it was also found that generalized self-efficacy was significantly lower for anxious-depressed women than for women who were depressed or for women who were anxious and/or stressed. It appears that control-related factors have particular significance to anxious-depression, as both sources of stress (i.e., perceptions of control and order and parenting self-efficacy), and vulnerability factors (i.e., generalized self-efficacy). These findings are consistent with reports that perceptions of losses of control over the demands of a situation are associated with psychological distress (Barlow, 2000; Burger, 1989; Chorpita & Barlow, 1998; Rapee et al., 1996; Walker, 2001). Similarly in relation to self-efficacy, the findings of the present study correspond with findings that show a lack of self-efficacy, or the perception that one is incapable of exercising control over one’s environment, have been associated with negative affective states (Bandura, 1977; Beck 1976). Some authors have asserted that when individuals experience uncertainty about their ability to control outcomes, anxiety can be the result. When this lack of control increases, an individual can experience mixed anxiety-depression (Alloy et al., 1990).

Control has been referred to as a central construct in explaining the link between stressful events and psychological outcomes (see Skinner, 1995). Losses of control have been implicated in the cognitive vulnerability-stress theories of depression (Dykman & Abramson, 1990) and anxiety (Barlow, 2000). The present findings demonstrate that perceptions of control (over the external environment), and perceptions of self-efficacy (both domain specific and generalized) differ significantly for women who are anxious-depressed compared to women who are depressed, or anxious and/or stressed. It is striking that although not significant at the more stringent significance level of .01, the mean scores on perceived control of internal states (the
extent to which women reported being able to control their thoughts, emotions and physical reactions) were lower for *anxious-depressed* women than the other two groups.

In summary, the findings in this section, together with previous findings from non-postpartum populations (Emmanuel et al., 1998; Fawcett, 1997; Rivas-Vazquez et al., 2004; Sareen et al., 2005), point to the clinical importance of assessing postnatal women for the presence of both depressive and anxious symptomatology. Had the present study only assessed women for depression, 61 women (19% of the sample) would have been identified as depressed, and as a result, may have (in practice) received treatment strategies that focused on the depressive symptoms at the preclusion of specific treatments for the symptoms of anxiety. By using the anxiety scale within the DASS-21, it was revealed that 23 of the 61 depressed women were both depressed and anxious (*anxious-depressed*). Although the EPDS identified most of these anxious-depressed women, it did so in the context of it being a scale that identifies the likelihood of depression, rather than anxious-depression per se. The 23 anxious-depressed women were found to have significantly higher depression scores, and to have significantly poorer levels of *maternal role satisfaction* and *life satisfaction* than their depressed counterparts. These findings are suggestive that this sub-group of anxious-depressed women could therefore be at greater risk for poorer treatment outcome (see Rivas-Vazquez et al., 2004) and possibly at greater risk for increased suicidality (see Fawcett, 1997; Sareen et al., 2005), than those women who were depressed only.

These findings do not confirm whether the measures that differ between the three distress groups in fact cause the distress, or whether the increased distress brings about the poorer ratings. Similarly it is important to note that the findings showing anxious-depressed women rating more poorly on various measures compared to depressed only women, may simply be a function of these women being more depressed than a function of these women experiencing anxiety as part of their symptom profiles. Nevertheless, with the capacity of the DASS-21 to identify comorbid classifications of anxious-depression, treatment strategies for both sets of symptoms can at least be administered (see Emmanuel et al., 1998; Kush, 2004). Findings that show control perceptions (i.e., *perception of control and order*) to be lower, and perceptions of self-efficacy (i.e., *generalized self-efficacy* and *parenting self-efficacy*) to be poorer for anxious-depressed women than depressed only women, also point to treatment
strategies being targeted towards enhancing these aspects of women’s adjustment to motherhood, and to these aspects of women’s self-identities.
CHAPTER 4. GENERAL DISCUSSION

4.1 A summary of the main findings

Arguably, new motherhood is one of the most important life stages for the accurate detection and treatment of distress. It has been posited in the present study that new motherhood can be a stressful life event that can trigger vulnerability in some women. Postnatal psychological distress, if left untreated, can have negative, long-term implications for the mother, her infant and her relationships (Alder & Truman, 2002; Boath et al., 2004; Fisher et al., 2002). Depression has been extensively investigated as the outcome measure for the existence of psychological distress in postnatal women. It has been reported that 10% to 15% of women suffer from postnatal depression (O’Hara & Swain, 1996). In the present study, 19% of first-time mothers were found by the DASS-21 to have depressive symptoms in the mild to extremely severe range.

Several depression rating scales have been used to assess the severity of depression in women who have been screened and positively identified by the EPDS as likely to be depressed (Cox, Holden, & Sagovsky, 1987). These severity rating scales have been questioned for their use in the postpartum due to some items being seen to reflect the normal realm of postnatal life (e.g., lack of sleep, listlessness, weight loss, and poor concentration) as opposed to being genuine symptoms of depression (Affonso et al., 2000; Milgrom et al., 1999). It was proposed in the present study that the DASS-21 (S.H. Lovibond & P.F. Lovibond, 1995) be used in conjunction with the EPDS to assess symptoms of depression. The DASS-21 was selected because items identified as potential confounding items on other depression severity rating scales, do not form part of the depression scale of the DASS-21.

It has been argued by some authors however, that there is an over-reliance on depression as the marker for postnatal maladjustment (Fisher et al., 2002; Green, 1998). With this focus on depression, comes the potential to overlook women who have symptoms of anxiety and/or stress in whom depression does not co-exist (Matthey et al., 2003). As a result, anxious and/or stressed women who are not depressed, are at risk of not receiving treatment, and may therefore be subject to worsening symptomatology over time (Choenarom et al., 2005; Matthey et al., 2003). Similarly, with depression as the benchmark for postnatal psychological disturbance, women seen to be experiencing
difficulties, might be medicalized as being depressed (and prescribed unnecessary antidepressant medication), when in fact they are simply experiencing ‘normal’ adjustments to the constant demands of a new baby, and the associated fatigue (Boyce & Stubbs, 1994). To these ends, it was deemed important in the present study to clearly disentangle symptoms of depression from symptoms of anxiety and stress in the clinical range, as well as to separate out normal fluctuations in mood (i.e., scores in the normal range).

Some authors have pointed to the common occurrence of anxiety in postnatal populations (Fisher et al., 2004; Matthey, 2004; Matthey et al., 2003; Pope, 2000; Stuart et al., 1998; Wenzel et al., 2005), however it is often assumed that symptoms of anxiety will be detected as part of the assessment for depression (Matthey et al., 2003). Using the DASS-21 in the present study, it was revealed that 18 women (6%) had symptoms of anxiety without depression, suggesting that these women would not have been detected if depression was the criteria upon which their distress was determined. This finding is similar to the findings of Robinson and Young (1982) who found that 7% of new mothers had symptoms of anxiety without depression. Moreover, it was revealed by the DASS-21 that when including women with depressive symptoms, 41 women (13%) showed symptoms of anxiety, either in isolation or in combination with depression and/or stress. These findings point to the clinical importance of assessing postnatal women for symptoms of anxiety, not just for symptoms of depression.

Overall, it was argued and demonstrated in the present study that in order to represent a more complete picture of affective disturbance following childbirth, the term distress be used to identify postnatal depression, anxiety, and stress. The DASS-21 appeared to be a useful instrument for this purpose due to the applicability of the depression scale (i.e., exclusion of items for which other depression severity rating scales have been criticized) along with its capacity to measure the three negative emotional states of depression, anxiety and stress as separate phenomena. It was also seen as important in the present study to consider mild cases of depression, anxiety and stress as clinically significant, based on the potential for maternal distress to worsen, and to have a negative impact on other members of a woman’s family. According to Rivas-Vazquez et al. (2004), less severe symptoms of depression and anxiety still have the capacity to result in significant psychosocial impairment. Others have reported that patients with sub-threshold depression and anxiety are at a greater risk for developing a threshold disorder following a psychosocial stressor (Helmchen & Linden, 2000), such
as new motherhood. With respect to the EPDS, the cut-off used in the present study was accordingly lowered from the commonly used cut-off of 12 to 9 in order to more sensitively detect women with symptomatology in community settings (see Dennis, 2004; Murray & Carothers, 1990; Zelkowitz & Milet, 1995). The cases identified by the EPDS (at the lower cut-off of 9) but not by the DASS (n=19), were women (except for one woman) for whom EPDS scores were still below the commonly used cut-off of 12. This discrepancy between the two measures in classifying these 18 women is not seen as problematic given the fact that in practice, scores below the cut-off of 12 would render the scorers as not requiring follow-up.

Using the depression, anxiety and stress scales of the DASS-21, 94 women (29% of the total sample), were found to be postnatally distressed. This finding is consistent with Johnson et al. (1992) who found that 30% of postnatal women were emotionally distressed. It was identified that out of the total sample, 61 women were depressed, 18 women were anxious and 15 women were stressed. When assessing women for symptoms of anxiety and stress, it was revealed that 33 women (10% of the total sample), who were clearly distressed but who were not depressed, could have been overlooked if depression had been the sole marker upon which postnatal psychological disturbance had been based.

The present study also argued for particular attention to be paid to those women who had a combination of anxiety and depression (anxious-depression) given the findings of others regarding the at-risk nature of this sub-group in non-postpartum populations (Rivas-Vazquez et al., 2004). It was established by the DASS-21 that 23 women (7% of the total sample), were women who had a combination of depression and anxiety (anxious-depression). These women were found to manifest more severe depression scores on both the DASS-21 and the EPDS, which is consistent with reports by Rivas-Vazquez et al. (2004) that patients with “…comorbid depression and anxiety tend to manifest more severe symptoms” (p. 74). In addition, these anxious-depressed women were found to have poorer levels of maternal role satisfaction and lower satisfaction with life scores than their depressed and anxious and/or stressed counterparts. These findings point to the heightened level of emotional disturbance and reduced levels of well-being experienced by the anxious-depressed women as compared to the depressed and anxious and/or stressed women. These findings add further weight to the potential for this group to be at higher risk, and for this group to be appropriately identified and treated as such. Although it could be argued that the EPDS
detected most of the anxious-depressed women (i.e., 21 out of 23), the EPDS identified these women in the context of being likely to be depressed (the identification for which the EPDS was designed). It was the DASS-21 that could disentangle these 23 anxious-depressed women from those women who were classified as depressed.

Taken together, the prevalence findings of the present study corroborate the notion of others (Fisher et al., 2002; Green, 1998; Matthey et al., 2003) that to conclude that women are functioning well just because they do not fit the criteria for depression, is to enact a disservice to a potentially vulnerable group of postnatal women at a time when distress (anxiety and stress) may have far-reaching consequences. Similarly, to conclude that all women with a positive screening on the EPDS are depressed, is to potentially overlook the rich data that the DASS-21 can provide (as evidenced in the present study).

It could be argued that the 32 women classified as distressed by the DASS-21 but not by the EPDS, signals the possibility that the DASS-21 is a tool with low specificity (i.e., a poor capacity to identify non-distressed women as such). Indeed further clinical interview would be needed to ascertain the extent to which women meet the criteria for DSM-IV diagnoses. However, the utility of the DASS is its capacity to detect symptoms of depression, anxiety and stress (albeit mild symptoms) that might assist in the early assessment of women who might be vulnerable to worsening symptomatology at a critical time in the life cycle. Similarly, the capacity of the DASS-21 to disentangle classifications of depression, anxious-depression, anxiety (without depression), and stress, can only provide useful information in enhancing the detection of distress in new mothers, and in better informing treatment strategies.

The present study drew from the cognitive vulnerability-stress theories of depression and anxiety, and from the cognitive-phenomenological model of stress and coping. Within a cognitive-vulnerability stress model for postnatal distress, the present study examined a number of risk factors hypothesized to be associated with postnatal distress. The basic premise within these theoretical frameworks was that of the diathesis-stress interaction. It was generally posited that new motherhood (and the stressors associated with it) is a stressful life event that can trigger vulnerability in some women. Within this model, the present study emphasized cognitive factors, both as sources of stress, and as vulnerability factors, encompassing notions of appraisal (including expectations and characteristic ways of thinking), coping, and control.
Central to the theoretical underpinnings of this study was the notion of control, in light of the commonly reported experience of loss of control that can occur in both childbirth (Green, 1999; Green & Baston, 2003; Green et al., 1990) and in the adjustment to new motherhood (Lamble & Morris, 1999; Milgrom et al., 1999; Sharp & Bramwell, 2004). With respect to childbirth, distressed women were found to have higher ratings of feeling out of control during birth. This finding adds to other reports that women who experience feeling out of control during birth, are at risk for postnatal depression (Baker et al., 2005; Green, 1999; Green & Baston, 2003; Green et al., 1990).

In relation to perceptions of control in the postpartum, two control scales were developed, based on themes from the clinical reports of postnatal clients, and from reviewing the general control literature. The present study aimed to develop two conceptually distinct measures of perceived control: One measure that would tap into women’s appraisal of their levels of perceived control and order following the birth of their babies (the outcome), and a second measure that would tap into women’s motivation or desire for an outcome of control and order. Exploratory psychometric analyses verified the underlying structure and internal consistency of these two scales.

These scales were accordingly labeled, the Perception of Control and Order Scale (PerCOS) and the General Desire for Control and Order Scale (GeDCOS). The Perception of Control and Order Scale was conceived of as a measure to determine the extent to which women may lack control and order in their lives (i.e., a source of stress that reflects a current state). Scores on this scale were found to be lower for the distressed group than the non-distressed group of women, thereby pointing to the capacity for new motherhood to be a stressful life event. The General Desire for Control and Order Scale on the other hand, was designed to measure the extent to which women’s motivations for control and order might render them more vulnerable to distress (i.e., a vulnerability factor that reflects a trait). With the demands of a new baby, it was hypothesized that women’s usual control expectations, their need for order, predictability, and organization, and their usual strategies for attaining such, might be somewhat impaired and therefore be associated with distress. Not surprisingly, scores on this scale were found to be significantly higher for the distressed group than the non-distressed group of women.

Taken together, these findings show that perceptions of control have relevance to the postpartum. Perceptions of low levels of control and order (i.e., perceptions of low levels of predictability, routine, organization, feeling in control, things going
smoothly, etc.) can be conceptualized as a source of stress that is associated with women being postnatally distressed as compared with women whose perceptions of current levels of control and order are high. In relation to women who have a high pre-existing need for control and order (i.e., high expectations about control and order, and negative feelings associated with not having control and order), it appears that these women might be more vulnerable to postnatal distress than women whose general control expectations are low.

Further analyses revealed that scores on the Perception of Control and Order Scale, were significantly lower for anxious-depressed women than for their depressed only, and anxious and/or stressed counterparts, revealing that the lowest levels of control and order were found for women who were anxious-depressed. However, scores on the General Desire for Control and Order Scale did not differ significantly between the anxious-depressed group and the other two groups. The combination of anxiety and depression might therefore be associated more with perceived losses of external control and order (PerCOS) than with one’s expectations that control and order are important (GeDCOS). In relation to perceived control and order, it could be argued (along the lines of Seligman, 1975, and Walker, 2001) that the anxiety component of the anxious-depression occurs as a result of perceived losses of control and order, due to an uncertainty that controllability can be attained (i.e., helplessness). In contrast, it could be argued that the depression component occurs out of a hopelessness that the situation is ever going to be controllable. At this stage, these explanations are theoretically speculative, as the limitation of cross-sectional research means that a causal relationship cannot be established. In other words, the present study was not able to establish whether the perceptions of losses of control and order caused the anxious-depression, or whether the anxious-depression caused these perceptions. Further prospective research would need to be conducted to determine such a causal path.

Within the cognitive vulnerability-stress model, and central to the constructs of control, appraisal, and coping, was the concept in the present study of self-efficacy - both generalized self-efficacy, and self-efficacy in the specific domain of new motherhood (parenting self-efficacy). Generalized self-efficacy was seen to be a vulnerability factor to the extent that women who lacked trust in their general capabilities to master environmental demands, would tend to appraise tasks as threatening, and therefore experience distress in the face of this new and demanding life event of new motherhood (Jerusalem & Schwarzer, 1992). Results of the present study
confirmed that distressed women had significantly poorer levels of generalized self-efficacy than non-distressed women. Similarly, for women who doubted their ability to attain competence in the parenting role (Teti & Gelfand, 1991), it was anticipated that lower levels of parenting self-efficacy would be found for distressed women than for non-distressed women. This hypothesis was supported, with levels of parenting self-efficacy being significantly poorer for distressed women than for non-distressed women. This finding corroborates others regarding maternal self-efficacy being associated with postnatal depression (Gross et al., 1994; Teti and Gelfand 1991). In general, these findings support the notion that poor perceptions of self-efficacy (both generalized and domain specific) form part of the experience of negative affective states such as depression, anxiety and stress (Bandura & Locke, 2003; Jerusalem & Schwarzer, 1992). For the postnatal period specifically, the findings of the present study suggest that self-efficacy can be both a vulnerability factor (in the form of generalized self-efficacy) and a source of stress (in the form of perceived self-efficacy in the parenting domain).

In relation to the three distress groups, scores on both generalized self-efficacy and parenting self-efficacy differed significantly for the anxious-depressed group as compared to the depressed-only group and the anxious and/or stressed group. These findings suggest that self-efficacy has specific relevance to the sub-group of postnatal women who are anxious-depressed. It can be speculated that when individuals experience uncertainty about their ability to control outcomes, the results can be anxiety, and when this lack of control increases, anxiety can be accompanied by depression (Alloy et al., 1990). Future prospective research might determine the causal path in relation to both generalized and parenting self-efficacy.

The final measure of control, investigated in the present study, was that of perceived control of internal states – the extent to which women rated themselves as capable of exercising control over their thoughts, feelings, and reactions. This capacity to control one’s internal states can also be conceived of as a coping resource, which is a core component of the stress and coping paradigm. Pallant (2000) suggested that when individuals are faced with situations that have limited capacity for external control, control of their internal states can help to minimize the distress caused by the event (e.g., having beliefs and strategies to manage thoughts, feelings and reactions). With the unpredictability and uncontrollability that can occur alongside the demands of a new infant, it was proposed that women with low capacities to control their internal states,
would be more likely to be distressed than women with high capacities to do so. Results supported this hypothesis, showing that distressed women had significantly lower perceived control of internal states scores than non-distressed women. Furthermore, anxious-depressed women were found to have lower scores on perceived control of internal states than women who were depressed-only and women who were anxious and/or stressed. Although this finding was not significant at the adjusted significance level of .01, the significance level marginally exceeded this more stringent criteria (i.e., .015), and would have been reported as significant at the traditional .05 level had the analysis not been part of a series of repeated analyses.

Taken together, the findings regarding perceived control of internal states, can be interpreted in light of internal control (i.e., control of internal states) being a part of the appraisal process, whereby individuals who perceive that they have little control over their internal states are likely to appraise events as more threatening, be less likely to deal well with the emotional impact, and be less effective in their response to the event. Postnatal distress has been conceptualized in the present study as a classification on one or more of the subscales of depression, anxiety and/or stress. The findings with respect to perceived control of internal states, make sense given the items that tap into one’s capacity to relax and calm oneself when under stress, keep thoughts under control, and believe that one can talk oneself out of “feeling bad”. These types of items appear to have relevance to depression, anxiety and stress, in that they tap into both agitated feelings and negative feelings. It is plausible that the lack of an individual’s capacity to control her thoughts, feelings and emotions, could be associated with not only the onset of negative affective states, but the maintenance of these states. Further research would be required to establish such a trajectory.

Two further vulnerability factors were explored within the cognitive vulnerability-stress model for postnatal distress in the present sample (perfectionism and fear of negative evaluation). These factors constitute characteristic ways of thinking and incorporate the notion of appraisal (which is a central construct within the stress and coping paradigm) (see Folkman, 1984). The first of these two measures was that of perfectionism (MPS; Hewitt & Flett, 1991b). Perfectionism was a variable of interest in the present study based on general findings that have shown this characteristic to be associated with psychological distress (Chang et al., 2004; Shafran & Mansell, 2001), especially during stressful periods (Hewitt & Flett, 1996; Hewitt et al., 1996). Hewitt and Flett (1993) asserted that perfectionistic beliefs contain rigid
evaluations upon which individuals appraise themselves. In keeping with the self-awareness theories of depression, perfectionists hold cognitions about the attainment of ideal standards, and tend to focus on their failure to meet these standards (Flett et al., 1998). In relation to postnatal populations specifically, perfectionism was a variable of interest due to the likelihood that new motherhood limits the capacity for women to attain perfectionistic goals or standards. *Perfectionism* is an individual characteristic that has been noted in the clinical presentations of some postnatally depressed women (as seen by the author, and asserted by Milgrom et al., 1999). Therefore, *perfectionism* was a variable of empirical interest in the present postnatal population.

Findings confirmed that *perfectionism* scores (both *self-oriented* and *socially-prescribed* perfectionism scores) were significantly higher for the *distressed* group than for the *non-distressed* group. These findings suggest that *perfectionism* is a vulnerability factor for *distress* in postnatal women. This finding is supportive of the notion that perfectionistic individuals set themselves excessively high standards (involving self-related and social components) and failure to attain these standards can be associated with *distress* (see Hewitt & Flett, 1993). The findings in relation to *perfectionism* fit with the self-awareness theories whereby when individuals perceive a discrepancy between their current status and their goals and standards, this discrepancy can lead to psychological distress (Carver et al., 1996; Strauman & Higgins, 1993).

Future research might assess the extent to which perfectionistic traits might influence the way in which women appraise other factors, such as the difficulty of their infants; the quality/satisfaction of their relationship; and their use of/satisfaction with social support. All of these factors have been established as risk factors in previous postnatal depression research (see Pope, 2000). Given that *perfectionism* was found in the present study to be related to postnatal *distress*, it could be of empirical interest to establish the causal relationship between *perfectionism* and these infant-related, relationship-related, and social support-related variables. *Other-oriented perfectionism* (which was not investigated in the present study) - an interpersonal dimension within the MPI involving the need for *others* to be perfect (Hewitt & Flett, 1991b; Hewitt et al., 1996) - might be an interesting aspect of *perfectionism* to investigate in postnatal women in the context of variables relating to social support and partner relationships.

Unlike other measures found to differ significantly between the *anxious-depressed* group and the other two *distress groups*, *perfectionism* scores did not significantly differ, suggesting that perhaps perfectionism is related in a similar way to
each of the three groups. Because each of the three distress groups includes either depression or anxiety as part of its symptoms profile, this finding may reflect the findings of others regarding perfectionism being associated with both depression (Blatt, 1995; Frost et al., 1990; Hewitt & Dyck, 1986; Hewitt & Flett, 1990, 1991a, 1991b) and anxiety (Alden et al., 2002; Antony et al., 1998; Flett et al., 1994/1995; Frost & DiBartolo, 2002; Frost et al., 1990; Johnson & Slaney, 1996; Kawamura et al., 2001).

The second vulnerability factor constituting a characteristic way of thinking was that of fear of negative evaluation (Leary, 1983), which is a similar construct to socially-prescribed perfectionism, in that taps into social evaluative concerns. Fear of negative evaluation measures the extent to which women were apprehensive about the prospect of being evaluated negatively (Leary, 1983). It was proposed in the present study that new motherhood involves being in a public domain, whereby new mothers are subject to the scrutiny of others. It was therefore anticipated that women with high fear of negative evaluation scores would be more vulnerable to postnatal distress than women whose fear of negative evaluation scores were low. Findings revealed that women’s levels of fear of negative evaluation were significantly higher for the distressed group of women compared to the non-distressed women, pointing to the relevance of this measure to postnatal distress. This finding is suggestive of fear of negative evaluation being a vulnerability factor for the development of postnatal distress, although prospective studies would need to confirm this. Individuals who have high levels of fear of negative evaluation tend to avoid potentially threatening social situations (Heimberg et al., 1995) and social comparisons, and indicate that they feel worse about receiving negative feedback (Leary, 1983). The implication for new mothers with high levels of fear of negative evaluation, is that they could be likely to avoid social situations, become socially isolated as a result, and minimize the potential for social support (a factor that has been commonly linked to good postnatal adjustment).

With respect to the three distress groups, it was found that fear of negative evaluation differed significantly between the anxious-depressed women and the depressed only women, but not between the anxious-depressed women and the anxious and/or stressed women. However, using an adjusted significance level of .01, this finding did not reach significance (at .031). Nevertheless the trend suggests that fear of negative evaluation has more relevance to anxiety and stress than it does to depression,
which supports other research findings that have linked fear of negative evaluation to anxiety, in particular social anxiety (Heimberg et al., 1995; Leary, 1983).

Many new mothers report the phenomenon of unsolicited opinion and advice that is offered to them by a range of people (clinical reports to the present author, and Lamble & Morris, 1999). A unique contribution of the present study was that of women’s perceptions of criticism and judgement of others. Indeed, the present study confirmed this phenomenon by assessing the extent to which postnatal women rated feeling judged or criticized by significant others. It was found that the distressed women rated their own mothers, their partners, their own families, and other parents as significantly more critical than non-distressed women. These findings show empirical support for the clinical reports of postnatal women that criticism/judgement is a common experience for new mothers, and that it is significantly associated with postnatal distress. In particular, the finding regarding distressed women perceiving their own mothers as critical/judgemental is in-keeping with that of Matthey et al. (2000) regarding women’s perceptions of their mothers as over-controlling, and that this perception is a risk factor for postnatal depression (also see Fisher et al., 2002).

Another interesting finding was that 52% of women reported feeling criticized or judged in relation to how they dealt with their babies’ sleep. This is an important finding in light of women’s ratings of infant difficulty being most significantly correlated with sleeping problems. It would seem that within the cognitive vulnerability-stress model (see Figure 4), the judgements or expectations of others have the potential to impact the way in which women experience their babies (i.e., perceived infant difficulty), and possibly their perceptions of control and order, and their feelings of parenting self-efficacy. Conceptually, the judgements of others may well have an impact on how women appraise many other areas of their lives (e.g., their births, life events, their relationship), and the extent to which they experience distress as a result. Future research might examine these relationships.

It could be the case that women with high fear of negative evaluation and possibly high perfectionism scores (in particular, socially-prescribed perfectionism), may experience and rate other people as more critical and judgemental than they actually are, due to their heightened sensitivity in the social realm. Unfortunately the design of the present study could not disentangle this relationship. It could be the case in the present study, that postnatal fear of negative evaluation scores were inflated (as compared to prior to pregnancy/birth) as a function of the extent to which people freely
offer their opinions and judgements at this time. Future, prospective research would help to establish whether this is the case.

Although not the focus of the present study, there were a number of findings here that confirmed other well-established risk factors for postnatal depression. These variables were found to significantly differ in relation to distressed versus non-distressed women. Distressed women, compared to non-distressed women were found to have significantly higher retrospective ratings of antenatal depression and antenatal anxiety; reported significantly higher levels of feeling out of control during birth; rated their babies as significantly more difficult (with excessive crying and sleep problems being the most significantly correlated problems associated with the ratings of infant difficulty); reported significantly lower levels of relationship quality; and reported lower levels of social support (see Pope, 2000; SIGN, 2002). With respect to demographic variables, significantly more women with non-tertiary levels of education were in the distressed group than women with tertiary levels of education. This result is consistent with the findings of others (Bernazzani et al., 1997; Tammentie et al., 2002) who showed that fewer years of education were associated with higher depressive symptoms. However, broader indicators of distress used in the present study might in fact be tapping into factors associated with socio-demographic disadvantage that may co-exist with lower levels of education. In other words, symptoms of stress that form part of the broader assessment of distress, might be a reflection of other life stressors or social problems experienced by women in the non-tertiary educated group. Other demographic variables did not significantly differ between distressed from non-distressed women (see Terry et al., 1996).

An important part of the present study was the assessment of the significant variables (as identified in univariate analyses) and their relative contribution to postnatal distress, within the context of the cognitive vulnerability-stress model. By using multivariate analyses (i.e., logistic regression analyses), the relative contribution of individual variables could be determined when holding other variables constant. A series of logistic regression analyses (according to conceptual groupings) culminated in a final model that identified the strongest predictors of postnatal distress.

A number of noteworthy findings can be summarized from the results of the final model. Most importantly, the notion of control as an important factor in the postpartum ‘picture’ was borne out of the findings in the final model. As noted by Shapiro and Astin (1998), individuals strive to attain control in their lives, and fear the
prospect of losing control - both over their external environments and their internal perceptions and states. Low levels of control have consistently been linked to psychological distress (Barlow, 2000; Burger, 1989; Chorpita & Barlow, 1998; Rapee et al., 1996; Walker, 2001). Three control-related variables were found to significantly increase the likelihood of postnatal distress in the present sample. (1) Low levels of perceived control and order over the external environment (a source of stress in the cognitive vulnerability-stress model), (2) low levels of parenting self-efficacy (an internal representation of women’s sense of competence as mothers, posited as a source of stress), and (3) low levels of perceived control of internal states (an internal perception regarding women’s perceived capacities to control their thoughts, emotions, and physical reactions – a vulnerability factor). These findings demonstrate a relationship between low levels of external and internal control and postnatal distress.

The social realm of motherhood was also highlighted by the results of the final model. Women who scored high on fear of negative evaluation were significantly more likely to be in the distressed group than those women who scored low. Similarly those women who rated their mothers as highly critical/judgemental were significantly more likely to be in the distressed group than women who did not rate their mothers in this way. These findings point to some possible clinical implications. Women with high fear of negative evaluation scores may avoid turning to potential social supports and social networks, for fear of being judged negatively and appearing inadequate. The risk of this is social isolation. Similarly, women who perceive their mothers as highly critical/judgemental may either distance themselves from the potential support of their mothers, or may suffer from diminishing self-perceptions in the face of expressed criticism. A prospective study design would help to determine the cause and effect of these variables on women’s use or avoidance of social support, and the extent to which distress is the result.

Although not the focus of the present study, the final model also confirmed the importance of two factors that have consistently been linked to distress in the postpartum – poor relationship quality (conceptualized as a source of stress within the cognitive vulnerability-stress model), and antenatal depression (conceptualized as a vulnerability factor within the cognitive vulnerability-stress model) (see Pope, 2000).

In summary, the present study substantiates the need to assess postnatal women for broader indicators of negative affect other than that of depression. Findings in relation to anxious-depression add to the findings of others regarding this sub-group of
patients being more at risk than depressed only patients. This is evidenced in particular by the findings in the present study that anxious-depressed women rated significantly poorer on a number of measures (including maternal role satisfaction and general life satisfaction). It could be argued that these findings (i.e., ratings on a number of measures that differed significantly between the anxious-depressed group compared to the depressed and anxious and/or stressed groups) are a function of these women simply being more distressed. Indeed these women received higher scores on both the EPDS and the DASS-depression scales. Whether these women’s heightened distress brought about their poorer ratings on the measures assessed, or whether rating poorer on these measures contributed to their comorbid symptomatology, these findings are still pertinent to clinicians’ broader assessment of the postnatal picture.

Evidence for variables proposed to be both sources of stress and vulnerability factors in the postpartum, provides preliminary support for the proposed cognitive vulnerability-stress model for postnatal distress. This model is derived from the cognitive vulnerability-stress models of depression and anxiety, and the cognitive-phenomenological model of stress and coping. Within the proposed model, unique risk factors for postnatal distress were identified, drawing from the theoretical underpinnings of appraisal and control as central factors in stress, coping and adaptation. These findings set the stage for future prospective research to establish, within a cognitive vulnerability-stress model, the trajectory within which these variables operate.

4.2 Limitations of the present study

The present study highlights the prevalence of postnatal anxiety and stress over and above that of depression, and shows significant findings for the association between a unique set of cognitive variables and postnatal distress. However, a number of limitations of the present study need to be considered. With respect to respondents, women were recruited from mothers’ groups, health centres, and doctors’ surgeries by placing posters encouraging women to collect and complete a questionnaire concerning their experience of first time motherhood. Individual women were not approached directly by the researcher. Given the non-intrusive data collection procedure used in this study there was no way of assessing the representativeness of the women choosing to volunteer. The high proportion of tertiary educated women (i.e., two thirds of the
sample) may be a reflection of a self-selection bias, with highly educated women being
more willing or motivated to take the time to complete and return the questionnaire.
This disproportionate number of educated women might imply a skew towards higher
socio-economic status (a variable that was not measured). Both of these factors limit
generalizeability in that the prevalence of postnatal distress, as well as the factors found
to be associated with postnatal distress, might be different for women who have lower
levels of education, or who are of a lower socio-economic status. Future research might
use sampling designs that allow a more representative sample of women from a wider
variety of backgrounds, and socio-economic and educational levels.

In relation to the measurement of postnatal distress, only self-report instruments
were used to measure caseness. No formal diagnostic structured interviews were
conducted in order to provide a gold standard against which to validate the DASS-21
for its use in postnatal populations. Further research may help to validate the DASS-21
in this way, and might consider validating the DASS-21 in its assessment of distress in
populations of antenatal women (see Austin, 2004; Green, 1998) and multiparous
women. In addition, the mean scores on depression, anxiety and stress in the present
sample, were lower than those reported in the normative DASS data (S.H. Lovibond &
P.F. Lovibond, 1995). This finding might reflect the non-representative nature of the
present sample as compared with the general population sampled by Lovibond and
Lovibond (1995). Alternatively, this finding might be a result of a younger sample (i.e.,
women 18 to 44 years) being compared to an older normative population (i.e., women
17 to 69 years). There is also the possibility that postnatal women are simply happier in
general, compared to women in the general population. This is difficult to assess with
the age disparity of the populations compared, and in the absence of a control group.

With respect to the study design, this study relied solely on self-report data,
taken at one point in time. No causal conclusions can be drawn from cross-sectional
data, as this design makes it difficult to disentangle the manner in which processes
unfold over time (Wenzel et al., 2005). In other words, women’s ratings on measures
such as antenatal mood; their experience of birth; their perception of infant difficulty;
their ratings of stressful life events; their perception of the quality of their relationships;
their perception about social support; and their perceptions about the extent to which
others are critical/judgemental of them may be confounded by their current mood (e.g.,
depression), or in fact by their characteristic ways of thinking (such as perfectionism,
fear of negative evaluation). A longitudinal study design, with multiple measurement
points (ideally pre-pregnancy, during pregnancy, and postnatal measurement points), and/or objective ratings (e.g., partner ratings) could address these limitations in future research. This type of future research could contribute further to our understanding of the causal nature of the variables found to significantly differ when distressed women were compared to non-distressed women in the present study. In addition, longitudinal data that includes measures of mood in pregnancy, allows for the minimization of the potential confounds of antenatal mood on postnatal mood. For example, Hipwell et al. (2004) identified cognitive markers of vulnerability by using a prospective study design, which allowed for the relationship between cognitive measures and postnatal depression to be assessed over and above the variance shared with antenatal mood. This type of study design could also verify the extent to which various cognitive measures are in fact stable traits (i.e., general desire for control and order, generalized self-efficacy, perceived control of internal states, perfectionism and fear of negative evaluation), and are not artifacts of the postpartum. According to Boyce et al. (1991), distinct personality traits that may serve as vulnerability factors may be obscured by current mood, and thereby require a prospective design in order to establish their predictive role. Once empirically verified, these measures could then be assessed clinically during pregnancy, in order to identify women who might be at risk for experiencing subsequent distress in the postpartum (Hipwell et al., 2004).

Two important variables were not measured in the present study, and are worthy of consideration for future investigations of the present proposed model. One variable is previous psychiatric history, and the other is neuroticism. Previous psychiatric history has been commonly shown to predict postnatal depression, although not all studies have found this to be the case (see Pope, 2000). For future studies that might replicate the present set of variables, and the extent to which each variable predicts postnatal distress, a measure of previous psychiatric history (including depression, anxiety and stress) could be included.

In relation to neuroticism (a tendency towards more extreme appraisals of stress and the exacerbation of the effects of stress), this variable is commonly statistically controlled for in cognitive and personality research (Hipwell et al., 2004) in order to partial out the effects of neuroticism from the cognitive measures of interest. However there have been equivocal findings in relation to neuroticism in the postnatal literature (Hipwell et al., 2004; Pope, 2000). Some authors have found neuroticism to be an important factor that discriminates postnatally depressed from non-depressed women,
and others have not (see Hipwell et al., 2004; Pope, 2000). Future investigations of the present proposed model might include a measure of neuroticism in an effort to minimize the potential confounds of this variable on both predictors and outcome measures.

Despite the limitations discussed here, the present study points to the need for a broader assessment of distress in the postpartum, and provides preliminary data to support the framework of the proposed cognitive-vulnerability model for postnatal distress in which control plays a major part.

### 4.3 Clinical implications

For as long as the focus of postnatal maladjustment is on depression, failure to identify significant symptoms of anxiety and stress, may render women distressed without treatment, and as a consequence, vulnerable to worsening symptomatology (Matthey et al., 2003). The ramifications of untreated maternal distress could be significant for the ongoing well-being of the mother, her relationships and her infant. The DASS-21 is a brief (one-page, 21-item inventory) that may assist practitioners (along with clinical interviews) to more effectively assess, and ultimately treat, the distress encountered by new mothers in the postpartum. The DASS-21 appears to be a useful tool for broadening the criteria for postnatal distress over and above that of depression to include anxiety and stress. The DASS-21 also appears to be a good accompanying scale to the EPDS, by providing continuous ratings of severity on the three negative emotional states of depression, anxiety, and stress. An important use of the DASS-21 has been highlighted in the present study in terms of its capacity to disentangle women who are anxious-depressed from those women who are depressed-only. The findings of the present study, along with the findings of others (e.g., Fawcett, 1997; Matthey et al., 2000; Rivas-Vazquez et al., 2004) suggest that this group of women may be at heightened risk, and may require specific treatment strategies for both sets of symptoms (Milgrom et al., 1999).

With a broader and more accurate classification of postnatal distress using the DASS-21 (and in combination with clinical interviews), clinicians may be better informed about the distinct and comorbid sets of symptoms their clients are experiencing. This may provide an opportunity for appropriate treatments to be selected that target the symptoms and aetiology of each set of symptoms specifically
For example, when anxiety and stress are identified, therapists may be more likely to assist women with anxiety- and stress-management techniques as part of a cognitive-behavioural therapy approach (Milgrom et al., 1999). These techniques include relaxation training, time-management strategies, problem solving skills, strategies to reduce and cope with stressors, and challenging unhelpful thoughts or unrealistic expectations (Milgrom et al., 1999; Ross et al., 2003). According to Kush (2004), when anxiety and depression co-exist, the aetiology of both sets of symptoms (i.e., the related historical experiences), as well as the specific triggering stressors (idiosyncratic to both sets of symptoms), need to be explored.

With respect to specific anxiety disorders in the postpartum, the DASS-21 might serve as a useful starting point for detecting the presence of anxiety symptoms. Clinical diagnostic interviews could then be used to confirm the extent to which women might meet the criteria for specific anxiety disorders such as Generalized Anxiety Disorder (GAD), Obsessive Compulsive Disorder (OCD), Panic Disorder (PD), Social Anxiety Disorder (SAD), and Post-Traumatic Stress Disorder (PTSD) (See Ross & McLean, 2006). Wenzel et al. (2005) found that GAD was more common in postnatal women than women in the general population. Lovibond (1998) reported that the worry associated with the DSM-IV definition of GAD is more closely associated with tension-stress symptoms (in the Stress scale of the DASS) than with the autonomic arousal symptoms (in the Anxiety scale of the DASS). Further research using diagnostic interviews could confirm the predictive utility of the DASS in relation to specific disorders, such as GAD, in the postpartum.

The DASS-21 may also have application for identifying broader indicators of distress in women during pregnancy. Several authors have recommended the screening of antenatal depressive symptomatology, based on the association between antenatal depression and postnatal depression (Green, 1998; Matthey, 2005; see O’Hara & Swain, 1996). In contrast, few authors have investigated the occurrence and predictive nature of antenatal symptoms of anxiety. Sutter-Dallay et al. (2004) suggested that antenatal anxiety symptoms in pregnancy are often too hastily considered by midwives and obstetricians as part of the normal psychological experience of pregnancy. These authors advise that women be assessed for antenatal symptoms of anxiety. According to other authors, anxiety occurs frequently in pregnancy, and increases the likelihood of postnatal depression (e.g., Da Costa et al., 2000; Heron et al., 2004). Austin (2004) made a strong case for early detection and treatment of distress in pregnancy, with a
view to aid in the reduction of postnatal depression and anxiety. The DASS-21 may be a useful tool for this purpose.

Another possible application of the DASS-21 could be to assess the negative affective states of partners, following the birth of a baby (see Matthey, 2004; Matthey et al., 2003). Within the stress and coping paradigm, new parenthood represents a stressful life event for both mothers and fathers (Matthey et al., 2003). Given the significance of the marital relationship on women’s postnatal adjustment (see Pope, 2000; SIGN, 2002), it makes sense to – where possible – have concurrent measures of depression, anxiety and stress for fathers as well as mothers. This is particularly relevant for practitioners who work systemically or who work with couples in the postpartum.

Within the proposed cognitive vulnerability-stress model, other clinical applications of the findings of the present study, pertain to the findings that show a set of cognitive factors (both sources of stress and vulnerability factors) to have relevance to postnatal distress. Notably, the development here of the Perception of Control and Order Scale (PerCOS) and the General Desire for Control and Order Scale (GeDCOS), means that these two brief scales (consisting of nine items each), can be used to facilitate practitioners’ understanding of the extent to which women perceive a lack of control and order in the postpartum (PerCOS), and the extent to which women are generally motivated to attain control and order (GeDCOS). The present study provided empirical data to support that these two measures differed significantly when distressed women were compared to non-distressed women in the postpartum. Although in clinical settings, women might report these phenomena over the course of therapy, these scales offer an opportunity for therapists to assess and address these control issues more directly, and perhaps more efficiently. Therapy might be aimed at enhancing time-management strategies and problem solving skills, as well as challenging unhelpful thoughts and unrealistic expectations (Milgrom et al., 1999). Women may benefit from recognizing that other settings might have facilitated their capacity to attain control and order or to have their needs for control and order to be met (e.g., in the workplace). However, part of adjusting to new motherhood can involve a re-appraisal of what is possible to achieve, and a re-definition of what is important (Napthali, 2003).

The findings of the present study in relation to maternal self-efficacy, point to the importance of assessing women’s levels of perceived self-efficacy – both as a general vulnerability factor, and in relation to the parenting role specifically (a potential
source of stress). This could be done with a view to enhancing the self-efficacy of new mothers through a number of approaches: Psycho-education that involves enhancing practical skills in relation to caring for infants (Choi et al., 2005); the provision of problem solving strategies (Milgrom et al., 1999); admission into a Mother-Baby Unit (particularly given that infant sleep problems and excessive crying were the items endorsed as most significantly correlated with ratings of infant difficulty in the present study) (Fisher et al., 2002); and cognitive-behavioural therapy (i.e., identifying and challenging unhelpful core beliefs and cognitive distortions) (Beck, 1995). Hipwell et al. (2004) suggested that attention be paid to positive aspects of prior coping as a basis for generating new solutions to problems that arise in the postpartum. Using the Positive Psychology approach (Seligman, 2002), therapists could assist women in identifying their pre-existing strengths and adaptive qualities, from which to reconstruct their sense of self-efficacy. Psychodynamic and family therapy approaches might assist women to understand the historical factors that contributed to the development of their expectations and their views of themselves (Milgrom et al., 1999).

Another feature of the findings relates to women’s characteristic ways of thinking. The findings for perfectionism and fear of negative evaluation offer additional information that might assist clinicians. Scores on both of these measures were found to be higher for postnatally distressed women than for non-distressed women. This means that anecdotal reports about perfectionistic tendencies being part of the clinical profile of some postnatally depressed women (Milgrom et al., 1999), is now supported with empirical data. Similarly, a role for fear of negative evaluation as an important factor in postnatal distress, has also been identified. The clinical implications of the findings in relation to perfectionism and fear of negative evaluation are that postnatal women could be assessed specifically for their scores on these measures. In settings where this level of psychometric assessment is not possible (e.g., maternal and child health centres), midwives could at least ask women if they think of themselves as perfectionists, and whether they worry about how they appear in the eyes of others. For women who are highly perfectionistic and who have significant fears about being negatively evaluated, a central treatment focus might include assisting them with reducing the importance of seeming perfect to others, and assisting them in removing the associated catastrophic images and awfulizing beliefs about being perceived as ‘imperfect’ (Flett et al., 2004) or indeed about being ‘judged’ in general. Expectations of being the ‘perfect mother’ might be challenged in light of deriving
more achievable personal expectations, and a healthier sense of competence along the lines of Winnicott’s (1965) notion of the good enough mother. Furthermore, from a broader socio-cultural perspective, women may benefit from a therapeutic context within which to challenge the common cultural representations (i.e., the myths of motherhood) to which they may have been subscribing. In this way, self-to-standard discrepancies might be minimized (see Carver et al., 1996; Strauman & Higgins, 1993), along with associated distress (Veith, 2003). Sharp and Bramwell (2004) emphasized the need for therapists to be mindful of their own views and their assumptions of motherhood, and of what infants need. These authors stated that therapy could assist women to accept that there is no one right way to mother, and that therapy could help individual women to find a good enough path that fits with themselves and their infant.

Further weight was provided by the present study about the relevance of assessing the postnatal woman’s interpersonal domain. Many previous studies refer to the clinical relevance of assessing women’s social support networks, to the extent that limited supports have been associated with increased levels of postnatal depression (see Pope, 2000; SIGN, 2002). The present study supported this notion showing a significant difference on social support for distressed women compared to non-distressed women. However, it has been postulated by some authors (Norwood, 1991; Rook, 1992), that social support can have a negative influence on supportees. Although this was not measured directly in the present study, it was established that potential supporters (such as women’s own mothers, their own families, their partners, and other parents) were rated as significantly more critical/judgemental by distressed women than by non-distressed women. The present study therefore points to the relevance of assessing the extent to which women perceive significant others to be critical and judgemental of them (particularly their own mothers). Further research would need to establish the extent to which critical/judgemental social supporters exert a negative influence on postnatal women, and affect the extent to which women avoid accessing their ‘support’ as a result. Simply asking women to rate the extent to which they feel criticized or judged by their mothers (in particular) and by significant others, might provide useful information for understanding the social stressors that may be impacting upon them in the postpartum. Assisting women in the process of differentiating their view of themselves from the expressed opinions of others, may be a helpful approach for women whose distress relates to their perceptions that they are being criticized or judged (Schnarch, 1999).
It may be useful to inform women of the findings of the present study that depict the numerous and varied areas of motherhood about which women feel criticized and judged. These areas include feeling judged about how women deal with their babies’ sleep, crying, feeding (e.g., for not breastfeeding and for breastfeeding), and settling; feeling judged about how women look after their babies, how their house looks, how they interact with their babies, the birth of their baby; their babies’ ‘behaviour’; feeling judged about going back to work and not going back to work; feeling judged about using childcare and not using childcare; feeling judged about their babies being over-dressed and being under-dressed. It might be helpful for women to acknowledge that all their actions, decisions, and choices are subject to the judgements and opinions of others. Indeed, every person has the ‘expert’ status of having been a child themselves, and this may therefore give them the perceived right to pass comment. There might be a useful gain in accepting judgement (i.e., seeing it as a reflection of the other person’s views and assumptions), rather than fearing it (i.e., seeing it as a reflection of self). Women might therefore be assisted in seeing difference in choices, opinions and behaviour as interesting rather than threatening. This notion is encapsulated in one respondent’s (unsolicited) quotation on her returned questionnaire. She wrote, “you’re damned if you do and you’re damned if you don’t, so you might as well do what you damned well please”. Assisting women in working towards unconditional self-acceptance (as opposed to conditional self-worth that is commonly associated with distress) (Lundh, 2004) might afford women the freedom to experience motherhood with minimal levels of fear, self-doubt and distress.

Finally, and perhaps most notably, are the findings in relation to perceived control of internal states. The findings of the present study showed that women who were distressed had poorer self control scores than women who were not distressed. In addition, despite not reaching significance at the adjusted significance level of .01, scores on perceived control of internal states, were found to be lower for anxious-depressed women than women who were depressed or anxious and/or stressed. It has been posited that good adjustment involves the capacity of the individual to use either primary control (attempts to control the external environment) or secondary control (accepting the external environment as it is, but having control over one’s internal thoughts, emotions and physical reactions) (Rothbaum et al., 1982). Diminished control over the external environment is a phenomenon that is commonly reported to be associated with caring for an infant (Lamble & Morris, 1999). Lamble and Morris
(1999) suggested that it is equally important for new mothers to strive to gain control as it is to relinquish control. Therapists can work with women to assist them in determining whether striving for control or relinquishing control are in fact adaptive or self-defeating strategies in a variety of situations. Therapists can help women to minimize the impact of uncontrollable external events on their emotional and physical well-being (Pallant, 2000). The capacity of individuals to exercise internal control of their emotional responses is associated with good adjustment in the face of external uncontrollability (Folkman & Lazarus, 1985). Cognitive-behavioural interventions that focus on assisting women to challenge and manage their internal expectations, responses, and associated behaviours, may be beneficial for postnatal women who have difficulties managing their internal states.

The present study contributes to the existing literature by demonstrating the significance of number of cognitive and social measures relevant to postnatal women. However, future research is required to confirm the prospective nature of the factors proposed as being vulnerability factors (i.e., generalized desire for control and order, generalized self-efficacy, perceived control of internal states, perfectionism, and fear of negative evaluation). The extent to which these factors operate as pre-morbid vulnerability factors within the diathesis-stress framework is an area for ongoing research. Once this is confirmed, there may be a role for assessing these factors in pregnancy, and working with women towards minimizing the potential negative impact of these vulnerabilities through preventative therapy strategies such as cognitive behavioural therapy and psycho-education (Milgrom et al., 1999). In addition, further research might investigate interactive relationships between the variables within the present study. This may provide a more comprehensive depiction of the cognitive vulnerability factors and the conditions under which these factors might be triggered, which could assist in identifying women who are at increased risk for postnatal distress.

Sharp and Bramwell (2004) proposed that different vulnerability factors occur at different times in the postnatal period as the demands of mothering change. Ongoing research might assess the vulnerability factors used in the present study, to determine the extent to which they might be triggered as motherhood-related stressors change. For example, it might be interesting to assess the extent to which a difficult, typically-messy, toddler might trigger vulnerability in women who have perfectionistic tendencies, high desires for control and order, or tendencies towards fearing the negative evaluation of others. Similarly, it might be interesting to assess the extent to
which the toddler phase affects women’s parenting self-efficacy, and the extent to which women’s capacities for control of their internal states might ameliorate the difficulties inherent in this phase of child development (see Eisenberg, Murkoff, & Hathaway, 2001).

4.4 Conclusion

Within a cognitive vulnerability-stress model of postnatal distress, all women are susceptible to experiencing distress in the postpartum. Pregnancy and childbirth in themselves constitute stressful life events (Hipwell et al., 2004), and so too are the changes and demands that accompany new motherhood (Milgrom et al., 1999). However, some women may have an increased risk or are more vulnerable than other women for experiencing distress in the postpartum (Hipwell et al., 2004). According to Fisher et al. (2002), “…effective interventions require accurate and complete appraisal of presenting problems” (p. 144). The present study has contributed to the existing literature and potentially to the knowledge-base of clinicians who work with postnatal women, in the following ways: (1) A case was made for the expanded assessment of postnatal distress to include depression, anxiety and stress, using the DASS-21. This was highlighted by the prevalence of women who had symptoms of anxiety and/or stress, who would not have been detected using the criteria for depression alone. As researchers and clinicians, there is a role for encouraging women to seek help if they are feeling anxious and/or stressed as new mothers, and that they don’t necessarily have to be feeling depressed for help to be sought. Women need to be encouraged to seek help for any difficulties they may be facing in new motherhood, such as feelings of anxiety and agitation, worry about their babies and their abilities to cope, and general heightened levels of stress. (2) A number of previously established risk factors that have been associated with postnatal depression (antenatal depression and anxiety, feeling out of control during birth, infant difficulty, stressful life events, relationship-quality before and after birth, and social support) were further confirmed in relation to postnatal distress. These findings reiterate the importance of assessing the psychosocial factors that may be impacting upon women’s postnatal adjustment (Boyce, 2003; Pope, 2000). (3) Findings in relation to perceived criticism/judgement of others (in particular, of women’s own mothers), and the relationship of these ratings to postnatal distress, highlighted the importance of assessing the extent to which women’s interpersonal
relationships might be negatively impacting upon them. (4) An important role for control in the postpartum was identified - both sources of stress (perception of control and order and parenting self-efficacy) and vulnerability factors (generalized desire for control and order, generalized self-efficacy, and perceived control of internal states). Although causal relationships could not be established within the design of the present study, these findings still emphasize the relevance of control-related factors within the clinical profile of postnatal distress. (5) A role for characteristic ways of thinking (perfectionism and fear of negative evaluation) in relation to distress in the postpartum, was established. Once again, a causal relationship was not verified, however it appears from the findings of the present study, that these factors may constitute vulnerability for postnatal women. These findings provided empirical data to support the suggestion that perfectionism can be part of the clinical profile of some women (Milgrom et al., 1999). The present findings also point to the importance of women’s fears of being negatively evaluated being significantly associated with postnatal distress. A concern borne out of this study is the possibility that postnatal women who are highly fearful of negative evaluation or who are highly perfectionistic might not seek help for fear of being judged or for fear of feeling like they have ‘failed’. This potential problem signals the need for practitioners who work at the front line with postnatal women (i.e., maternal and child health nurses and general practitioners) to be aware of these individual characteristics, and perhaps to attend more carefully to such women who might be concealing their distress. (6) Significant differences were found between the anxious-depressed women and their depressed-only counterparts. First, anxious-depressed women had higher depression scores than women with depressive symptoms only, supporting the findings of Rivas-Vazquez et al. (2004). Second, anxious-depressed women had significantly different scores than the other cohorts of distressed women, on a number of key control-related variables (i.e., perception of control and order, parenting self-efficacy, and generalized self-efficacy). Anxious-depressed women scored significantly worse on all of these variables in comparison to women who were depressed only, or who were anxious and/or stressed. These findings are possibly a reflection of the findings of others that this sub-group of patients might be at heightened risk for more poorer acute and long-term outcome (Rivas-Vazquez et al., 2004), increased levels of social-occupational impairment (Kush, 2004), and increased risk of suicide (Fawcett, 1997; Sareen et al., 2005) as compared to patients with depression alone. By using the DASS-21 in combination with the EPDS, it may be the case that this sub-group of anxious-
depressed women will have a chance of being detected more accurately, and consequently treated accordingly. (7) The most important factors within the proposed cognitive vulnerability-stress model of postnatal distress were identified in terms of their relative contribution to the prediction of postnatal distress. The factors that remained significant in the cognitive vulnerability-stress model reiterate the findings of others (i.e., ratings of antenatal depression, parenting self-efficacy, and relationship quality) (see Pope, 2000) and contribute in new ways to the postnatal literature. The unique contributions from the final model are that of perception of control and order, perceived control of internal states, fear of negative evaluation and perceived criticism/judgement from women’s own mothers. These findings ultimately highlight the importance of control and social evaluative concerns in relation to postnatal distress.

By using a broader conceptualization of postnatal distress (to include anxiety and stress), and by framing our assessment of postnatal distress within a cognitive vulnerability-stress model (Milgrom et al., 1999), a more accurate and compassionate assessment of women’s postnatal difficulties might be possible. This approach might facilitate our understanding – both clinically and empirically – of the complex, multifactorial nature of distress in the postpartum, and the relevance of perceived control and social-evaluative concerns at this time. New motherhood is a major life event that encompasses a multitude of changes and stressors. By assisting women in re-appraising their expectations, and re-defining their self-identities (as separate from the views of others), women might be better placed to experience the profound joy motherhood has to offer (Lamble & Morris, 1999). This approach to working with new mothers, may ultimately contribute towards breaking down some of the socio-cultural representations against which many women render themselves as inadequate (Choi et al., 2005; Milgrom & McCloud, 1996), and may go some way towards minimizing the distress associated with this pervasive life change.
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Appendix A: Promotional materials
MOTHERHOOD STUDY

Are you interested in supporting research into first-time mothers’ experience of motherhood?

The aim of this research is to assist practitioners to better help women adjust to postnatal challenges.

This research investigates the psychological and social factors that impact new mothers.

If you are a first-time mother, your baby is 6 weeks to 6 months old, and you are interested in supporting this research, please take a questionnaire or ask here for one. Participation is totally voluntary and anonymous.

A postage-paid reply envelope is enclosed for returning the questionnaire to Swinburne University.

Thank you for your interest in this study.

For more information, please contact:
Renée Miller
Psychologist
Phone: 0412 598 023
Email: motherhood@bigpond.com.au
MOTHERHOOD STUDY

This practice is currently supporting academic research into first-time mothers’ experience of motherhood.

The aim of this research is to assist practitioners to better help women adjust to postnatal challenges.

This research investigates the psychological and social factors that impact new mothers.

If you are a first-time mother (or about to become one), and you are interested in supporting this research, please take a questionnaire or ask your practitioner for one. Participation is totally voluntary and anonymous.

A postage-paid reply envelope is enclosed for returning the questionnaire to Swinburne University.

Thank you for your interest in this study.

For more information, please contact:
Renée Miller
Psychologist
Phone: 0412 598 023
Email: motherhood@bigpond.com.au
Appendix B: Original questionnaire
"Factors associated with first-time mothers’ experience of motherhood"

Investigators: Renée Miller (Psychologist) & Dr Julie Pallant (Supervisor)

We are conducting a study to examine the psychological and social factors that may be related to first-time mothers’ experience of motherhood in the first six weeks to six months following the birth of their child. We would like to invite you to participate in this study, as your experience of first-time motherhood is a valuable contribution to this research and consequently to health practitioners’ understanding of the potential difficulties women face during this challenging time. The more health practitioners are informed, the better able they are to help women adjust to postnatal challenges.

Participation in this study involves completing a questionnaire when your baby is between six weeks to six months old. The questionnaire consists of questions concerning yourself, your attitudes and beliefs, your birth and baby, your life at the moment and your relationships. This questionnaire is anonymous, so you need not be concerned about the confidentiality of your responses. You will not be asked to provide your name or other identifying information. When you have completed the questionnaire, it can be returned in the postage paid envelope provided. The results of all returned questionnaires will be analyzed and a summary of the results submitted for the purposes of a doctoral thesis, and for publication in a scientific journal. No individual responses will be identified.

We would appreciate if you could take the time to complete the attached questionnaire, which should take you approximately 30 minutes. By participating in this study, your experience of motherhood will contribute valuable information to health practitioners.

If you have any concerns about your experience or your adjustment to motherhood, we encourage you to contact your doctor or to make use of the support services listed at the back of the questionnaire.

If you have any questions about this study, please contact: Dr Julie Pallant Supervisor Swinburne University Phone: 03-9214 8214 Email: jpallant@swin.edu.au

If you have any queries or concerns which the Supervisor was unable to satisfy, please contact: The Chair SBS Research Ethics Committee School of Social & Behavioural Sciences, Mail H24 Swinburne University of Technology Hawthorn VIC 3122

If you have a complaint about the way that you were treated during this study, please write to: The Chair Human Research Ethics Committee Swinburne University of Technology PO Box 218 Hawthorn VIC 3122 Phone: 03-9214 5223

Thank you for your time and contribution

Renée Miller  Julie Pallant
Factors associated with first-time mothers’ experience of motherhood

A research study conducted by

Renée Miller
School of Social and Behavioural Sciences
&
Dr Julie Pallant
School of Mathematical Sciences

Swinburne University of Technology

Please complete the attached questionnaire and return it in the reply paid envelope to:

Dr Julie Pallant
Motherhood Study
School of Mathematical Sciences
Swinburne University of Technology
PO Box 218 Hawthorn VIC 3122
Phone: 03-9214 8214

Congratulations on the birth of your baby. Thank you for participating in this study.
CRITERIA FOR PARTICIPATION IN THIS STUDY

In order to meet the criteria for participation in this study, please ensure that you have ticked all three of the following boxes:

1. You are a first-time mother
2. Your baby is between 6 weeks and 6 months old
3. You have no step or foster children

If you have ticked all the above boxes, please continue

INSTRUCTIONS

In this booklet you will find sets of questions concerning your thoughts, feelings and behaviours. Please read the instructions for each set. Please give the first answer that comes to mind. Don't spend too much time on each question.

Thank you for your participation

Today's Date ________________

BACKGROUND INFORMATION

Age? _______ years
How old is your new baby? _______ months _______ weeks
Are you currently pregnant again? □ Yes □ No
What is your current relationship status?
□ Single □ In a relationship □ Married □ Defacto □ Separated
□ Divorced □ Widowed
What is the highest level of education you have completed?
□ Primary school □ Some secondary school
□ Completed secondary school □ Some additional training (e.g. TAFE)
□ Completed undergraduate university course □ Completed postgraduate university course

Before you had your baby, which of the following most appropriately described you? (Please tick as many that apply)
□ Employed Full-time □ Employed Part-time □ Homemaker □ Unemployed
□ Own Business □ Volunteer □ Student
Are you back at work now? □ Yes □ No
Which of the following most appropriately describes you now? (Please tick as many that apply)
□ Employed Full-time □ Employed Part-time □ Homemaker □ Unemployed
□ Own Business □ Volunteer □ Student
If you are back at work now, how old was your baby when you went back? _______ months _______ weeks
If you are currently working, how satisfied are you with the balance you have between being a mother and working?

Totally Dissatisfied 1 2 3 4 5 6 7 8 9 10 Totally Satisfied
OBSTETRIC HISTORY

1. Was this baby planned?  ☐ Yes by you only  ☐ Yes by you and your partner  ☐ No
2. If planned, how long did you try for this baby? _______ years _______ months
3. Have you had a previous miscarriage?  ☐ Yes  ☐ No  Please give number _______
4. Have you had a previous termination?  ☐ Yes  ☐ No  Please give number _______
5. Have you had a previous stillbirth?  ☐ Yes  ☐ No  Please give number _______
6. Did you feel tense or anxious during your pregnancy?
   Not at all  1  2  3  4  5  6  7  8  9  10  Very tense or anxious
   1  2  3  4  5  6  7  8  9  10  Very tense or anxious
7. Did you feel miserable or depressed during your pregnancy?
   Not at all miserable or depressed  1  2  3  4  5  6  7  8  9  10  Very miserable or depressed
8. Have you ever been diagnosed with Anxiety?  ☐ Yes  ☐ No
   If you answered “yes” to Question 8,  
   (a) Were you diagnosed during your pregnancy?  ☐ Yes  ☐ No  
   (b) Were you diagnosed after your baby was born?  ☐ Yes  ☐ No
9. Have you ever been diagnosed with Depression?  ☐ Yes  ☐ No
   If you answered “yes” to Question 9,  
   (a) Were you diagnosed during your pregnancy?  ☐ Yes  ☐ No  
   (b) Were you diagnosed after your baby was born?  ☐ Yes  ☐ No
10. Have you received treatment for Anxiety?  ☐ Yes  ☐ No  
    Depression?  ☐ Yes  ☐ No

DETAILS OF YOUR BIRTH

1. When was your baby delivered?  
   ☐ On his/her due date  ☐ Before his/or due date by _______ weeks _______ days  
   ☐ After his/her due date by _______ weeks _______ days
2. Please indicate if any of the following occurred during your birth (please tick as many that apply)  
   ☐ Induction  ☐ Augmentation  ☐ Nitrous Oxide (gas)  ☐ Pethidine  
   ☐ Epidural  ☐ Forceps  ☐ Vacuum  ☐ Episiotomy  
   ☐ Haemorrhage  ☐ Planned caesarean  ☐ Unplanned caesarean  ☐ Home birth  
   ☐ Other (please provide details)
3. Using the scale below, please indicate the extent to which you experienced the following feelings during your birth.

<table>
<thead>
<tr>
<th>Feeling</th>
<th>Not at all</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Very much so</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Happiness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Fear</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Anger</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Excitement</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Confusion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Out of control</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Disappointment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Other feelings (please describe)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Overall, how satisfied were you with your birth experience?

<table>
<thead>
<tr>
<th>Totally Dissatisfied</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Totally Satisfied</th>
</tr>
</thead>
</table>

### YOUR BABY

1. In general, how difficult or easy would you rate your baby compared to other babies?

<table>
<thead>
<tr>
<th>Extremely Difficult</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Extremely Easy</th>
</tr>
</thead>
</table>

2. Does your baby have any of the following? (please indicate the severity of each by ticking one box per problem)

- Colic / reflux
- Sleeping problems
- Excessive crying
- Eating problems
- Ongoing health problems

### LIFE EVENTS

1. Have you experienced any of the following during your pregnancy or since your baby was born?

- Death of a loved one
- Serious illness in the family
- Financial pressures
- Your relationship ended
- Moving house
- Other stressful life events (please specify)
- Unwanted loss of partner’s employment
- Unwanted loss of employment
- Renovating house

2. If you ticked any of the above life events, please rate how stressful you found the combination of events to be?

<table>
<thead>
<tr>
<th>Not at all stressful</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Extremely stressful</th>
</tr>
</thead>
</table>
**SOCIAL SUPPORT**

1. For each of the following statements, please tick one box which shows how you feel about the support you have right now.

<table>
<thead>
<tr>
<th></th>
<th>Not Applicable</th>
<th>Never</th>
<th>Rarely</th>
<th>Some of the time</th>
<th>Most of the time</th>
<th>Always</th>
</tr>
</thead>
</table>
   A. I have good friends who support me   |                |       |        |                  |                  |        |
   B. My family is always there for me    |                |       |        |                  |                  |        |
   C. My husband/partner helps me a lot   |                |       |        |                  |                  |        |
   D. There is conflict with my husband/partner |          |       |        |                  |                  |        |
   E. I feel controlled by my husband/partner |          |       |        |                  |                  |        |
   F. I feel loved by my husband/partner  |                |       |        |                  |                  |        |
   G. I have a good babysitter/s I can rely on |            |       |        |                  |                  |        |

2. Please rate how satisfied you are in general with the support you have?

<table>
<thead>
<tr>
<th></th>
<th>Totally Dissatisfied</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Totally Satisfied</th>
</tr>
</thead>
</table>

**YOUR RELATIONSHIP**

1. Are you currently in a relationship?  
   - Yes  
   - No

   If you answered yes to question 1, please rate the following items:

2. Please rate the quality of your relationship before your baby was born by circling a number from 1 to 10

<table>
<thead>
<tr>
<th></th>
<th>Constant friction or relationship breaking down</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Close, warm relationship</th>
</tr>
</thead>
</table>

3. Please rate the quality of your relationship after your baby was born, by circling a number from 1 to 10

<table>
<thead>
<tr>
<th></th>
<th>Constant friction or relationship breaking down</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Close, warm relationship</th>
</tr>
</thead>
</table>

4. If you are currently in a relationship, please rate how satisfied you feel with your relationship with your partner?

<table>
<thead>
<tr>
<th></th>
<th>Totally Dissatisfied</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Totally Satisfied</th>
</tr>
</thead>
</table>
Please rate the extent to which the following statements are true of you, by circling a number from 1 to 5.

**IN GENERAL:**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Not at all true of me</th>
<th>Very true of me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>It is very important to me to have a predictable routine in my life</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I hate feeling disorganized</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>When necessary, I can relax and just “go with the flow”</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I like to be in control of my life</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I like to go about things in a systematic way</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>When things don’t go smoothly, I feel very uncomfortable</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I am a person who has very clear ideas about the way things should be done</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>If I can’t achieve my goals for the day, I feel like I’ve failed</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I feel very frustrated if I can’t complete a task before moving on to the next one</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>It is very important to me that my environment is neat and ordered</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I prefer to do most things myself rather than relying on other people to do them</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

Please rate the extent to which the following statements are true of your life at the moment, by circling a number from 1 to 5.

**IN MY LIFE AT THE MOMENT:**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Not at all true of me</th>
<th>Very much so</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I have a predictable routine</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I feel disorganized</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I mostly have to “go with the flow”</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I feel in control</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I am able to go about things in a systematic way</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Things are going smoothly</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I am able to get most things done the way I like them to be done</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I am able to achieve my goals for the day (most of the time)</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I can never seem to finish one task before having to move on to the next one</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>My environment is always neat and ordered</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I do most things myself rather than relying on other people</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>
Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree, circle 7; if you strongly disagree, circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 7. If you feel neutral or undecided the midpoint is 4.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Disagree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When I am working on something, I cannot relax until it is perfect.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2. I find it difficult to meet other's expectations of me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3. One of my goals is to be perfect in everything I do.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4. I never aim for perfection in my work.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5. Those around me readily accept that I can make mistakes too.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6. The better I do, the better I am expected to do.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7. I seldom feel the need to be perfect.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>8. Anything I do that is less than excellent will be seen as poor work by</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>those around me.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I strive to be as perfect as I can be.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>10. It is very important that I am perfect in everything I attempt.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>11. I strive to be the best at everything I do.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>12. The people around me expect me to succeed at everything I do.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>13. I demand nothing less than perfection of myself.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>14. Others will like me even if I don't excel at everything.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>15. It makes me uneasy to see an error in my work.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>16. Success means that I must work even harder to please others.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>17. I am perfectionistic in setting my goals.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>18. Others think I am okay, even when I do not succeed.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>19. I feel that people are too demanding of me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>20. I must work to my full potential at all times.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>21. Although they may not show it, other people get very upset with me</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>when I slip up.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. I do not have to be the best at whatever I am doing.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>23. My family expects me to be perfect.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>24. I do not have very high goals for myself.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>25. My parents rarely expected me to excel in all aspects of my life.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>26. People expect nothing less than perfection from me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>27. I set very high standards for myself.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>28. People expect more from me than I am capable of giving.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>29. I must always be successful at school or work.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>30. People around me think I am still competent even if I make a mistake.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

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1. Please rate the extent to which you feel judged or criticized by each of the following people, by circling a number from 1 to 10. If any of the people listed are not applicable, please circle “N/A”.

<table>
<thead>
<tr>
<th></th>
<th>Not Applicable</th>
<th>Not at all criticized or judged</th>
<th>Very criticized or judged</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>(b)</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>(d)</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>(e)</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>(f)</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>(g)</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>(h)</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>(i)</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>(j)</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>(k)</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>(l)</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>(m)</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
</tbody>
</table>

2. In what areas do you feel criticized or judged by the above people? (Please tick any that apply to you)

- [ ] The birth of my baby
- [ ] How I deal with my baby’s sleep
- [ ] Feeding my baby
- [ ] Childcare
- [ ] Going back to work
- [ ] My interactions with my child
- [ ] How my house looks
- [ ] How I look
- [ ] Other (please specify)

Thank you for continuing

Your experience is a valuable contribution to research
Please read each of the following statements carefully, and circle a number to indicate how characteristic each statement is of you (from 1 – not at all characteristic of me to 5 – extremely characteristic of me):

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all characteristic of me</th>
<th>Slightly characteristic of me</th>
<th>Moderately characteristic of me</th>
<th>Very characteristic of me</th>
<th>Extremely characteristic of me</th>
</tr>
</thead>
<tbody>
<tr>
<td>I worry about what other people will think of me even when I know it doesn’t make any difference.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am unconcerned even if I know people are forming an unfavorable impression of me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am frequently afraid of other people noticing my shortcomings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I rarely worry about what kind of impression I am making on someone.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am afraid that others will not approve of me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am afraid that people will find fault with me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Other people’s opinions of me do not bother me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>When I am talking to someone, I worry about what they may be thinking about me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am usually worried about what kind of impression I make.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>If I know someone is judging me, it has little effect on me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Sometimes I think I am too concerned with what other people think of me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I often worry that I will say or do the wrong things.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Please indicate how much you either agree or disagree with each of the following statements by circling a number from 1 (strongly disagree) to 4 (strongly agree).

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I can always manage to solve difficult problems if I try hard enough.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If someone opposes me, I can find means and ways to get what I want.</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>3. It is easy for me to stick to my aims and accomplish my goals.</td>
<td></td>
<td></td>
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<tr>
<td>4. I am confident that I could deal efficiently with unexpected events.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5. Thanks to my resourcefulness, I know how to handle unforeseen situations.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6. I can solve most problems if I invest the necessary effort.</td>
<td></td>
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<tr>
<td>7. I can remain calm when facing difficulties because I can rely on my coping abilities.</td>
<td></td>
<td></td>
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<tr>
<td>8. When I am confronted with a problem, I can usually find several solutions.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9. If I am in a bind, I can usually think of something to do.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. No matter what comes my way, I'm usually able to handle it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please mark the degree to which you agree or disagree with each of the following statements by circling the number which best matches how you feel. If you are not sure, please fill in 3.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When my child came home from the hospital, I had doubtful feelings about my ability to handle being a parent.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Being a parent is harder than I thought it would be.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I feel capable and on top of things when I am caring for my child.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I can't make decisions without help.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I have had many more problems raising children than I expected.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I enjoy being a parent.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I feel that I am successful most of the time when I try to get my child to do or not do something.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Since I brought my last child home from the hospital, I find that I am not able to take care of this child as well as I thought I could. I need help.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I often have the feeling that I cannot handle things very well.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Please tick the box next to the statement that best describes how you feel.

10. When I think about myself as a parent I believe:

- [ ] I can handle anything that happens
- [ ] I can handle most things pretty well
- [ ] Sometimes I have doubts, but find that I handle most things without any problems
- [ ] I have some doubts about being able to handle things
- [ ] I don't think I handle things very well at all

11. I feel that I am:

- [ ] A very good parent
- [ ] A better than average parent
- [ ] An average parent
- [ ] A person who has some trouble being a parent
- [ ] Not very good at being a parent

Please read each statement and indicate your agreement or disagreement by circling a number from 1 to 10.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I don't have much control over my emotional reactions to stressful situations</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>2. I can usually talk myself out of feeling bad.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>3. No matter what happens to me in my life I am confident of my ability to cope emotionally.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>4. I have a number of good techniques that will help me cope with any stressful situation.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>5. I find it hard to stop myself from thinking about my problems.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>6. I am usually able to keep my thoughts under control.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>7. I imagine there will be many situations in the future where silly thoughts will get the better of me.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>8. I have a number of techniques that I am confident will help me think clearly and rationally in any situation I might find myself.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>9. Even when under pressure I can usually keep calm and relaxed.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>10. There is not much I can do to relax when I get uptight.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>11. I have a number of ways of relaxing that I am confident will help me cope.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>12. If my stress levels get too high I know there are things I can do to help myself.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
</tbody>
</table>
Please read each statement and circle a number 0, 1, 2 or 3, which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0  Did not apply to me at all  
1  Applied to me to some degree, or some of the time  
2  Applied to me to a considerable degree, or a good part of the time  
3  Applied to me very much, or most of the time

**OVER THE PAST WEEK:**

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I found it hard to wind down</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I was aware of dryness of my mouth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I couldn't seem to experience any positive feeling at all</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>I experienced breathing difficulty (eg, excessively rapid breathing,</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>breathlessness in the absence of physical exertion)</td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td>I found it difficult to work up the initiative to do things</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6</td>
<td>I tended to over-react to situations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I experienced trembling (eg, in the hands)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8</td>
<td>I felt that I was using a lot of nervous energy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I was worried about situations in which I might panic and make a fool of</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>myself</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I felt that I had nothing to look forward to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I found myself getting agitated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>I found it difficult to relax</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I felt down-hearted and blue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I was intolerant of anything that kept me from getting on with what I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>was doing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I felt I was close to panic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I was unable to become enthusiastic about anything</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>I felt I wasn't worth much as a person</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>I felt that I was rather touchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>I was aware of the action of my heart in the absence of physical exertion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(eg, sense of heart rate increase, heart missing a beat)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>I felt scared without any good reason</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>I felt that life was meaningless</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

You're almost finished  
Thank you for your commitment to this study
As you have recently had a baby we would like to know how you are feeling. Please tick the answer which comes closest to how you have felt in the past 7 days, not just how you feel today.

**In the past 7 days:**

1. 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
   - [ ] Not at all

2. I have looked forward with enjoyment to things:
   - [ ] As much as I always could
   - [ ] Not quite so much now
   - [ ] Definitely not so much
   - [ ] Not at all

3. I have blamed myself unnecessarily when things went wrong:
   - [ ] Yes, most of the time
   - [ ] Yes, some of the time
   - [ ] Not very often
   - [ ] No, never

4. I have been anxious or worried for no good reason:
   - [ ] No, not at all
   - [ ] Hardly ever
   - [ ] Yes, sometimes
   - [ ] Yes, very often

5. I have felt scared or panicky for no very good reason:
   - [ ] Yes, quite a lot
   - [ ] Yes, sometimes
   - [ ] No, not much
   - [ ] No, not at all

6. 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

7. 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

8. I have felt sad or miserable:
   - [ ] Yes, most of the time
   - [ ] Yes, quite often
   - [ ] Not very often
   - [ ] No, not at all

9. I have been so unhappy that I have been crying:
   - [ ] Yes, most of the time
   - [ ] Yes, quite often
   - [ ] Only occasionally
   - [ ] No, never

10. The thought of harming myself has occurred to me:
    - [ ] Yes, quite often
    - [ ] Sometimes
    - [ ] Hardly ever
    - [ ] Never
Please tick the box next to the statement that best describes how you feel.

1. How easy is it for you to understand what your child wants or needs?
   - Very easy
   - Easy
   - Somewhat difficult
   - It is very hard
   - I usually can't figure out what the problem is

Please mark the degree to which you agree or disagree with each of the following statements by circling the number which best matches how you feel. If you are not sure, please fill in 3.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. It takes a long time for parents to develop close, warm feelings for their children.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. I expected to have closer and warmer feelings for my child than I do and this bothers me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Sometimes my child does things that bother me just to be mean.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. When I was young, I never felt comfortable holding or taking care of children.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. My child knows I am his or her parent and wants me more than other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. The number of children that I have now is too many.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

**MATERNAL ROLE SATISFACTION**

1. Overall, how satisfied are you with your role as a mother?

<table>
<thead>
<tr>
<th>Satisfaction Level</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totally Dissatisfied</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Totally Satisfied</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LIFE SATISFACTION**

Below are five statements with which you may agree or disagree. Please indicate your agreement with each item by circling the appropriate number on the scale from 1 to 7.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In most ways my life is close to ideal</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. The conditions of my life are excellent</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I am satisfied with my life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. So far I have got the important things I want in my life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. If I could live my life again, I would change almost nothing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Thank you for taking the time to complete this questionnaire. Your help with this research is greatly appreciated.

We wish you well in motherhood.

Please look back through the questionnaire booklet and check that you have not accidentally missed any pages. When the booklet is completed, please seal it in the envelope provided and post it to:

Dr Julie Pallant
Motherhood Study
School of Mathematical Sciences
Swinburne University of Technology
PO Box 218 Hawthorn VIC 3122
Phone: 03-9214 8214

SUPPORT SERVICES

If you are concerned about how you are feeling or how you are coping with motherhood, please seek help from your doctor, a registered psychologist or psychiatrist.

Alternatively, here are some helpful support services you could try:

**Postnatal information & support:**
- Women's Health Information Centre
- Royal Women's Hospital
  03-9344 2000
- Post and Ante Natal Depression Association (PaNDa)
  03-9482 9400
- Maternal Child Health Service
  132 229

**24 hour crisis lines:**
- Parentline
  132 289
- Care Ring
  136 169
- Lifeline
  131 114
Appendix C: Items and scales used in the present study
Outcome Measures

The Edinburgh Postnatal Depression Scale (EPDS).

As you have recently had a baby we would like to know how you are feeling. Please tick the answer which comes closest to how you have felt in the past 7 days, not just how you feel today.

In the past 7 days:

1. 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

2. I have looked forward with enjoyment to things:
   - As much as I always could
   - Not quite so much now
   - Definitely not so much

3. I have blamed myself unnecessarily when things went wrong:
   - Yes, most of the time
   - Yes, some of the time
   - Not very often
   - No, never

4. I have been anxious or worried for no good reason:
   - No, not at all
   - Hardly ever
   - Yes, sometimes

5. I have felt scared or panicky for no very good reason:
   - Yes, quite a lot
   - Yes, sometimes
   - No, not much

6. 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

7. 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

8. I have felt sad or miserable:
   - Yes, most of the time
   - Yes, quite often
   - Not very often
   - No, not at all

9. I have been so unhappy that I have been crying:
   - Yes, most of the time
   - Yes, quite often
   - Only occasionally
   - No, never

10. The thought of harming myself has occurred to me:
<table>
<thead>
<tr>
<th>Yes, quite often</th>
<th>Sometimes</th>
<th>Hardly ever</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Yes, quite often</td>
<td>☐ Sometimes</td>
<td>☐ Hardly ever</td>
</tr>
<tr>
<td>☐ Never</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Depression Anxiety Stress Scale (DASS-21).

Please read each statement and circle a number 0, 1, 2 or 3, which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Did not apply to me at all</td>
</tr>
<tr>
<td>1</td>
<td>Applied to me to some degree, or some of the time</td>
</tr>
<tr>
<td>2</td>
<td>Applied to me to a considerable degree, or a good part of time</td>
</tr>
<tr>
<td>3</td>
<td>Applied to me very much, or most of the time</td>
</tr>
</tbody>
</table>

**OVER THE PAST WEEK:**

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I found it hard to wind down</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I was aware of dryness of my mouth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I couldn’t seem to experience any positive feeling at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I experienced breathing difficulty (eg, excessively rapid breathing,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>breathlessness in the absence of physical exertion)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I found it difficult to work up the initiative to do things</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I tended to over-react to situations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I experienced trembling (eg, in the hands)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I felt that I was using a lot of nervous energy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I was worried about situations in which I might panic and make a fool of</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>myself</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I felt that I had nothing to look forward to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I found myself getting agitated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>I found it difficult to relax</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I felt down-hearted and blue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I was intolerant of anything that kept me from getting on with what I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>was doing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I felt I was close to panic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I was unable to become enthusiastic about anything</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>I felt I wasn’t worth much as a person</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>I felt that I was rather touchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>I was aware of the action of my heart in the absence of physical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>exertion (eg, sense of heart rate increase, heart missing a beat)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>I felt scared without any good reason</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>I felt that life was meaningless</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Maternal role satisfaction.

1. Overall, how satisfied are you with your role as a mother?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissatisfied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Satisfaction With Life Scale.

Below are five statements with which you may agree or disagree. Please indicate your agreement with each item by circling the appropriate number on the scale from 1 to 7.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In most ways my life is close to ideal</td>
<td>Strongly disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>2. The conditions of my life are excellent</td>
<td>Strongly disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>3. I am satisfied with my life</td>
<td>Strongly disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>4. So far I have got the important things I want in my life</td>
<td>Strongly disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>5. If I could live my life again, I would changed almost nothing</td>
<td>Strongly disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>
**Sources of Stress**

**Perceptions of control and order.**

Please rate the extent to which the following statements are true of your life at the moment, by circling a number from 1 to 5.

<table>
<thead>
<tr>
<th>IN MY LIFE AT THE MOMENT:</th>
<th>Not at all</th>
<th>Very much so</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have a predictable routine</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2. I feel disorganized</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3. I mostly have to “go with the flow”</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4. I feel in control</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5. I am able to go about things in a systematic way</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6. Things are going smoothly</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7. I am able to get most things done the way I like them to be done</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8. I am able to achieve my goals for the day (most of the time)</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9. I can never seem to finish one task before having to move on to the next one</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10. My environment is always neat and ordered</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11. I do most things myself rather than relying on other people</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

**Parenting self-efficacy.**

Please mark the degree to which you agree or disagree with each of the following statements by circling the number which best matches how you feel. If you are not sure, please fill in 3.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When my child came home from the hospital, I had doubtful feelings about my ability to handle being a parent.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Being a parent is harder than I thought it would be.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I feel capable and on top of things when I am caring for my child.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I can’t make decisions without help.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I have had many more problems raising children than I expected.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. I enjoy being a parent.

7. I feel that I am successful most of the time when I try to get my child to do or not do something.

8. Since I brought my last child home from the hospital, I find that I am not able to take care of this child as well as I thought I could. I need help.

9. I often have the feeling that I cannot handle things very well.

Please tick the box next to the statement that best describes how you feel.

10. When I think about myself as a parent I believe:

- [ ] I can handle anything that happens
- [ ] I can handle most things pretty well
- [ ] Sometimes I have doubts, but find that I handle most things without any problems
- [ ] I have some doubts about being able to handle things
- [ ] I don’t think I handle things very well at all

11. I feel that I am:

- [ ] A very good parent
- [ ] A better than average parent
- [ ] An average parent
- [ ] A person who has some trouble being a parent
- [ ] Not very good at being a parent

Ratings of life-event stress.

1. Have you experienced any of the following during your pregnancy or since your baby was born?

- [ ] Death of a loved one
- [ ] Serious illness in the family
- [ ] Financial pressures
- [ ] Your relationship ended
- [ ] Moving house
- [ ] Renovating house
- [ ] Unwanted loss of partner’s employment
- [ ] Unwanted loss of employment
- [ ] Other stressful life events (please specify)

2. If you ticked any of the above life events, please rate how stressful you found the combination of events to be?

Not at all stressful 1 2 3 4 5 6 7 8 9 10 Extremely stressful
Feeling out of control during birth.

3. Using the scale below, please indicate the extent to which you experienced the following feelings during your birth.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Very much so</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of control</td>
<td>1  2  3  4  5  6  7  8  9  10</td>
</tr>
</tbody>
</table>

Ratings of infant difficulty.

1. In general, how difficult or easy would you rate your baby compared to other babies?

<table>
<thead>
<tr>
<th>Extremely Difficult</th>
<th>Extremely Easy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  2  3  4  5  6  7  8  9  10</td>
<td></td>
</tr>
</tbody>
</table>

2. Does your baby have any of the following? (please indicate the severity of each by ticking one box per problem)

- Colic / reflux
- Sleeping problems
- Excessive crying
- Eating problems
- Ongoing health problems

None | Mild | Moderate | Severe
-----|------|----------|-------
[ ]  | [ ]  | [ ]  | [ ]
[ ]  | [ ]  | [ ]  | [ ]
[ ]  | [ ]  | [ ]  | [ ]
[ ]  | [ ]  | [ ]  | [ ]
[ ]  | [ ]  | [ ]  | [ ]
Quality of relationship with partner after baby.

3. Please rate the quality of your relationship after your baby was born, by circling a number from 1 to 10.

<table>
<thead>
<tr>
<th>Constant friction or relationship breaking down</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Close, warm relationship</th>
</tr>
</thead>
</table>

Maternity Social Support Scale (MSSS).

1. For each of the following statements, please tick one box which shows how you feel about the support you have right now.

<table>
<thead>
<tr>
<th>Always</th>
<th>Not Applicable</th>
<th>Never</th>
<th>Rarely</th>
<th>Some of the time</th>
<th>Most of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. I have good friends who support me</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>B. My family is always there for me</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>C. My husband/partner helps me a lot</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>D. There is conflict with my husband/partner</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>E. I feel controlled by my husband/partner</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>F. I feel loved by my husband/partner</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Social judgements. 1

1. Please rate the extent to which you feel judged or criticized by each of the following people, by circling a number from 1 to 10. If any of the people listed are not applicable, please circle “N/A”.

<table>
<thead>
<tr>
<th>(a) Partner</th>
<th>(b) Mother</th>
<th>(c) Father</th>
<th>(d) Partner’s Mother</th>
<th>(e) Partner’s Father</th>
<th>(f) Other family members in my family</th>
<th>(g) Other family members in my partner’s family</th>
<th>(h) Friends</th>
<th>(i) Medical staff</th>
<th>(j) Other parents</th>
<th>(k) Babysitter/s</th>
<th>(l) Strangers</th>
<th>(m) People in the media</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>N/A</td>
</tr>
</tbody>
</table>
2. In what areas do you feel criticized or judged by the above people? (Please tick any that apply to you)

- The birth of my baby
- Childcare
- How my house looks
- How I deal with my baby’s sleep
- Going back to work
- How I look
- Feeding my baby
- My interactions with my child

Other (please specify)

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Vulnerability Factors

General desire for control and order.

Please rate the extent to which the following statements are true of you, by circling a number from 1 to 5.

<table>
<thead>
<tr>
<th>IN GENERAL:</th>
<th>Not at all true of me</th>
<th>Very true of me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. It is very important to me to have a predictable routine in my life</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2. I hate feeling disorganized</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3. When necessary, I can relax and just “go with the flow”</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4. I like to be in control of my life</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5. I like to go about things in a systematic way</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6. When things don’t go smoothly, I feel very uncomfortable</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7. I am a person who has very clear ideas about the way things should be done</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8. If I can’t achieve my goals for the day, I feel like I’ve failed</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9. I feel very frustrated if I can’t complete a task before moving on to the next one</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10. It is very important to me that my environment is neat and ordered</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11. I prefer to do most things myself rather than relying on other people to do them</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>
**Perceived Control of Internal States Scale-12 (PCOISS-12).**

Please read each statement and indicate your agreement or disagreement by circling a number from 1 to 10.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I don't have much control over my emotional reactions to stressful situations</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>2. I can usually talk myself out of feeling bad.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>3. No matter what happens to me in my life I am confident of my ability to cope emotionally.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>4. I have a number of good techniques that will help me cope with any stressful situation.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>5. I find it hard to stop myself from thinking about my problems.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>6. I am usually able to keep my thoughts under control.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>7. I imagine there will be many situations in the future where silly thoughts will get the better of me.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>8. I have a number of techniques that I am confident will help me think clearly and rationally in any situation I might find myself.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>9. Even when under pressure I can usually keep calm and relaxed.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>10. There is not much I can do to relax when I get uptight.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>11. I have a number of ways of relaxing that I am confident will help me cope.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>12. If my stress levels get too high I know there are things I can do to help myself.</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
</tbody>
</table>
**Generalized Self-Efficacy Scale (GSES)**

Please indicate how much you either agree or disagree with each of the following statements by circling a number from 1 (strongly disagree) to 4 (strongly agree).

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I can always manage to solve difficult problems if I try hard enough.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. If someone opposes me, I can find means and ways to get what I want.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. It is easy for me to stick to my aims and accomplish my goals.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I am confident that I could deal efficiently with unexpected events.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Thanks to my resourcefulness, I know how to handle unforeseen situations.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I can solve most problems if I invest the necessary effort.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I can remain calm when facing difficulties because I can rely on my coping abilities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. When I am confronted with a problem, I can usually find several solutions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. If I am in a bind, I can usually think of something to do.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. No matter what comes my way, I'm usually able to handle it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Multidimensional Perfectionism Scale (MPS)

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree, circle 7; if you strongly disagree, circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 7. If you feel neutral or undecided the midpoint is 4.

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When I am working on something, I cannot relax until it is perfect.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>2. I find it difficult to meet other's expectations of me.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>3. One of my goals is to be perfect in everything I do.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>4. I never aim for perfection in my work.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>5. Those around me readily accept that I can make mistakes too.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>6. The better I do, the better I am expected to do.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>7. I seldom feel the need to be perfect.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>8. Anything I do that is less than excellent will be seen as poor</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>work by those around me.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>9. I strive to be as perfect as I can be.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>10. It is very important that I am perfect in everything I attempt.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>11. I strive to be the best at everything I do.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>12. The people around me expect me to succeed at everything I do.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>13. I demand nothing less than perfection of myself.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>14. Others will like me even if I don't excel at everything.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>15. It makes me uneasy to see an error in my work.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>16. Success means that I must work even harder to please others.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>17. I am perfectionistic in setting my goals.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>18. Others think I am okay, even when I do not succeed.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>19. I feel that people are too demanding of me.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>20. I must work to my full potential at all times.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>21. Although they may not show it, other people get very upset with</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>me when I slip up.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>22. I do not have to be the best at whatever I am doing.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>23. My family expects me to be perfect.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>24. I do not have very high goals for myself.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>25. My parents rarely expected me to excel in all aspects of my life.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>26. People expect nothing less than perfection from me.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
The Brief-Fear of Negative Evaluation Scale (Brief-FNE).

Please read each of the following statements carefully, and circle a number to indicate how characteristic each statement is of you (from 1 – not at all characteristic of me to 5 – extremely characteristic of me):

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I worry about what other people will think of me even when I know it doesn’t make any difference.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I am unconcerned even if I know people are forming an unfavorable impression of me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I am frequently afraid of other people noticing my shortcomings.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I rarely worry about what kind of impression I am making on someone.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I am afraid that others will not approve of me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I am afraid that people will find fault with me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Other people’s opinions of me do not bother me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. When I am talking to someone, I worry about what they may be thinking about me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I am usually worried about what kind of impression I make.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. If I know someone is judging me, it has little effect on me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Sometimes I think I am too concerned with what other people think of me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. I often worry that I will say or do the wrong things.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Ratings of antenatal depression and anxiety.

6. Did you feel tense or anxious during your pregnancy?

| Not at all tense or anxious | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very tense or anxious |

7. Did you feel miserable or depressed during your pregnancy?

| Not at all miserable or depressed | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very miserable or depressed |

Quality of relationship with partner before baby.

2. Please rate the quality of your relationship before your baby was born by circling a number from 1 to 10

| Constant friction or relationship breaking down | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Close, warm relationship |
Appendix D: Supporting data and results
Obstetric Characteristics of the Sample
Supporting data for Section 3.1

No. of women who delivered on due date \( [n \, (\%)] \) 25 (7.7)
No. of women who delivered before their due date \( [n \, (\%)] \) 152 (46.8)
No. of women who delivered after their due date \( [n \, (\%)] \) 148 (45.5)

Premature delivery (in days)
\begin{align*}
\text{Mean (S.D.)} & \quad 9.77 (7.64) \\
\text{Range} & \quad 1-43
\end{align*}

Overdue delivery (in days)
\begin{align*}
\text{Mean (S.D.)} & \quad 6.6 (3.88) \\
\text{Range} & \quad 1-16
\end{align*}

Characteristics of deliveries
\begin{align*}
\text{Induction} \ [n \, (\%)] & \quad 136 (42.6) \\
\text{Augmentation} \ [n \, (\%)] & \quad 16 (5) \\
\text{Gas} \ [n \, (\%)] & \quad 154 (48.3) \\
\text{Pethidine} \ [n \, (\%)] & \quad 106 (33.2) \\
\text{Epidural} \ [n \, (\%)] & \quad 180 (56.4) \\
\text{Forceps} \ [n \, (\%)] & \quad 65 (20.4) \\
\text{Vacuum} \ [n \, (\%)] & \quad 59 (18.5) \\
\text{Episiotomy} \ [n \, (\%)] & \quad 106 (33.2) \\
\text{Haemorrhage} \ [n \, (\%)] & \quad 25 (7.8) \\
\text{Planned caesarian} \ [n \, (\%)] & \quad 42 (13.2) \\
\text{Unplanned caesarian} \ [n \, (\%)] & \quad 69 (21.6) \\
\text{Homebirth} \ [n \, (\%)] & \quad 0
\end{align*}
Distributions of Scores on Outcome Measures (Scales): 
Supporting Data for Section 3.3 and 3.5

**DASS-Depression**

- Mean = 5.1
- Std. Dev = 6.36
- N = 323.00

**DASS-Anxiety**

- Mean = 3.3
- Std. Dev = 5.30
- N = 323.00
**DASS-Stress**

![DASS-Stress histogram](image)

- **Mean**: 10.4
- **Std. Dev**: 8.10
- **N**: 324.00

**EPDS**

![EPDS histogram](image)

- **Mean**: 6.8
- **Std. Dev**: 4.83
- **N**: 320.00
Satisfaction with Life Scale

![Histogram of Total Life Satisfaction](image)

- Std. Dev = 5.21
- Mean = 28.1
- N = 324.00
**EPDS scores for women with no DASS classifications**

*Supporting data for Section 3.3*

Nineteen women were classified as *likely-depressed* on the EPDS (using a cut-off of 9), but had no classifications on the DASS. Listed below are the EPDS scores for these women.

<table>
<thead>
<tr>
<th>EPDS Score</th>
<th>Number of women</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
</tr>
</tbody>
</table>
Supporting Data for Section 3.4

Scree plot for 11 items proposed to measure perceptions of control and order

Scree Plot

<table>
<thead>
<tr>
<th>Component Number</th>
<th>Eigenvalue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

Factor loadings on unrotated component matrix for items proposed to measure general desire for control and order

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. I hate feeling disorganized</td>
<td>.745</td>
<td></td>
</tr>
<tr>
<td>5. I like to go about things in a systematic way</td>
<td>.723</td>
<td></td>
</tr>
<tr>
<td>1. It is very important to me to have a predictable routine in my life</td>
<td>.699</td>
<td></td>
</tr>
<tr>
<td>9. I feel very frustrated if I can’t complete a task before moving on to the next one</td>
<td>.669</td>
<td></td>
</tr>
<tr>
<td>4. I like to be in control of my life</td>
<td>.669</td>
<td>-.366</td>
</tr>
<tr>
<td>7. I am a person who has very clear ideas about the way things should be done</td>
<td>.642</td>
<td></td>
</tr>
</tbody>
</table>
8. If I can’t achieve my goals for the day, I feel like I’ve failed  .631
10. It is very important to me that my environment is neat and ordered  .624
11. I prefer to do most things myself rather than relying on other people to do them  .549  -.396
6. When things don’t go smoothly, I feel very uncomfortable  .538  .443
3. When necessary, I can relax and just go with the flow  .434  .656

Scree plot for 9 items proposed to measure general desire for control and order
Distributions of scores on Sources of Stress Scales:
Supporting Data for Section 3.5

**Perceptions of control and order**

![Histogram for Perceptions of control and order](image)

- **Total Actual Control**
  - Std. Dev = 6.23
  - Mean = 28.5
  - N = 322.00

**Parenting self-efficacy**

![Histogram for Parenting self-efficacy](image)

- **Parenting self-efficacy**
  - Std. Dev = 6.72
  - Mean = 24.2
  - N = 307.00
Social support

![Histogram of Total Social Support Score]

- Standard Deviation: 3.15
- Mean: 25.7
- N: 269.00
Frequencies for Social Judgements
Supporting Data for Section 3.5

Numbers and percentages for each rating of perceived criticism/judgement from women's own mothers and mothers-in-law

<table>
<thead>
<tr>
<th>Rating</th>
<th>Own mother</th>
<th>Percentage</th>
<th>Mother-in-law</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>77</td>
<td>25.5</td>
<td>49</td>
<td>17.3</td>
</tr>
<tr>
<td>2</td>
<td>48</td>
<td>15.9</td>
<td>37</td>
<td>13.0</td>
</tr>
<tr>
<td>3</td>
<td>48</td>
<td>15.9</td>
<td>31</td>
<td>10.9</td>
</tr>
<tr>
<td>4</td>
<td>26</td>
<td>8.6</td>
<td>32</td>
<td>11.3</td>
</tr>
<tr>
<td>5</td>
<td>23</td>
<td>7.6</td>
<td>24</td>
<td>8.5</td>
</tr>
<tr>
<td>6</td>
<td>11</td>
<td>3.6</td>
<td>18</td>
<td>6.3</td>
</tr>
<tr>
<td>7</td>
<td>21</td>
<td>7.0</td>
<td>30</td>
<td>10.6</td>
</tr>
<tr>
<td>8</td>
<td>16</td>
<td>5.3</td>
<td>27</td>
<td>9.5</td>
</tr>
<tr>
<td>9</td>
<td>19</td>
<td>6.3</td>
<td>14</td>
<td>4.9</td>
</tr>
<tr>
<td>10</td>
<td>13</td>
<td>4.3</td>
<td>22</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Topics related to perceived criticism/judgement

- Breastfeeding
- Not breastfeeding
- How I dress my baby
- How my child looks
- How my child behaves
- Health problems relating to childbirth
- How I deal with my baby’s crying
- Pregnancy using donor sperm
- How I support my partner
- Not immunizing my baby
- When I take my baby out
- Not wanting more children
- Having a child at all
- Being a single mum
• How much we visit or allow family to visit
• What I buy for my baby
• The way I spend money
• How much work I do around the house
• Overall as a person
• General criticism of working mothers
• Focusing on financial security
• Not focusing on financial security
• Giving my baby a dummy
• Having the baby in the private health system
• My baby’s name
• How often I take my baby out
• How often I bath my baby
• My choice of partner
• My baby crying in public
• My choice of treatment for reflux
• Breastfeeding in public
• Having a baby at my age (older mother)
Distributions of Scores on Vulnerability Factor Scales:
Supporting data for Section 3.5

General desire for control and order

![Histogram of General desire for control and order](chart1)

Total Ideal Control

- Std. Dev = 6.25
- Mean = 31.9
- N = 322.00

Perceived control of internal states

![Histogram of Perceived control of internal states](chart2)

- Std. Dev = 19.39
- Mean = 78.1
- N = 318.00
**Generalized self-efficacy**

![Histogram for Generalized self-efficacy]

- Std. Dev = 4.66
- Mean = 31.4
- N = 322.00

**Self-oriented perfectionism**

![Histogram for Self-oriented perfectionism]

- Std. Dev = 16.49
- Mean = 64.8
- N = 318.00
Socially-prescribed perfectionism

Fear of negative evaluation
Distributions of EPDS scores according to the four distress groups:

Supporting data for Section 3.7

![Histograms showing distributions of EPDS scores for different distress groups: Depressed, Anxious, Anxious - Depressed, and Stressed. The x-axis represents EPDS total score, and the y-axis represents frequency. The histograms are color-coded with red bars.](image-url)
Appendix E: Publication