Mindfulness-Based Cognitive Therapy for Pregnant Women with Previous Difficult Postpartum Mood: A Mixed Methods Exploratory Study

by

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BA, University of British Columbia, 2007

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Supervisory Committee

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Abstract

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Postpartum Depression **(**PPD) affects approximately 15% of Canadian mothers. PPD can have negative and enduring consequences for women and their relationships with their partners and children. Women who have suffered from PPD are 50% more likely to experience depression following delivery of another child. Mindfulness-Based Cognitive Therapy (MBCT) was developed to prevent relapse in recurrent depression. MBCT has been reported to be effective in the treatment of both depression and anxiety among at risk samples from the general and clinical populations. It is not clear whether the approach is a safe and acceptable preventive option to deliver to pregnant women who are at risk for developing PPD. **Objectives:** The aim of my study was to explore the safety, acceptability, and effectiveness of MBCT for pregnant women who experienced difficult mood after a previous childbirth. **Method:** I used a mixed methods design and recruited 5 participants from the Victoria community. Participants were at least 18 years of age, native English speakers, pregnant and had experienced difficult mood for at least two consecutive weeks within the first year following the previous delivery of a healthy infant. All participants completed the slightly modified 8-week MBCT program. I administered self-report, quantitative measures at baseline (T1), before and immediately after each group, and postintervention (T2). I collected qualitative data as weekly field notes, through a semi-structured focus group one week following completion of the program, and as comments participants provided on the self-report WC-DM measure. **Findings:** Quantitative findings suggest program safety; speak to the acceptability of the program; and suggest that MBCT was effective in significantly decreasing anxiety symptomology, decreasing self-reported worry about difficult mood, and increasing wellbeing for pregnant women with a history of difficult postpartum mood. Field notes, focus group data, and comments participants provided on the self-report WC-DM measure contribute to and explain quantitative findings and support MBCT as a safe, acceptable, and effective approach for this population.

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&

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CHAPTER 1

LITERATURE REVIEW

Introduction

Pregnancy and childbirth are normal developmental stages in the lives of most women (Zelkowitz, 1996), and are often a source of great happiness and excitement for a woman. However, pregnancy and motherhood also constitute a significant life change in social roles (Kruckman, 1992) and self-definition (Gruen, 1990) requiring major psychological adjustments. These transitions provoke a wide range of emotional reactions that include anxiety and stress (Da Costa, Larouche, Dritsa, & Brender, 1999) despite cultural expectations to the contrary. Most particularly, a complex interplay exists between the biological, social, and psychological changes affecting a woman's physical and mental wellbeing during pregnancy and the postpartum period (i.e., the 6 week period following childbirth). These changes have dramatic physical, social, and emotional effects on women's lives (Zelkowitz, 1996). Given the intense physiological, psychological, and social changes that occur during pregnancy and following childbirth, it is not surprising that many women experience difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed) during pregnancy and following childbirth. The introduction of the term *postpartum depression* in the past 50 years (Brockington, 1998) reflects the recognition of maternal depression to be a common occurrence following pregnancy and childbirth.

New onsets of depression are estimated to be at 1.6% during pregnancy and 5.7% in the postpartum period (Banti et al., 2011). The classification of postpartum mood disturbances has been hotly debated across the years (Doucet, Dennis, Letourneau, &

Blackmore, 2009); the debate turns on if postpartum mood disturbances are entities unique to the postpartum period, or if they reflect more heterogenous conditions already existing in the nomenclature (Brockington, 1998), or if they are associated with a history of depression independent of childbirth (Campbell, Cohn, Flanagan & Popper, 1992; Dennis, 2004; O'Hara, Schlechte, Lewis, & Varner, 1991). Currently, *postpartum blues* (PPB), *postpartum depression* (PPD), and *postpartum psychosis* (PPP) are described in the literature, and consensus suggests that PPD and PPP are are not distinct diagnostic entities (Doucet et al., 2009). The current view is such that PPB, PPD, and PPP overlap in symptomology, but are different in severity and have unique, differentiating features (Perfetti, Clark, & Fillmore, 2004). PPD is identified when difficult mood beginning within 4 weeks after childbirth is considered more than just difficult mood, "baby blues," or PPB. PPP is a serious condition affecting 0.1-0.2% of postpartum women (Mauthner, 2002) and it often hasa sudden and acute onset not preceded by depressed maternal affect (Brockington, 1998). Women with PPP can pose a serious safety risk to themselves and their children (Mauthner, 2002).

PPD is a major depression affecting from 10% to 20% of women worldwide (Zelkowitz, 1996). Approximately 15% of Canadian postpartum women (Statistics Canada, 2009) are affected by PPD, with a reported incidence of 35,000 Canadian women (Statistics Canada, 2009). To give context to the scope of PPD as a problem among Canadian postpartum women, consider that while 15% of Canadian women are affected by PPD, 2 to 4% of Canadian women have gestational diabetes (Canadian Diabetes Association, n.d.), 7.8% of Canadian women deliver preterm infants (Statistics Canada, 2009), and 5.6% of pregnant women in British Columbia are diagnosed with

pregnancy-associated hypertension (British Columbia Reproductive Care Program, 2004). The symptoms of PPD do not differ from depression in other periods of life (O'Hara, Zekoski, Philipps, & Wright, 1990); hence PPD is defined in accordance with the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria for major depressive disorder (O'Hara, Stuart, Gorman, & Wenzel, 2000) and PPD diagnosis is often based on standardized diagnostic criteria for depression (O'Hara et al., 1990; Troutman & Cutrona, 1990). Diagnostic criteria for PPD includes a minimum period of 2 weeks in which the woman presents with depressed mood or loss of interest or pleasure in daily activities that represents a change from normal behavior and causes impairment in everyday functioning (American Psychiatric Association, 2000). At least four of the following symptoms must also be present for a diagnosis: weight change in absence of dieting, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue or loss of energy, feelings of worthlessness or guilt, decreased ability to think or concentrate, and recurrent thoughts of death or suicide (American Psychiatric Association, 2000).

PPD has negative and enduring consequences for a woman and for her relationships with her partner, infant, and other children. Although effective non-psychopharmacologic approaches such as Cognitive Behavioral Therapy (CBT), Interpersonal Therapy (IPT), group therapy, and supportive therapy, are available for managing PPD and its symptoms, low rates of treatment seeking and high rates of attrition are reported in the literature (Klier, Muzik, Rosenblum, & Lenz, 2001). Of major concern is that PPD is a powerful disruptor of early parenting, particularly when it interferes with mother-infant interaction (Murray, Fiori-Cowley, Hooper, & Cooper, 1996).

Epidemiology of mood disorders during pregnancy and postpartum periods is still not completely defined. Robertson, Grace, Wallington, and Stewart (2004) conducted a systematic review of studies investigating PPD risk factors and found that demographic variables such as age, relationship status, socioeconomic status, and ethnicity are not strongly associated with risk for PPD. While risk factors consistently reported in the literature are lifetime history of depression, history of PPD, and lack of social support (O'Hara & Swain, 1996); the strongest predictors of PPD appear to be a history of depression independent of childbirth (Campbell et al., 1992; Dennis, 2004; O'Hara et al., 1991), previous PPD, *perinatal* depression (PND), and *postpartum anxiety* (Beck, 2001; Campbell et al., 1992; Misri, Kostaras, Fox, & Kostaras, 2000; O'Hara et al., 1991).

Women who have been diagnosed with PPD in the past are 50% more likely to experience depression following the delivery of another child (Field, 2010; Jones & Venis, 2001). Although depression during a previous pregnancy has been shown to be a predictive factor of PPD, it is still unclear if the depressive symptoms during a previous postpartum period are more specific predictors as compared to previous depressive episodes in general life. Nonetheless, it seems that it might be important to assess separately preventive interventions for pregnant women with a history of PPD from those who display risk factors such as low social support and perhaps most particularly, a history of depression independent of childbirth. Assessment of safe, acceptable, and effective preventive interventions for pregnant women both with a history of depression independent of childbirth or a history of PPD, may lead to decrease in rates of PPD and PPD relapse. Although it is also well documented that prenatal anxiety predicts PPD (Beck, 2001), there is limited and mixed literature on whether interventions for anxiety and depression during

pregnancy protect against PPD. Theoretically, addressing and preparing women prenatally for the possibility of postnatal depression could reduce the incidence of PPD for women generally but possibly most specifically, for pregnant women at risk for PPD. For example, cognitive models of depression suggest that when individuals with a previous history of depression become distressed, they reactivate patterns of automatic negative thinking that can trigger a depressive episode (Segal, Williams, & Teasdale, 2002). Derived from and based on the cognitive model of depression, the goal of MBCT as a preventive as well as treatment approach, is to interrupt participants' automatic and reactive relationship to the thoughts, feelings, and sensations that contribute to depressive relapse (Segal et al., 2002). During the program, participants learn and practice specific skills and techniques for dealing with problematic situations and make changes in the underlying views that shape their relationship to negative thoughts, feelings, and events (Segal et al., 2002). Once individuals have these skills, they can use them at the time of distress.

In the last 10 to 15 years, research has pointed to the usefulness of MBCT in depression (Kenny, 2008; Ma & Teasdale, 2004; Segal et al., 2002); depression relapse (Michalak, Heindenreich, Meibert, & Schulte, 2008); binge eating (Baer, Fisher, & Huss, 2005); bipolar disorder (Miklowitz et al., 2009; Williams et al., 2008); generalized anxiety disorder (Evans et al., 2008); suicidality (Williams, Duggan, Crane, & Fennel, 2006); and brain injury (Bedard et al., 2008; Marson & Tasker, 2013). While the literature includes some studies exploring the effectiveness of mindfulness-based interventions (e.g., Dimidjian & Goodman, 2009; Duncan & Bardacke, 2010; Vieten & Astin, 2008) in pregnant and postpartum populations, it is almost silent on the use of MBCT as a standalone therapeutic modality for work with pregnant and postpartum women. I was only

able to locate unpublished initial findings on the use of MBCT as a preventative for PND recently presented at a 2012 conference (Dimidjian, Goodman, Felder, & Gallop, 2012; Felder, Dimidjian, Goodman, & Gallop, 2012). The perinatal period is defined as the period immediately before and after birth starting at the 20th to 28th week of pregnancy and ending 1 to 4 weeks after birth. Given its original design as a depressive relapse intervention, the idea of MBCT as a PPD prevention program for pregnant women with a history of PPD seems potentially fruitful for exploration. It certainly appears that MBCT has not been investigated among expectant mothers with a history of PPD. I aimed to address this gap in the literature and to contribute to practice options for the prevention and treatment of *difficult postpartum mood* and tentatively, PPD. Given the negative impact of PPD on women, early mother-infant relationships, family and other relationships; low rates of treatment seeking; and limited preventive programs; examining the prenatal implementation of MBCT as a preventive approach for *difficult postpartum mood* has potentially meaningful implications for participants, society, and knowledge promotion.

Pregnancy and Motherhood

As noted earlier, pregnancy and motherhood is often thought to be a source of great happiness and excitement for a woman and, in many but not all cases, her partner. The birth of an infant is expected to be a joyous time anticipated and celebrated by everyone. Although both pregnancy and childbirth are normal developmental stages in the lives of most women (Zelkowitz, 1996), the transformation to motherhood involves changes to social roles (Kruckman, 1992) and self-definition (Gruen, 1990). These transitions may provoke a wide range of emotional reactions, despite cultural expectations.

It is important to point out that not all pregnancies are planned and that not all pregnant women have a partner. Research findings are mixed on the role and presence of the partner and PPD risk. Generally single motherhood is not identified as a major risk factor for PPD. Speaking to unplanned pregnancies, it was reported in the 2008 Canadian Maternity Experience survey that 20% of women indicated that they would have preferred to conceive later and 7.1% not at all (Public Health Agency of Canada, 2009). However, research does not identify unplanned or unwanted pregnancies as a major PPD risk factors (Beck, 2001). Nonetheless, it is important that researchers remain sensitive and alert to these factors (i.e., single motherhood and unplanned pregnancies) possibly increasing the risk for PPD.

The desired outcome of pregnancy is a healthy infant and a healthy mother. A complex interplay between biological, hormonal, social, and psychological factors impinges on women's mental health during pregnancy and the postpartum period (Zelkowitz, 1996). The postpartum period has been termed the "fourth stage of labor", and has three distinct but continuous phases beginning in the first 6 to 12 hours following delivery, through the second and subacute postpartum period that lasts between 2–6 weeks, and the third and delayed postpartum period (Romano, Cacciatore, Giordano, & La Rosa, 2010), which can last up to 6 months (Brown, Posner, & Stewart, 1999 cited in Romano et al., 2010).

Some cultural expectations as well as some research findings, portray pregnancy as a period of unusual well being (Lubin, Gardener, & Roth, 1975) and decreased psychopathology (Kane, Lipton, & Ewing, 1969). Other research counterbalances these findings and indicates pregnancy as a time of emotional upheaval and life change, which

may be experienced as psychological crisis (Da Costa, Larouche, Dritsa, & Brender, 2000; Nilsson & Almgren, 1970). With particular attention to the postpartum period, in addition to hormonal changes, particularly the decrease in progesterone following delivery, there are many reasons for increased susceptibility to depression during this time. According to one study, even mothers' brain anatomy changes during the first months of motherhood (Kim et al., 2010). Women's self-efficacy and sense of identity may also be challenged by motherhood (Gruen, 1990). As a consequence, women may feel more vulnerable at this time as they face the new (or additional) responsibilities of motherhood along with changes in their relationship with their partners and social others (Kruckman, 1992). These factors, combined with the sleep deprivation associated with care of a newborn, can increase a woman's vulnerability to depression. Overall, childbearing is a life-changing experience accompanied by a range of emotional responses — positive and negative — that include anxiety and stress (Da Costa et al., 1999), and does not always reflect cultural and storied expectations.

It has also been argued that postpartum mood disturbances (PMD) are Western culture-bound conditions because the culture is such that few provisions are made to support women physically and emotionally during this physically exhausting period characterized by dramatic shifts in roles (Kruckman, 1992) and psychological adjustments (Da Costa et al., 2000; Nilsson & Almgren, 1970) to motherhood. However, O'Hara and Swain (1996) suggest that PMD's affect women in every society and from every socioeconomic background. Researchers who have conducted studies of postpartum mood disturbance in different parts of the world report that the psychological symptoms experienced by mothers in the year following their infants' birth are similar

across cultures (Watson & Evans, 1986). For example, the prevalence of PPP in Saudi Arabia appears to be comparable to that observed in Western epidemiological studies (Shoeb & Hassan, 1990). This literature suggests that PMD is not culturally bound.

Mood disturbance during pregnancy and the postpartum period is therefore considered common across women and across cultures and reflects multiple, complex, and rapidly occurring changes. At the one end of the postpartum mood continuum, the experiences of PND and PPB are viewed by most as a normal adjustment period for new mothers. PND occurs during pregnancy or within a short time (hours) after delivery and is considered normal and possibly even, expected (Pregnancy & Children, n.d.). PPB is a transient emotional response that begins 3 to 5 days after the birth of an infant (Pregnancy & Children, n.d.), usually lasts only a few days, and is experienced by 85% of mothers (Jones & Venis, 2001). PPB is not related to a history of psychiatric illness, but is seen as a normal consequence of childbirth. However, some women progress from these mild and transient symptoms of depression into a more fixed pattern of difficult mood and, for yet another subset of postpartum women, into disabling full-blown PPD.

Postpartum Mood Disturbances

During the postpartum period, up to 85% of women experience some type of mood disturbance (O'Hara, Neunaber, & Zekoski, 1984). “Depressed mood” during and after pregnancy is often discussed in the literature but not defined and seldom described in detail. Vieten and Astin (2008) provided a compelling and useful discussion around the idea of “difficult mood” being a more inclusive and less stigmatizing description of mood changes experienced by the majority of women during the postpartum period. The term “postpartum depression” is also often used as an umbrella term to encompass several

PMDs that follow childbirth. As I stated earlier, three postpartum disturbances are commonly described in the literature: PPB, PPD, and PPP. These overlap in symptomology, but are different in severity and have unique, differentiating features (Perfetti, Clark, & Fillmore, 2004).

Postpartum Blues

On one end of the spectrum is PPB and is the most commonly observed postpartum mood disturbance, with estimates of prevalence ranging from 30 to 75% (O'Hara et al., 1984) and up to 85% (Jones & Venis, 2001). PPB is characterized by tearfulness, irritability, and anxiety, and generally peaks at 3 to 5 days after delivery and lasts anywhere from a few days to two weeks (Hapgood, Elkind, &Wright, 1988). Symptoms do not interfere with a mother's ability to function and to care for her infant. The symptoms are not severe and do not need treatment, they often resolve spontaneously within a few days or a week.

Postpartum Depression

PPD is a mood disturbance that lies in the middle of the PMD spectrum. PPD is defined as a non-psychotic depressive episode that begins in the postpartum period (O'Hara, 1994). In general, this disturbance tends to appear between the fourth and eighth week after birth, and may last for several weeks (O'Hara, 1986). For many women, PPD remits between 2 and 4 months postpartum (Campbell et al.,1992; Beeghly et al., 2002; Horowitz et al., 2001). However, some studies have reported the persistence of symptoms for up to a year (Kumar & Robson, 1984). Although symptoms of depression may remit spontaneously one year after childbirth, some women remain depressed for much longer (Peindl, Wisner, & Hanusa, 2004). For example, Horowitz and Goodman (2004) found

that 30.6% of women diagnosed with PPD at one month postpartum continued to score in the depressed range on the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) two years later. These findings suggest that PPD can take on a chronic course throughout the first 1 to 2 years after childbirth.

Postpartum Psychosis

On the extreme end of the postpartum mood disturbance spectrum is PPP, the most serious of the PMDs. PPP can be a devastating disorder with severe consequences for women; 4% of women who experience PP commit suicide (Appleby, Mortensen, & Faragher, 1998). Fortunately, PPP is a relatively rare event with an estimated incidence of 1.1 to 4 cases per 1,000 births (Bloch, Daly, & Rubinow, 2003). PPP is considered an emergency and requires immediate medical treatment. PPP is at times confused with PPD. PPP is more severe than PPD, presents within the first 2 weeks postpartum, often requires hospitalization, and is characterized by a rapid development of bizarre delusions, depression, hallucinations, and disorganized behaviour that jeopardize the safety of the newborn infant and the mother (Sit, Rothschild, & Wisner, 2006).

Although PPP is a severe and important postpartum condition, it is beyond the scope of my study and I therefore do not address PPP specifically in this paper. Rather, I would like to draw the reader's attention back to PPD.

Postpartum Depression

Here I will discuss PPD symptoms and diagnosis, PPD prevalence statistics, factors associated with postpartum mood and PPD, PPD risk factors, the effects of prenatal and postpartum depression, barriers to seeking help and treatment, and current PPD treatment and prevention options.

PPD Symptoms and Diagnosis

Although for most women PPB symptoms are relatively mild and usually resolve in two weeks (Hapgood et al., 1988), 10% to 15% of women go on to experience a more disabling and persistent form of PPD (Zelkowitz, 1996). The symptoms of PPD do not differ from depression in other periods of life (O'Hara et al.,1990) and PPD diagnosis is often based on standardized diagnostic criteria for depression (O'Hara et al., 1990; Troutman & Cutrona, 1990). PPD symptoms include: tearfulness, despondency, feelings of inadequacy, irritability, dysphoric mood, insomnia, appetite disturbance, confusion, anxiety, guilt, and suicidal ideation (American Psychiatric Association, 2000). These symptoms may exert a profound effect on interpersonal relations and may extend to the relationship the mother establishes with her infant, as well as the quality of care she provides to her infant. PPD is currently defined in accordance with the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria for major depressive disorder (O'Hara et al., 2000). Typically, a PPD diagnosis requires that the symptoms must be present for one week at the very least and result in some impairment to the woman's functioning (O'Hara et al., 2000). PPD may also be diagnosed based on the number and severity of symptoms that are identified on a questionnaire such as the aforementioned BDI (Beck et al., 1961) or the Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden, & Sagovsky 1987).

PPD Prevalence

PPD affects from 10% to 20% of postpartum women worldwide (Zelkowitz, 1996) and approximately 15% of Canadian postpartum women (Statistics Canada, 2009). As stated above, the phenomenology of PPD is not too different from depression in other

periods of life and similar instruments are used to assess evidence of depression. A further confound is that a history of depression in general life is a risk factor for PPD. That is, it is unclear whether PPD is something unique to the postpartum experience or a depressive relapse for women with a history of depression. The Canadian Community Health Survey revealed that 4.8% of Canadians experienced a major depressive episode in 2005 (Patten et al., 2006) and prevalence in the general population is approximately twice as high in women as men (Weissman et al., 1996). Eberhard-Gran, Eskild, Tambs, Samuelsen, and Opjordsmoen (2002) suggest that women's risk for depression is increased in the postpartum period, when controlling for the uneven distribution of risk factors. Indeed, research suggests a 3-fold increase in the onset of depression in the first 5 weeks postpartum compared to non-childbearing women of similar age, marital status, and parity (Cox, Murray, & Chapman, 1993). Whether or not PPD is no different from depression that can occur at any other time in a woman's life, it needs to be understood in the context of motherhood.

Women with PPD often report having had depressive symptoms beginning in the first trimester, improving over the course of pregnancy, and rising again just before or after delivery (Banti et al., 2011; Bergink et al., 2011). After delivery, the highest prevalence occurs in the first 3-months and gradually falls over the next year (Banti et al., 2011). Estimates of the prevalence and incidence of PPD vary depending on the assessment method, the timing of the assessment, and population characteristics (Bennett, Einarson, Taddio, Koren, & Einarson, 2004; O'Hara & Swain, 1996). As noted before, Zelkowitz (1996) suggests that PPD affects from 10% to 20% of postpartum women worldwide, but a meta-analysis of published articles found PPD to be present in 13% of

mothers (O'Hara & Swain, 1996). Despite this variability, many research findings and practitioner beliefs indicate that depression is common in pregnancy and in the postpartum period, and that PPD is a pressing public health issue (Milgrom et al., 2011).

Factors Associated with Postpartum Mood and PPD

Numerous factors have been identified in the research as being associated with PMDs. Research suggests that hormonal changes are one of the variables contributing to PPB and that psychological and social variables are also strongly related to other PMDs. Identified risk factors for PMDs include stress or complications during pregnancy or delivery (Alexander & Higgins, 1993; Righetti-Veltema, Conne-Perrard, Bousquet, & Manzano, 1998). It seems likely that when a woman is faced with the stress of childbirth in addition to other major stressors, she may be more prone to developing depressive symptomatology during the postpartum period (O'Hara et al., 1991). Other risk factors include prenatal expectations (Alexander & Higgins, 1993); infant-related issues (Small, Lumley, & Yelland, 2003) including method of feeding (i.e., breastfeeding or bottle feeding; Marshall, 1993); lack of social support (Small et al., 2003; Zelkowitz, 1996); low satisfaction with the marital relationship (Mauthner, 1998); and socio-economic circumstances (Rigletti-Veltema et al., 1998; Sequin, Potvin, St-Denis, & Loiselle, 1999).

PPD Risk Factors

Identifying who is at risk for developing PPD is essential for its prevention and treatment. PPD risk factors include high levels of psychological stress and anxiety during pregnancy (Heron, O'Connor, Evans, Golding, & Glover, 2004); depression during pregnancy and previous history of PPD (Campbell et al., 1992; Field, 2010; O'Hara et al., 1991), most particularly an untreated past episode of PPD (Gabbe, Niebyl, Landon,

Simpson, & Goetzl, 2007; Josefsson et al., 2002); a personal or family history of mood disorder, inadequate social supports, marital dissatisfaction or discord, and recent stressful life events such as a death in the family, financial difficulties, or a loss of employment (O'Hara et al., 1991). Striking, is that women who have suffered one episode of major depression following a previous childbirth, have a recurrence risk of about 50% following the birth of another child (Field, 2010; Jones & Venis, 2001). Although some researchers report evidence that biological and hormonal factors contribute to PMD, no link between PPD and levels of the hormones progesterone, estrogen, or cortisol have been consistently demonstrated (Gitlin & Pasnau, 1989). Overall, a prior history of depression independent of childbirth is the most robust predictor of PPD (Campbell et al., 1992; Dennis, 2004; O'Hara et al., 1991). Further, PND and a previous history of PPD, make relapse more likely during the postpartum period (Beck, 2001; Campbell et al; Misri et al., 2000; O'Hara et al., 1991). Banti and colleagues (2011) found a 3.7% and 7.7% recurrence rate of depression for women with a history of PND and PPD, respectively.

High levels of psychological stress and anxiety during pregnancy have also been associated with PPD (Beck, 2001; Heron et al., 2004). Austin, Tully, and Parker (2007) demonstrated the specific relationship between the increase in risk of PPD as a function of increasing levels of self-reported worry during pregnancy. Mild worry is an important cognitive component of anxiety and while considered both normal and adaptive during pregnancy, excessive prenatal worry is associated with negative outcomes such as the development of PPD. Overall, it is clear that it is important for healthcare professionals and community workers to focus on prenatal preventive interventions that aim to lessen

symptoms of anxiety, psychological stress, and depression both during pregnancy and in the postpartum period.

The Effects of Prenatal and Postpartum Mood Disturbances Including PPD

Further to prenatal mood disturbance being a risk factor in and of itself for PPD, there is increasing recognition of the negative effects that prenatal and PMDs have on the health of the mother, the infant, and the entire family (Stewart, 2005). Prenatally, evidence suggests that psychological stress and anxiety contribute directly or indirectly to an increased risk of spontaneous abortion, pre-eclampsia, and higher rates of surgical deliveries (Bonari, Bennett, Einarson, & Koren, 2004) and preterm deliveries (Hellin & Waller, 1992). Compared to than infants born to non-depressed mothers, infants born to mothers with depression are more likely to have lower Apgar scores (a quick test performed on an infant at 1 and 5 minutes after birth to assess the health immediately after birth), lower birth weight (Hellin & Waller, 1992), and are twice more likely to be admitted to neonatal intensive care unit specializing in the care of ill or premature newborn infants (Chung, Lau, Yip, Chiu, & Lee, 2001). These newborns are fussier (Wurmser et al., 2006) and it is more likely that they will fail to thrive (Drewett, Blair, Emmett, & Emond, 2004). Turning to the effects of depression most specifically, I now discuss the effects of depression (and in some cases PPD) on the mother herself, her interactions with her infant, her family, and on society more generally.

Effects on mother. PPD is a destructive condition, rendering the mother apathetic and joyless. As such, PPD has physical, social, and emotional effects on the lives of women and their entire relational system (Zelkowitz, 1996). As noted earlier, for many women, PPD remits between 2 and 3 months postpartum (Beeghly et al., 2002; Horowitz

et al., 2001) but may continue for up to two years following childbirth (Horowitz & Goodman, 2004; Josefsson, Berg, Nordin, & Sydsjo, 2001). Important to note too is that when mothers' PPD symptoms are untreated, they are likely to have a poor quality of life (Beck, 1993) and are 25 to 100% more likely to experience a recurrent depressive episode in the future or in subsequent pregnancies (Gabbe et al., 2007; Josefsson et al., 2002). There is also a robust literature documenting the effects of depression on mother-infant interaction.

Effects on mother-infant interaction. Depressed mothers are reported to be less attuned to their infants, less affirming and more negating of their infants(Murray et al., 1996), and more likely to have negative perceptions of their infants' behaviour (Mayberry & Affonso, 1993) than mothers without depressive symptoms. Webster and his group (2001) found that women with depressive symptoms perceived their children as difficult and felt inadequately prepared to care for them.

The first and earliest human interpersonal relationships occur in the context of mother-infant interaction (Becker, 1987, p. 65, cited in Tasker, 2005; Sacks, 2000, pp. 52 -53, cited in Tasker, 2005). This mother-infant interaction facilitates cognitive, communicative, linguistic, socioemotional, and personality development of the child (Richter, 2004, p. 28). Optimal mother-infant interactions typically consist of experiences of frequent and positive episodes of mother-infant interaction and social exchange (Jung & Short, 2002, cited in Tasker, 2005). These interactions enable development of secure attachment (Koester, 1994, cited in Tasker, 2005), self-regulation, and attention to the environment (Jung & Short, 2002, cited in Tasker, 2005).

Cognitive and affective symptoms associated with depression, such as preoccupation and low maternal self-esteem, can manifest in many ways in the mother-infant relationship (Greenspan, 1990, cited in Tasker, 2005). Impaired mother-infant interactions and negative perceptions of infant behavior have been linked to various adverse outcomes, including attachment insecurity (Gordon, Cardone, Kim, Gordon, & Silver, 2006), and emotional (Hipwell, Goossens, Melhuish, & Kumar, 2000), cognitive (Cogill, Caplan, Alexandra, Robson, & Kumar,1986), psychological (Fihrer, McMahon, & Taylor, 2009; Pawlby, Sharp, Hay, & O'Keane, 2008), social (Goodman, 2007; Murray, Sinclair, Cooper, Ducournau, & Turner, 1999), and developmental delays, as well as long-term behavioural problems in children (Goodman, 2007; Murray, 1992). Dawson's (1992, cited in Tasker, 2005) finding that the organization of emotional responses in 10 month-old infants of depressed mothers is different from that of infants of non-depressed mothers provides at least one early-appearing explanation for later adverse social emotional developmental outcomes for children.

Reasons for why the organization of infants' emotional responses are affected by a mother's depression become clear in light of the following findings. Symptoms of a mother's depression typically affect her interactions with the infant ranging from extreme withdrawal, disengagement, inactivity, and understimulation to intrusiveness, inconsistency, hostility, and over-stimulation (Hipwell et al., 2000). For example, some mothers who are depressed are often emotionally and socially unavailable to their children (Weinberg & Tronick, 1998, cited in Tasker, 2005); are affectively less responsive to their children (Cummings, 1995, cited in Tasker, 2005); engage in significantly fewer episodes of communicative exchange and social play (Kochanska,

1991, cited in Tasker, 2005); are less likely to share in the child's focus of attention to objects or activities in a play interaction (Weinberg & Tronick, 1998, cited in Tasker, 2005); seldom touch and look at their infants (Cohn, Campbell, Matias, & Hopkins, 1990, cited in Tasker, 2005); also speak less to their infants (Goodman, 2007); and are less affectively engaged with their infants (Campbell, Cohn, & Meyers, 1995, cited in Tasker, 2005) than mothers who are not depressed. Other depressed mothers excessively stimulate or are more intrusive in their interactions with their infants, for example, interrupting the infant's focus of attention or current activity (Goodman, 2007).

It is evident then that beginning in infancy, depression in mothers is associated with children's wide-ranging problems in cognitive and socioemotional development, as well as behavioural problems (Goodman, 2007). In sum, maternal depressive episodes occurring soon after birth are perhaps of particular cause for concern when one considers that in most cultures, mothers are the primary caregiver to infants in the early months of their lives, and that infants are highly sensitive to the quality of their interpersonal contacts.

Effects on family. PPD poses risks to the whole family by inhibiting the woman's ability to perform daily activities, bond with her infant, and relate to her partner (Beck, 1995; Philipps & O'Hara, 1991). Marital breakdown has been directly attributed to the effects of PPD (Cogill et al., 1986; Robertson et al., 2004).

Effects on society. PPD has been linked with higher costs to society because it causes an increased number of work absences (e.g., increase in sick days) and increases the burden on the healthcare system (e.g., increased postpartum visits with physicians; Weissman et al., 2004). As Weissman and colleagues (2004) report, mothers

experiencing PPD symptoms have more "functional disability" and an increased use of psychiatric services.

Given the serious and potentially enduring consequences of both prenatal and postpartum depression that are broad ranging in scope, the effective prevention and treatment of PPD is of clear importance and of benefit to women, their children and families, and society at large.

Barriers to Seeking Help and Treatment

A clear barrier to seeking help is the failure to recognize a postpartum mood disturbance for what it is and in some cases, the lack of a formal diagnosis of PPD. Cases of PPD are frequently missed (Murray, Woolgar, Murray, & Cooper, 2003; O'Hara & Swain, 1996; Peindl et al., 2004) and the lack of diagnosis is the major obstacle to the treatment of PPD. Studies have shown that as many as 50% of PPD cases are undiagnosed (Murray et al., 2003; O'Hara & Swain, 1996; Peindl et al., 2004).

As already mentioned PPD is currently defined in accordance with the DSM-IV criteria for major depressive disorder (O'Hara et al., 2000). Whiffen (1992) argues, however, that the majority of PPD cases are mild in severity, with more than one-half of diagnosable cases meeting the criteria for minor rather than major depression. Thus the parameters set by DSM-IV omit many women experiencing legitimate PPD symptoms but who may not fit all the criteria of the DSM-IV. For example, in one study of 214 women who brought their children to a general pediatric clinic, 40.2% reported high levels of depressive symptoms on the psychiatric symptom index, but only 29% were identified as depressed by the pediatricians (Heneghan, Silver, Bauman & Stein, 2000).

Other barriers to the successful identification and treatment of PPD include the general public's lack of knowledge about its symptoms (Dennis & Chung-Lee, 2006), patient denial, which includes minimization of symptoms (Goldman, Nielsen, & Champion, 1999), and low rates of treatment seeking and high rates of attrition (Klier, et al., 2001).

Dennis and Chung-Lee (2006) suggest that the stigmatization of PPD hinders women from seeking help and results in a refusal of treatment. The stigma associated with seeking mental health services reflects the perception that a person who seeks psychological treatment is somehow undesirable or socially unacceptable. Shame and fear of being labeled mentally ill thus prevent some women from seeking help. Furthermore, social stigma of being labeled an "unhappy mother" is an important obstacle to diagnosis of PMD. Lumley (2005) reports that upon formal screening, many women scoring in a depressive range fully admit to being depressed, but they reject the label of PPD because this implies to them that their feelings are caused by their babies. It is also possible that women than that a diagnosis implies that there is something wrong with them as a woman.

Lumley's survey revealed that one-third of women scoring within a depressive range at eight months postpartum were still depressed 12-18 months later, but only 15% sought help. Current interventions for PPD that have been investigated often focus on women who meet the DSM-IV diagnostic criteria for major depressive disorder (O'Hara et al., 2000) making it impossible to generalize these findings to undiagnosed postpartum women. Using Lumley's (2005) findings, this strict inclusion in intervention studies of only women diagnosed with PPD is therefore likely to neglect the majority of women

who continue to experience depression well into and beyond the first year postpartum. In my opinion this is an ethical oversight and a gap in both the literature and clinical practice.

In addition to the limitation of the strict inclusion criteria in intervention studies, Vieten and Astin's (2008) recruitment experience suggests that pregnant women are reluctant to identify themselves as depressed. Vieten and Astin attempted to recruit participants for a feasibility study and found that pregnant women were reluctant to identify themselves as depressed or anxious, even in the past. When their recruitment materials asked for participants who were "dealing with anxious or depressed mood" they had a very low response rate. Vieten and Astin state that when they recruited participants with posters referring to "difficult moods", they recruited a more adequate number of participants.

Therefore, and for the reasons, that: (a) stigma and lack of diagnosis may prevent women with self-admitted depression to participate in an intervention study; (b) PMD exists on a continuum; and (c) Vieten and Astin's (2008) recruitment experience, I believe that researchers should consider investigations of interventions for PPD with an inclusion criterion that considers *difficult mood* and not "postpartum depression" and includes pregnant women who self-identify as struggling with mood difficulty following the birth of an infant. My aim in this study was to be mindful and inclusive of *all* pregnant women who self-identified as having previously struggled with mood difficulty following the birth of an infant that was more than PPB and rather more like PPD. Therefore my criteria included the time frame of 2 or more weeks of *difficult mood*

experienced during a previous postpartum period irrespective of having received a diagnosis of PPD.

While much of the current research in health care focuses on how health professionals can help women to manage PPD symptoms, exploring the best ways to help women recognize the signs and symptoms of PPD may be an important component of reducing barriers to treatment and of prevention itself. Mindfulness training, for example, might help prevent the recurrence of PPD by enabling women to become more self-compassionate and more aware of their feelings and needs. One of the core skills that the MBCT program teaches is the ability to recognize mind states (e.g., ruminative thoughts) that may lead to the development or relapse of depression (Segal et al., 2002). This, combined with providing pregnant women with a history of previous postpartum mood difficulty or PPD (officially diagnosed or not) with the skills for dealing with depressive signs and symptoms, may prevent relapse.

Current PPD Treatment Options

Because my focus in this study is on prenatal intervention and not treatment of PPD, I will limit my discussion to current treatment options to a brief overview before providing greater discussion on preventive or early intervention prenatally for pregnant women with a history of PPD.

As with depression unrelated to childbirth, basic treatment for PPD can be either pharmacological or pysychotherapeutic. In general, the combination of psycho- and pharmacotherapy is considered first-line treatment for mild to severe depression (American Psychiatric Association, 2000). However, psychotherapy is considered the

first-line therapy for pregnant and breastfeeding mothers, and many mothers prefer psychological treatment (Dennis & Chung-Lee, 2006).

Pharmacotherapy. Although some pharmacological interventions have been well-studied for depression unrelated to childbirth, they are not regarded equivocal for PPD because of methodological limitations (Dennis, 2004). Only a few studies have examined the efficacy of pharmacological treatments and prevention of PPD.

There are two main types of antidepressants (ADs) prescribed by physicians to lessen symptoms of PPD: serotonin specific re-uptake inhibitors (SSRIs) and tricyclic antidepressants (TCAs; Canadian Pharmaceutical Association, 2002).

Winser and colleagues (2001, 2004) conducted randomized controlled trials (RCTs) to evaluate the efficacy of a TCA (Nortriptyline) and SSRI (Sertraline) in the prevention of PPD. They hypothesized that administering AD medication to asymptomatic women in the immediate postpartum period may prevent recurrent episodes of PPD. Nondepressed pregnant women with at least one past episode of PPD were recruited in two studies. Winser and colleagues' (2001) assigned 26 women to receive Nortriptyline and 25 placebo in the immediate postpartum period. Similarly, in Winser and colleagues' (2004) study 14 women were assigned to receive Sertraline and 7 placebo in the immediate postpartum period. The Hamilton Depression Rating Scale (HDRS) was used in both studies to assess women for 20 sequential weeks in the Nortriptyline and Sertraline trial. Nortriptyline showed no significant benefit over placebo in reducing recurrence rates of PPD (recurrence rates were 23% for Nortriptyline and 24% for placebo). These negative results contrast with those of the 2004 study that used a similar protocol testing the SSRI Sertraline over placebo. In this trial, only 1 (7%)

mother who took sertraline experienced a recurrence, compared with 4 (50%) mothers who were assigned placebo. This difference was statistically significant. The time to recurrence was also significantly longer in the Sertraline-treated women than in the placebo-treated women. It is unknown whether the conflicting results of these two studies are related to methodological limitations, inadequate drug mechanism, or intervention ineffectiveness.

To study the effectiveness of the SSRI Fluoxetine and CBT in depressive illness in postnatal women, Appleby, Warner, Faraghe, and Whitton (1997) conducted a RCT with 87 women with PPD. Participants were randomized to one of four groups: (a) Fluoxetine plus one CBT session; (b) Fluoxetine plus 6 CBT sessions; (c) placebo plus one CBT session; and (d) placebo plus 6 CBT sessions. Fluoxetine was significantly superior to the placebo in reducing the severity of depressive symptoms and also showed greater improvement with six CBT counseling sessions compared with one session. These differences were evident after one week, and improvement in all groups was complete after four weeks. However, women with chronic or resistant depression and breastfeeding women were excluded from this trial. Based on the results of this study, Fluoxetine and at least one but preferentially more than one CBT counselling session can be considered as an effective treatment for PPD.

The demonstrated effectiveness of ADs used in postpartum women notwithstanding, the effects of ADs on infants' developing neurological systems are a concern for breastfeeding mothers (Pearlstein et al., 2006). The Ontario Ministry of Health and Long-Term Care recommend breastfeeding during the first six months to promote optimal growth and development in infants. The Canadian Pharmaceutical

Association (2002) warns that SSRIs can be secreted into breast milk and cause colic, fussiness, insomnia, or excessive crying in breastfeeding infants. Therefore there remains good reason for any concern among both expectant and nursing mothers about taking ADs because there is lack of research on their long-term effects on infants' rapidly developing brains and nervous systems.

Psychotherapy. Given that the long-term effects of ADs on infants' neurological development are unknown, investigations of nonpharmacological interventions during the postpartum period are essential. Psychotherapy is considered the first line of PPD treatment for breastfeeding mothers (Moses-Kolko & Roth, 2004; Perfetti et al., 2004). Researchers offer strong evidence that IPT (O'Hara et al., 2000) and supportive psychotherapy (Morrell et al., 2009; Wickberg & Hwang, 1996) are effective treatment approaches for PPD. Because these interventions are offered on an *individual basis* and are therefore resource intensive, they may be inaccessible or unaffordable for some women.

Group-based interventions are likely to be a more accessible, appealing, and cost-effective treatment option for depression and anxiety. We know more generally from the research that group therapy is an effective and efficient support and treatment option across multiple presenting issues including non-childbirth-related major depression (McDermut, Miller, & Brown, 2001). Indeed, multiple studies have demonstrated the effectiveness of group-based psychotherapy in the treatment of PPD: studies on CBT groups (Meager & Milgrom, 1996; Highet & Drummond 2004; Honey, Bennett, & Morgan, 2002; Milgrom et al., 2005), IPT groups (Mulcahy, Reay, Wilkinson, & Owen,

2010), and PPD support groups (Chen, Tseng, Chou, & Wang, 2000; Rojas et al., 2007) found that these interventions reduced depressive symptoms in postpartum women.

Mindfulness based group approaches to depression, including MBCT, have been found to significantly reduce rates of depressive relapse and recurrence among adults with recurrent major depression (Ma & Teasdale, 2004; Teasdale et al., 2000). As such, MBCT is a promising group treatment intervention for PPD because it specifically targets both risk and perpetuating factors in current episodes (e.g., ruminative thinking) as well as factors for depressive relapse and recurrence, through a combination of mindfulness meditation, yoga, psychoeducation, and cognitive-behavioral strategies. Accordingly, there is a need for research to focus on the safety, acceptability, and effectiveness of MBCT for the treatment of PPD.

Current PPD Prevention Options

Interventions that can prevent the recurrence of PPD – or at least dampen and help self-manage a recurrence – will reduce personal as well as financial costs for pregnant women with a history of previous *difficult postpartum mood* or PPD. As noted earlier, amongst other things, prenatal stress, anxiety and depression contribute to PPD (O'Hara & Swain, 1996). Building on this, given their finding demonstrated a link between depressive symptoms in pregnancy and at 8 postnatal weeks, Evans, Heron, Francomb, Oke, and Bolding (2011) argued that it is not only important to study depression and anxiety treatment options during pregnancy, and that the timing of preventive interventions may be important to successful preventive interventions; but that offering interventions during pregnancy may be important to the future wellbeing of the mother, child, and family. Their thinking is, of course, supported by the well-documented effects

of maternal depression on maternal-infant interaction and early social-emotional development of children that I described earlier. Depression is relatively easy to identify during pregnancy because women are in regular contact with their health care providers (Austin & Lumley, 2003). Pregnancy may thus provide an optimal opportunity for the screening and prevention of new PPD episodes and PPD recurrences.

Boath, Bradley and Henshaw (2005) performed a systematic review of the literature detailing RCTs assessing the success of preventive interventions for PPD. They evaluated 20 published RCTs that dealt with the prevention of PPD. Prevention interventions included psychological and social support interventions; IPT; postnatal stress debriefing; information provided in booklets; reconfiguring midwifery and other services; individual home based care; hormonal prevention; use of ADs; and "other approaches" that, for example, evaluated preventive impact of dietary calcium and thyroxine.

Of these, 15 addressed the role of psychological and social interventions in preventing PPD. Seven of these successfully decreased PPD symptoms. Four of the 7 trials that demonstrated some short-term success in preventing PPD started their intervention in the prenatal period. Interventions in these four studies included (a) antenatal and postnatal psychosocial intervention groups (see Elliot et al., 2000); (b) individually tailored postnatal information and support (see MacArthur, Winter, & Bick, 2002); (c) 6 weeks preparation for parenthood classes for couples plus one extra session focusing on postpartum psychological issues (see Matthey, Kavanagh, Howie, Barnett, & Charles , 2004); and (d) IPT oriented group intervention (see Zlotnick, Johnson, Miller,

Pearlstein, & Howard, 2001). Thus, providing a combination of both prenatal and postnatal interventions may be an important factor in the successful prevention of PPD.

It is of interest that whether participants were primiparous (i.e., women who are pregnant for the first time) or multiparous (i.e., women having had at least one previous birth) was not identified in the 7 studies of the 15 studies addressing the role of psychological and social interventions in preventing PPD (see Buist, Westley, & Hill, 1999; Charbol et al., 2002; Gunn, Lumley, Chondros, & Young, 1998; Marks, Siddle, & Warwick, 2003; Priest, Henderson, Evans, & Hagan, 2003; Stamp, Williams, Crowther, 1995; Webster et al., 2003). Three studies reported that interventions were offered only to primaparous women (see Brugha et al., 2000, Matthey et al., 2004; Zlotnick et al., 2001) and four compared the effectiveness of interventions for primaparous and multiparous women (see Armstrong, Fraser, Dadds, & Morris, 1999; Elliott et al., 2000; MacArthur et al., 2002; Small, 2000). Not describing the nature of the sample and not separating out primiparous from multiparous participants makes it difficult to assess the validity and utility of these findings. It is reasonable to think that past experience both of pregnancy and difficult or postpartum mood (including PPD), not only puts multiparous women in a very different "place" to primiparous women and that they might well differentiate in their response to prevention/intervention programs, but that programs would need to be tailored to address the special considerations of each group. For example, while Small (2000) found no significant difference between primiparous and multiparous women (N>900) assigned to 2 groups (one-hour postnatal debriefing with a midwife 24 hours postpartum vs. control group receiving routine care) on EPDS scores six months postpartum. Armstrong and colleagues (1999) and Elliott and colleagues (2000) both

reported successful preventive PPD interventions for primaparous but not multiparous women. Only one of the trials (MacArthur et al., 2002) included in the Boath group's (2005) systematic review had any impact on PPD symptoms of multiparous mothers. Intervention in this case consisted of providing individually tailored postnatal information and support as well as extending postnatal midwife care to multiparous mothers following childbirth (MacArthur et al., 2002). These results suggest that multiparous mothers may be more resistant to PPD prevention interventions.

In sum, Boath's group (2005) commented on the evident lack of research investigating prevention of relapse among multiparous women with a history of PPD. They concluded by saying that multiparous women are an easily identifiable group in terms of their 'at risk' status for PPD and argued that further research on PPD prevention and treatment for multiparous women is merited. They suggested studies on non-pharmacological interventions that have been found effective in mild to moderate depression among the general population.

Given the high prevalence of PPD and its negative effects on women and infants amongst other things, it is imperative that cost and resource-effective group interventions for pregnant and postpartum women who are depressed continue to be developed and tested, and that the results be made available to counsellors, health care providers, and women in order to give them quality information on which to base treatment choices. MBCT is an effective approach to the prevention of recurrent depression (Ma et al., 2004; Segal et al., 2010; Teasdale et al., 2000). As an established prevention and intervention program that integrates mind–body practices into behavioral interventions for recurrent depression, I thought that MBCT administered during the prenatal period may prove

effective in reducing one or more of prenatal stress, anxiety, or depression in multiparous women with a history of *difficult mood* or PPD following a previous birth.

MBCT is a group-based intervention and is likely to be more accessible, affordable, and appealing to pregnant women who have previously struggled with *difficult mood* or PPD. Groups provide a safe setting for members to learn and practice new skills (LeCroy & Daley, 2005, p.105) and to receive social support from other members. Groups provide an opportunity for participants to feel less isolated, to be empowered through receiving and offering support, to have their feelings and experiences normalized, and to learn through modeling. Sonstegard and Bitter (1998) suggest that the group functions as a value-forming agent. In other words, participants are offered a safe space to re-evaluate their own values and to draw on and learn from the perspectives of other members. Anecdotally and drawing from her clinical experience, my thesis supervisor describes how, for many participants, the group experience provides a sense of solidarity and normality (S. Tasker, personal communication, November 2, 2012). Scrnadis (2005) noted that groups were of particular value to postpartum women with depression because they normalized symptoms and connected women with others who had similar difficulties. Group therapy expert Irvin Yalom has often discussed the power of groups to normalize mental health issues (Yalom, 1974; Yalom & Leszcz, 2005; Yalom, & Terrazas, 1968). Interventions in a group format may help to normalize women's experiences of *difficult postpartum mood* and decrease their perception of stigmatization. Realizing that one's negative experiences are not unique or rare, but also experienced by others, can trigger an immense sense of relief and result in both affective

and cognitive modifications. These modifications may be characterized by a reduction in anxiety, embarrassment, shame, and/or depressive symptoms (Yalom & Leszcz, 2005).

Further to its group-based structure, MBCT is also strongly founded on the principles and practice of mindfulness, and mindfulness-based interventions during pregnancy have been empirically associated with improved prenatal and postnatal wellbeing (Beddoe, Yang, Kennedy, Weiss, & Lee, 2009; Duncan & Bardacke, 2010; Vieten & Astin, 2008). While none of these studies were longitudinal and therefore did not provide data on the residual effects of mindfulness training during pregnancy on the postpartum period in terms of mood, inasmuch as psychological distress and mood during pregnancy are risk factors for *difficult mood* and PPD, mindfulness appears to be well considered as a possible candidate for preventive interventions. These studies will be further discussed in a greater detail in the next section. Now I would like to turn the reader's attention to a more detailed discussion of the psychological construct of mindfulness and MBCT.

Mindfulness

Mindfulness is a practice and a psychological trait or skill. It is generally defined as paying attention to present experiences from moment-to-moment – including bodily sensations, feelings, thoughts, and external stimuli from the environment – while observing judgments and reactivity and learning to let go of them (Kabat-Zinn, 1990).

Although mindfulness-based interventions have been in use for over 20 years, it has only been more recently that mindfulness has been extensively examined as a psychological construct. Research points to three primary components in the process of mindfulness: *attention, attitude,* and *intention* (Shapiro, Carlson, Astin, & Freedman,

2006). *Attention* involves observing the operations of one's moment-to-moment internal and external experience, and includes skills in intentionally switching attention from one stimulus or object to another. *Attitude* (i.e., *how* we attend) refers to non-judgment, acceptance, trust, patience, non-striving, curiosity, and kindliness (Kabat- Zinn, 1990; Shapiro et al., 2006). *Intention* (i.e., *why* one is practicing) is dynamic and evolving and extends from an intention to practice to the intentionality one brings to directing, sustaining or switching attention. These elements of *attention*, *attitude*, and *intention*, are interconnected aspects of the process that ''is'' mindfulness. This process can lead to the development of a non-judgmental and de-centered view on one's experiences, thoughts, sensations, and emotions. This perspective potentially leads to a shift in one's relationship with these phenomena. When this shift happens one can clearly observe, recognize, and disengage from habitual patterns or mind states, and begin to respond, rather than react (Shapiro et al., 2006).

Mindfulness originated in ancient eastern meditation and yoga traditions and has gained a lot of interest from mental health and cognitive researchers and practitioners who have incorporated it into interventions. Kabat-Zinn, internationally known for his work as a meditation teacher and writer, has been partially responsible for bringing mindfulness into mainstream western psychological practices. Kabat-Zinn observed that expereinced meditators seemed able to manifest sustained ways of being that were particularly peaceful, well-adjusted, and content. He wondered if these practices might enhance peace and wellbeing in the general and clinical population. In 1990, Kabat-Zinn developed Mindfulness-Based Stress Reduction (MBSR) from his own rich meditation experience and offered it to the patients of pain clinics and other outpatients who had no treatment

success within the conventional system. As a result of his work, educational programs that train people in mindfulness skills have been adapted into clinical intervention programs (Kabat-Zinn, 1990) and MBCT is one such program based on and developed from MBSR (Segal et al., 2002).

The MBCT Approach to Depression

There are multiple theoretical models that are used to explain depression including the following: (a) the interpersonal model of depression (Coyne, 1976), which speculates that poor interpersonal relationships are important factors in causing depression; (b) the behavioural model of depression, which postulates that depression results from stressors which disrupt normal behavior patterns (Lewinsohn, 1974); and (c) perhaps the most preeminant of models, the cogitive model of depression, which posits that emotions and behaviors are influenced by perception, interpretation, and thoughts, and that depression manifests in and is supported by irrational thinking (Ellis, 1962) or maladaptive and automatic negative thoughts about self, the world, and the future (Beck, Rush, Shaw, & Emery, 1979).

Accordingly, IPT proposes that learning to resolve interpersonal disputes will alleviate depression (Klerman, Weissman, Rounsaville, Chevron, 1984) while behavioural therapy stresses the need to increase depressed persons' participation in reinforcing or pleasure giving activities (Lewinsohn, Antonuccio, Steinmetz, & Teri, 1984). CBT uses a number of cognitive and behavioural techniques to change the way depressed individuals' thoughts, images, and interpretation of events contribute to the onset and maintanace of the emotional and behavioural disturbances associated with depression (Beck et al., 1979).

Cognitive therapies such as CBT have been empirically tested and are seen as gold standards in psychological treatment of depression (Segal et al., 2002). However, Segal et al. (2002) argue that today depression is considered to be a recurrent disorder because the major contributor to prevalence rates of depression is the return of new episodes of depression in people who have already experienced one episode. Therefore, interventions that focus on prevention of reoccurrence of depression may play a big role in lowering prevalence rates. As a relatively new psychological intervention designed specifically to prevent depressive relapse, MBCT draws from the structure and process of MBSR, and integrates elements of cognitive therapy (Kingston et al., 2007) and CBT (Beck et al., 1979) with training in mindfulness meditation (Segal et al., 2002).

MBCT's theoretical premise is that depressive relapse is triggered by reactivation of negative modes of thinking and feeling which can perpetuate into a depressive episode (Segal et al., 2002). MBCT postulates that in comparison to individuals who have not experienced depression, individuals who have experienced depression in the past are more cognitively vulnerable to low moods, including mild dysphoric states. These vulnerabilities may reactivate the patterns of negative, ruminative thinking that characterized previous episodes, reestablishing the configuration of depression (Segal et al., 2002; Teasdale et al., 2000).

While mindfulness training is the key element of both MBCT and MBSR, MBCT is distinct from MBSR for at least two reasons. First, MBCT integrates mindfulness skills with techniques from cognitive and CBT therapies. Second, MBCT is designed to target homogenous groups and MBSR is intended to be delivered to heterogeneous groups. Finally, while MBSR is recommended to improve health-related quality of life as a

component of medical disease management, the strong case for MBCT is its recommended use to prevent depressive relapse among individuals who have recovered from depression (Fjorback, Arendt, Ørnbøl, Fink, & Walach, 2011). However, research over the past 10 to 15 years has shown an increasing number of populations and presenting issues that may or may not be independent from depression, responding to MBCT including, for example: binge eating (Baer et al., 2005); bipolar disorder (Miklowitz et al., 2009; Williams et al., 2008); generalized anxiety disorder (Evans et al., 2008); suicidality (Williams, Duggan, Crane, & Fennel, 2006); and brain injury (Bedard et al., 2008; Marson & Tasker, 2013).

MBCT is a structured group program designed for 8 to 30 participants. It employs mindfulness meditation to alleviate the suffering associated with physical, psychosomatic, and psychiatric disorders including but not limited to depression and its relapse. It is a psychoeducational, skill-based, small-scale therapeutic group which runs for eight consecutive weeks. Weekly sessions follow a manual and each session runs for approximately 2 hours. Mindfulness skills are taught, practiced, and then discussed within a group setting. The curriculum includes mindfulness meditations, guided relaxation, training in cognitive-behavioural skills, group discussions, and homework assignments. Participants are encouraged to do individual daily mindfulness practices at home.

The MBCT program contains three broad elements: the cultivation of awareness through mindfulness practices (e.g., mindful breathing and staying present); the development of a positive, healthy attitudinal framework (i.e., non-striving, acceptance, and geniune interest in every expereince); and the acquisition of an understanding of how to deal with difficult moods. The latter is conveyed through discussions, reflections, group exercises, information about depression, homework assignments, and a number of

exercises based on cognitive therapy that demonstrate the links between thoughts, feelings, bodily sensations and actions tendencies. Participants are invited to develop mindfulness through an intentional, accepting, and non-judgemental attitude towards their painful and difficult sensations, emotions, cognitions, and behaviours.

A key underlying assumption of MBCT is that depressive relapse is fueled by cognitive reactivation; accordingly, a key therapeutic target of MBCT is to prevent and interrrupt cognitive reactivation. MBCT's primary teaching component is experiental learning through mindfulness exercises that target cognitive reactivation. Mindfulness practices are intended to help participants monitor their internal reactions and thereby make more skillful response choices. Participants are helped to recognize distressing thoughts, feelings and bodily sensations, to hold such experiences in awareness; and to develope an attitude of acceptance towards them. Through group and homework practices, participants develop a repertoire of mindfulness skills and attitudes, including focusing, sustaining, and switching attention; and accepting their present moment experience, including felt sensations in the body, without judgment or elaboration. When attention wanders or becomes scattered, participants are encouraged to use the physical sensations of the breath and the body as ‘‘anchors’’ for their attention. Thus MBCT targets processes that are common across mood and anxiety disturbances, such as rumination and emotional avoidance (Segal et al., 2002). Attention focus helps participants discover triggers for potential downward spirals of affect or mood (Kabat-Zinn, Lipworth, & Burney, 1985). Being able to recognize and be aware of distressing feelings allows participants to more consciously choose their response to dysfunctional thoughts, emotions, and sensations rather than habitually reacting to them (Segal et al., 2002). Further, it is believed that being

able to observe thoughts and feelings nonjudgmentally, and to view them simply as mental events that come and go, rather than as aspects of self, will help prevent the escalation of negative thoughts into ruminative patterns and alleviate depressive symptoms (Teasdale et al., 2000).

Sessions typically begin with a 20 to 30 minute guided meditation (e.g., "body scan" or sitting meditation) and involve a variety of experiential exercises (e.g., practicing nonjudgmental acceptance and using of ''mini-meditations'' or ''breathing spaces'' in challenging situations). These practices help participants learn to become more aware of mental patterns and emotional responses to various external stimuli. This helps break the old association between negative moods and negative thoughts. Participants learn to allow distressing emotions, thoughts, and bodily sensations come and go without feeling that they have to fight them, suppress them, or run away from them. Participants are also encouraged to learn to remain focused on the present moment, without ruminating about the past or worrying about the future.

The first published MBCT manual (Segal et al., 2002) was based on a theoretical account of cognitive reactivity and depression and had a clear focus on preventing depressive relapse. Recent research provides evidence confirming the usefulness of MBCT for preventing relapse among adult populations struggling with reoccurring episodes of depression. Results from a recent meta-analysis of six RTCs with a total of 593 participants, showed that MBCT is associated with a 44% higher reduction in the risk of depressive relapse than common methods for treating patients with three or more previous episodes (Piet & Hougaard, 2011). This finding is consistent with the increasing number of studies on clinical populations suggesting that MBCT offers a promising, cost-efficient

psychological approach to preventing relapse in recovered depressed patients who had reccurent depression (e.g., Kuyken et al., 2008; Ma & Teasdale, 2004; Segal et al., 2010; Teasdale et al., 2000). MBCT has shown to be not only effective in the prevention of depressive relapse, but also in the treatment of current depression (Hofmann, Sawyer, Witt, & Oh, 2010), and chronic or treatment resistant depression (Barnhofer et al., 2009; Eisendrath, Chartier, McLane, 2011; Eisendrath et al., 2008).

In the last 10 to 15 years, research has also pointed to the usefulness of the MBCT approach in improving the quality of life for people with bipolar disorder (Miklowitz et al., 2009; Williams et al., 2008); social phobia (Piet, Hougaard, Hecksher, & Rosenberg, 2010); generalized anxiety disorder (Craigie, Rees, Marsh, & Nathan, 2008; Evans et al., 2008); parenting stress (Bailie, Kuyken, & Sonnenberg, 2012); suicidality (Crane et al., 2008); brain injury (Bedard et al., 2008; Marson & Tasker, 2013); and cancer (Foley, Baillie, Huxter, Price, & Sinclair, 2010).

In addition to the above noted MBCT-specific findings, empirical findings indicate that mindfulness-based interventions delivered to a variety of adult populations can reduce the impact of stress (Astin, 1997; Shapiro, Astin, Bishop, & Cordova, 2005; Shapiro, Schwartz, & Bonner, 1998; Speca, Carlson, Goodey, & Angen, 2000); help individuals view life as more meaningful and manageable (Dobkin, 2008), improve psychological wellbeing and quality of life and increase positive affect (Nyklicek & Kuijpers, 2008); alleviate anxiety and depression (Segal et al., 2002); prevent relapse or the recurrence of major depressive disorder (Kuyken et al., 2008; Ma & Teasdale, 2004; Segal et al., 2010; Teasdale et al., 2000); reduce or alleviate substance abuse (Witkiewitz, Marlatt, & Walker, 2005); and even improve immunological function (Davidson et al., 2003). Pregnant

women and new parents in general also benefit from MBCT based intervention (Dimidjian & Goodman 2009; Duncan & Bardacke 2010; Vieten & Astin 2008).

Finally, researchers report low attrition rates for MBCT. A review of RCTs (Fjorback et al., 2011) concluded that most (75–97%) patients randomized to the MBCT and MBSR intervetnions completed treatment, which was defined as attending at least four or five sessions. This finding is important because it speaks to the acceptability of the MBCT program for a majority of participants.

MBCT for Pregnant Women

Almost no published work exists on the use of MBCT for pregnant women. However, the good news is that published studies evaluating the effectiveness and acceptability of mindfulness-based interventions during pregnancy do exist. Findings reported from these studies suggest that the practice of mindfulness techniques is associated with improved prenatal and postnatal wellbeing (Beddoe et al., 2009; Duncan & Bardacke, 2010; Vieten & Astin, 2008). The use of MBCT specifically as a preventative for PND is currently being assessed but with only unpublished initial findings recently presented at a 2012 conference (Dimidjian et al., 2012; Felder et al., 2012).

It also appears that MBCT has not been investigated among expectant mothers with a history of PPD. No published or controlled studies to date have clearly demonstrated the effects of MBCT on prenatal and postnatal depression. Research groups interested in the use of mindfulness interventions for pregnant women and new mothers have only evaluated a mix of mindfulness interventions, making it difficult to isolate the effectiveness of MBCT as a standalone intervention.

For example, a study by Beddoe and colleagues (2009) examined the feasibility, acceptability, and effectiveness of a 7-week mindfulness-based yoga group intervention that aimed to reduce distress during pregnancy. The study used a one-group (i.e., no control group) pre- post-intervention design. The intervention combined elements of Iyengar yoga and MBSR. Sessions also included a psychoeducational component that explored the use of mindfulness in daily life, the psychological and physiological effects of stress, and the possibilities of using mindfulness while giving birth. Participants were recruited via approved recruitment flyers posted throughout the community. E-mailed notices alerted doulas, midwives, and childbirth educators of the program; and 5-min presentations about the study were made to selected childbirth classes. Nineteen interested participants were eligible for the study and 17 participated in the intervention and completed the study. Two women left the study due to pregnancy complications. One participant had incomplete baseline data and was excluded from the analysis. Participants (N=16) were healthy married women averaging 30.4 years, expecting a first baby and were between 12 and 32 weeks gestation when the intervention began. Eight women were in their third trimester (27 to 32 weeks gestation) when the intervention began and eight women were in their second trimester (13-26 weeks gestation). A baseline demographic comparison of the 8 women in their third trimester when the intervention began versus 8 women in their second trimester did not reveal any difference in marital status, age, income, education, and ethnicity. Although none of the women reported current mental health problems, nearly one third (n=5) reported a history of depression or anxiety.

Data were collected at baseline before the first day of the group intervention (Time 1, T1) and immediately after completion of the seven weekly intervention sessions

(Time 2, T2). At T2 eight women were 34 to 40 weeks gestation and eight women were 20 to 23 weeks gestation. T1 and T2 measures included anxiety, perceived stress, pain, and morning salivary cortisol. T2 measures also included participant evaluation of the intervention. Stressors and hassles unique to pregnancy were measured with the Prenatal Psychosocial Protocol stressor subscale (Curry, Burton, & Fields, 1998, cited in Beddoe et al., 2009). Anxiety was measured by the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1989, cited in Beddoe et al., 2009). Pain was measured using a modified version of the Brief Pain Inventory (BPI; Daut, Cleeland, & Flanery, 1983; cited in Beddoe et al., 2009) with two dimensions: pain intensity ranging from 0=*no pain* to 10=*worst pain imaginable*, and pain interference with daily activities ranging from 0=*does not interfere* to 10=*completely interferes*.

The study revealed significant reductions in physical pain (p=0.04) from T1 to T2 for women practicing mindful yoga in their second trimester but not for women in the third trimester. There was a significant decrease in perceived stress (p=0.05) and trait anxiety (p=0.03) from T1 to T2; however, this decline appeared to be from intervention effects on the third trimester group.

Acceptability was measured at T2 following the 7-week intervention with a questionnaire asking respondents to rate their experience and satisfaction with the intervention. Ninety-four percent participants (n=15) reported being satisfied with the program. As a direct result of the intervention, 63% participants (n=10) reported feeling more hopeful and confident, having a greater knowledge of what is stressful in their lives and knowing how to take better care of themselves, and having the ability to appropriately handle stressful situations.

In another recent study investigating the effects of mindfulness-based interventions during pregnancy, Vieten and Astin (2008) tested a mindfulness intervention based on MBCT, MBSR (Kabat-Zinn, 1990), and Acceptance and Commitment Therapy (ACT; Hayes, Luoma, Bond, Masuda, & Lillis, 2006). This intervention resulted in statistically significant attenuations of anxiety and depression, and pregnant women in the sample reported no adverse experiences or concerns about the mindfulness exercises.

These data suggest that MBCT, which shares several elements of the intervention used by Beddoe's group (2009) and Vieten and Astin (2008), has the potential to be an appropriate and effective intervention during pregnancy. However, the safety, acceptability, and effectiveness of MBCT as a standalone intervention needs first to be determined.

MBCT and PPD Recurrence Prevention

Current research suggests that individuals who are exposed to the MBCT intervention gain protection from general life depression relapse for up to 2 years, which is comparable to the benefits of using ADs for 2 years (Segal et al., 2010). Unlike ADs, benefits accruing from MBCT such as stress reduction (Astin, 1997; Shapiro et al., 1998; Speca et al., 2000), increased positive affect (Nyklicek & Kuijpers, 2008), and alleviation of anxiety and depression (Segal et al., 2002) do not depend on patients taking the medication continually.

Women who are at risk for developing PPD and who learn skills and coping strategies may be able therefore to equip themselves with protective factors such as stress management skills, which may reduce severity and duration of PPD symptoms. Early

intervention is likely to make a difference regardless of their previous experience with *difficult mood* that extended beyond normal "baby blues." Early intervention refers to identifying the risk for PPD, putting an appropriate treatment and follow-up plan in place, and planning and mobilizing resources such as a support system. This might increase the likelihood that a woman will respond well and quickly to treatment if she experiences signs and symptoms of PPD. Given the clear indicators that women with histories of PPD have high rates of recurrence, preventing relapse is an important priority in the treatment of pregnant women, especially if they discontinued AD medication during pregnancy (Cohen et al., 2006). Unfortunately, my search of the literature did not find any current interventions that aim to prevent either the onset or recurrence of PMD. Again, MBCT is a promising intervention since it has shown to be effective in preventing the relapse of depression in various adult populations. The time seems ripe for work looking at the preventive application of MBCT prenatally: Is MBCT safe for pregnant women? Is MBCT acceptable to pregnant women? Is MBCT effective as an option for minimizing the occurrence of prenatal, perinatal, or PPD?

Research Rationale, Special Considerations, Purpose, and Questions

Rationale

PPD is a health concern. During the postpartum period, up to 85% of women experience some type of mood disturbance (O'Hara et al., 1984). Although PPD is no different from depression that can occur at any other time in a woman's life, PPD affects from 10% to 20% of postpartum women worldwide (Zelkowitz, 1996) and approximately 15% of Canadian postpartum women (Statistics Canada, 2009), and needs to be understood in the context of motherhood. Annually, about 35,000 Canadian women

experience PPD (Statistics Canada, 2009), which is greater than the number of Canadian women that have gestational diabetes (2% - 4%; Canadian Diabetes Association, n.d.), pregnancy-associated hypertension (5.6%; British Columbia Reproductive Care Program, 2004), and preterm delivery (7.8%; Statistics Canada, 2009).

PPD is a major public health concern as there is increasing recognition of the adverse effects that prenatal and postpartum depressions have on the mother (Beck, 1993; Beeghly et al., 2002; Gabbe et al., 2007; Horowitz & Goodman, 2004; Horowitz et al., 2001; Josefsson et al., 2001; Josefsson et al., 2002; Stewart, 2005; Zelkowitz, 1996), the infant (Chung et al., 2001; Cogill et al., 1986; Drewett et al., 2004; Fihrer et al., 2009; Goodman, 2007; Gordon et al., 2006; Hellin & Waller, 1992; Hipwell et al., 2000; Murray et al., 1999; Murray, 1992; Pawlby et al., 2008; Stewart, 2005; Wurmser et al., 2006), the entire family (Cogill et al., 1986; Robertson et al., 2004; Stewart, 2005), and society (Weissman et al., 2004).

Given the high prevalence of PPD and its negative effects on women and infants, it is imperative that preventative interventions for difficult postpartum mood, like MBCT, be developed and tested and that the findings be made available to counsellors, health care providers, and women in order to give them quality information on which to base treatment choices.

The need to assess preventive interventions for women with history of PPD. Reports that past history of depressions independent of childbirth is a predictor of PPD (Campbell et al., 1992, O'Hara et al., 1991), coupled with the reports that history of PPD is a strong risk factor for PPD reoccurrence (Beck, 2001; Banti et al., 2011; Campbell et al., 1992; Field, 2010; O'Hara et al., 1991; Gabbe et al., 2007; Jones & Venis, 2001;

Josefsson et al., 2002), suggest the need to assess separately preventive interventions for women with history of depression independent of childbirth and the first onset affective disorders during pregnancy and postpartum, as compared to women who already had experience with PPD.

The need to investigate nonpharmacologic interventions. Pharmacotherapy remains the standard treatment for depression generally. However, given that: (a) the long-term effects of AD medication are unknown and therefore that only a few studies have examined the efficacy of pharmacological treatments and prevention of PPD (Appleby et al., 1997; Winser et al., 2001;Winser et al., 2004); (b) that many women who are pregnant or have recently given birth and are breastfeeding, are concerned about the effects of ADs on infants' developing neurological systems (Pearlstein et al., 2006) and prefer psychotherapy to pharmacologic treatments (Dennis & Chung-Lee, 2006); investigations of nonpharmacological interventions, such as MBCT, during pregnancy and the prenatal period are essential.

The need to assess MBCT as a group intervention for PPD. Given that MBCT is a group-based intervention and that some studies have demonstrated effectiveness of group interventions for non-childbirth-related depression (Honey et al., 2002; McDermut et al., 2001; Milgrom et al., 2005), as well as PPD treatment (Highet & Drummond, 2004; Honey et al., 2002; Meager & Milgrom, 1996; Milgrom et al., 2005; Mulcahy et al., 2010) and prevention (Chen et al., 2000; Rojas et al., 2007), it is likely to be a more cost-effective relapse prevention and treatment approach than individual therapy. However, significant gaps exist in the knowledge base regarding the use of groups, and MBCT groups in particular, to prevent PPD symptoms. Mindfulness based group

approaches to depression, including MBCT, have been found to significantly reduce rates of depressive relapse and recurrence among adults with recurrent major depression (Ma & Teasdale, 2004; Teasdale et al., 2000). Accordingly, there is a need for research to focus on the safety, acceptability, and effectiveness of MBCT for reducing and preventing the recurrence of depressive symptoms among pregnant women who have experienced difficult moods in the past.

The need to assess MBCT's effectiveness as a preventive approach among pregnant women. MBCT's benefits as a preventive approach have been recorded among the general adult population but have not been thoroughly investigated among pregnant women. Empirical studies have already established the effectiveness of MBCT in treating anxiety (Evans et al., 2008; Williams et al., 2008) and depression (Dimidjian et al., 2010; Kenny, 2008; Ma & Teasdale, 2004; Mason & Hargreaves, 2001; Marson & Tasker, 2013; Segal et al., 2002; Teasdale et al., 2000), including current depression (Bedard et al., 2008; Finucane & Mercer, 2006; Marson & Tasker, 2013); depression relapse (Ma & Teasdale, 2004; Michalak et al., 2008; Teasdale et al., 2000); residual depressive symptoms (Kingston et al., 2007); and chronic depression (Barnhofer et al., 2009; Eisendrath et al., 2011; Eisendrath et al., 2008) in the general population and in primary care patients with active symptoms of depression and anxiety (Finucane & Mercer, 2006). Evidence also exists that describes the more general, overarching, and longer-term benefits that accrue from MBCT being those of stress reduction (Astin, 1997; Shapiro et al., 2005; Shapiro et al., 1998; Speca et al., 2000), increased positive affect (Nyklicek & Kuijpers, 2008), improved immunological function (Davidson et al., 2003) and decreased anxiety and depression (Segal et al., 2002).

MBCT is a promising intervention for PPD because it specifically targets risk factors for depressive relapse and recurrence through a combination of mindfulness meditation, mindful movements, psychoeducation, and cognitive-behavioral strategies. Published studies that evaluated the efficacy and acceptability of mindfulness-based interventions during pregnancy suggest that the practice of mindfulness techniques is associated with improved prenatal and postnatal wellbeing (Beddoe et al., 2009; Duncan & Bardacke, 2010; Vieten & Astin, 2008). Being a group-based approach, MBCT also offers safety from stigmatization to pregnant women with a history of *difficult mood* following the birth of a baby.

While the use of MBCT as a preventative intervention for *PND* is currently being assessed, only unpublished initial findings were recently presented at a 2012 conference (Dimidjian et al., 2012; Felder et al., 2012). It appears that MBCT has not been investigated among expectant mothers with a history of PPD. My study aimed to address this gap in the literature and to contribute to practice options for the prevention and treatment of *difficult postpartum mood* and tentatively, PPD. Much of the current research in health care focuses on how health professionals can help women to manage PPD symptoms. Further exploration of the best ways to help women recognize the signs and symptoms of PPD may be an important component of prevention. MBCT might help prevent the recurrence of PPD by enabling women to become more self-compassionate and more aware of their feelings and needs. One of the core skills that the MBCT program teaches is the ability to recognize mind states (e.g., ruminative thoughts) that may lead to the relapse of depression (Segal et al., 2002). This, combined with providing

pregnant women with a history of previous difficult postpartum mood or frank PPD with the skills for dealing with depressive signs and symptoms, may prevent relapse.

MBCT programs delivered in a group context can help prepare women to meet challenges of early motherhood in ways that they can apply to everyday life. The goal of the MBCT program designed for depression relapse prevention is to interrupt one's automatic thoughts and reactive relationship to the thoughts, feelings, and sensations that contribute to depressive relapse (Segal et al., 2002). During the program participants learn and practice specific skills and techniques for dealing with problematic situations and make changes in the underlying views that shape their relationship to negative thoughts, feelings, and events (Segal et al., 2002). Once individuals have these skills, they can use them at the time of distress. Thus, using MBCT as a PPD prevention program is similarly likely to facilitate women's coping with difficult mood, and consequently, to have the potential to promote postnatal outcome and minimize reoccurrence of PPD symptoms.

An investigation of the safety, acceptability, and effectiveness of MBCT will also inform and provide clinical strategies derived from sound theory and evidence and which may significantly enhance prevention efforts. Theoretically, with respect to MBCT's potential to be an *effective* preventive intervention program for pregnant women with a history of PPD, *if* MBCT is effective in (a) providing immediately measurable session-to-session benefits; (b) reducing anxious and depressive symptomology; (c) appeasing self-report anticipatory worry about the recurrence of *difficult mood* following the birth of an expected infant; (d) increasing self-report on confidence to cope with difficult postpartum mood should it occur; and (e) providing self-reported benefit to current psychological

wellbeing and potential benefit for enhanced coping postpartum as documented in the extant literature; *and* because we know that (f) high levels of psychological stress and anxiety during pregnancy (Alexander & Higgins, 1993; Heron et al., 2004; Righetti-Veltema et al., 1998); (g) depression during pregnancy and previous history of PPD (Campbell et al., 1992; Field, 2010; and (h) prenatal expectations (Alexander & Higgins, 1993) are documented risk factors for PPD, *then* it seems reasonable to at least speculate on the potential for MBCT delivered prenatally to women at risk for *difficult postpartum mood* to be effective in possibly curtailing but at least diminishing, the experience of difficult postpartum mood.

This research will thus have numerous potential benefits and implications for counseling practitioners and other healthcare providers working with prenatal and postnatal populations, as it will for women themselves.

Special Considerations

The need to consider parity. A review of the research on preventive programs during the prenatal period resulted in establishing that it is important for the design of preventive programs to take the number of times women have given birth (i.e., parity) into consideration (Boath et al., 2005; Brugha et al., 2000; MacArthur et al., 2002). There is also not enough evidence to assess effectiveness of group interventions for multiparous women. Research is lacking in the evaluation of preventative interventions for multiparous women and effectiveness of group interventions for multiparous women. Evaluation of MBCT as a prenatal group intervention for multiparous women will begin to address this gap in the literature and contribute to practice options for the prevention and treatment of difficult postpartum mood and tentatively, PPD.

The need to consider women undiagnosed with PPD. Although a number of randomized clinical trials have examined psychological interventions for the treatment of PPD (Morrell et al., 2009; Moses-Kolko & Roth, 2004; Perfetti et al., 2004; Wickberg & Hwang, 1996), current effective interventions for PPD that have been investigated often focus on women who meet the DSM-IV diagnostic criteria for major depressive disorder (O'Hara et al., 2000). These interventions are not relevant for undiagnosed women. As many as 50% of PPD cases are undiagnosed (Murray et al., 2003; O'Hara & Swain, 1996; Peindl et al., 2004) and lack of diagnosis is the major obstacle to the treatment of PPD (Murray et al., 2003; O'Hara & Swain, 1996; Peindl et al., 2004).

Given that the parameters set by DSM-IV omit many women experiencing legitimate PPD symptoms but who do not fit all the criteria of the DSM-IV (Hendrick, 2003; Whiffen,1992) and that social stigma of being labeled an "unhappy mother" prevented some women who experienced depressive symptoms, to seek help (Lumley, 2005; Vieten & Astin, 2008), it is important to consider a preventative program for women with experience of *difficult postpartum mood* which exists on a continuum (O'Hara et al., 1984; Perfetti et al., 2004), rather than only for those with an official PPD diagnosis.

Purpose

The purpose of my study was therefore to explore the safety, acceptability, and effectiveness of MBCT as a psychologically and theoretically informed intervention program for pregnant women with a history of difficult postpartum moods (e.g., feeling worried, nervous, sad, down, overwhelmed). *Safety* is a treatment focused concept in that it seeks answers the generic impact of the intervention (Thesaurus, n.d.). It assesses the

participant's lack of deterioration during the course of intervention. *Acceptability* is defined as quality which makes this intervention attractive, satisfactory, pleasing or welcome for and by its participants (Thesaurus, n.d.). Acceptability is participant-focused in that it seeks answers about satisfactoriness as a characteristic of the intervention or program; it has to do with the participant's response to the intervention and refers to whether the intervention is satisfactory to and works for the participant. *Effectiveness* refers to desirable, beneficial, or therapeutic outcome of the intervention when provided under usual circumstances of practice (Thesaurus, n.d.). Effectiveness assesses whether an intervention does more good than harm. Effectiveness is also is a treatment focused concept in that it seeks answers the generic impact of the intervention. It has to do with the mean group response to the treatment and refers to whether the intervention works in a naturalistic clinical setting. I operationally defined safety, acceptability, and effectiveness in the following ways:

1. *Safety* is (a) the absence of harm or damage to, or deterioration in participants' levels of functioning as a result of the participation in this intervention as demonstrated by no significant decreases in individual, interpersonal, social, and overall wellbeing session to session or from Session 1 to Session 8; and (b) the absence of harm or damage to the wellbeing of participants' pregnancies (e.g., spotting, undue escalation in Braxton-Hicks contractions).
2. *Acceptability* speaks to the ability of the program to satisfy participants' expectations from the program and satisfaction with the structure and facilitation of the group as demonstrated by positive evaluations of *the relationship* with facilitators and other participants in each session, *goals and*

topics of each session, the *approach or method* used in each session, and overall satisfaction with each intervention session.

3. *Effectiveness* is the demonstration of benefits to program participants where benefits include a decrease in anxiety and depression symptoms, a decrease in self-reported anticipatory worry about the recurrence of difficult mood following the birth of the expected infant, an increase in self-reported confidence to cope with difficult mood from baseline (T1) to final scores (T2), as well as increases in individual, interpersonal, social, or overall wellbeing session to session or from Session 1 to Session 2.

The study was designed to: (a) assess the safety and acceptability of MBCT during pregnancy for women with a history of *difficult moods* (e.g., feeling worried, nervous, sad, down, overwhelmed) and/or emotions for at least 2 weeks within the first year following the delivery of a live infant; (b) determine if empirical findings regarding the effectiveness of MBCT on depression (Barnhofer et al., 2009; Dimidjian et al., 2010; Eisendrath et al., 2008; Eisendrath et al., 2011; Ma & Teasdale, 2004; Mason & Hargreaves, 2001; Segal et al., 2002; Teasdale et al., 2000) and anxiety (Evans et al., 2008; Williams et al., 2008) in the general population and among primary care patients with active symptoms of depression and anxiety (Finucane & Mercer, 2006) extend to pregnant women with a history of *difficult postpartum mood* and; (c) extend the recent collective findings of the Beddoe group (2009), Duncan and Bardacke (2009), and Vieten and Astin (2008) on the effectiveness of using the mindfulness-based intervention during pregnancy to reduce stress and improve a negative mood.

My study is exploratory and limited to the prenatal period. The study will therefore not contribute to the literature on the preventive or protective value of MBCT. To follow up on the possible reach of MBCT administered prenatally into the postpartum period, I am currently collecting data from the participants at 3 and 6 months postpartum. Despite not contributing to the information about the protective or preventive effects of MBCT in allaying or dampening the recurrence of *difficult postpartum mood* for pregnant women with a history of *difficult postpartum mood*; in assessing MBCT's *safety*, *acceptability,* and immediate *effectiveness* for pregnant women, my study lays important groundwork for considering MBCT as a safe, acceptable, and effective preventive program option for the recurrence of *difficult mood* following the birth of an infant.

Research Questions

Drawing from the PPD and MBCT literatures, I formulated five questions for my study. I did not derive hypotheses for the research questions as the study is exploratory and descriptive.

Research question 1. Do pregnant women who previously experienced *difficult mood* (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant, consider MBCT to be a safe program as assessed through Outcome Rating Scale (ORS), through focus group conversation, field notes and other qualitatively collected data?

Research question 2. Do pregnant women who previously experienced *difficult mood* (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a

live infant, consider MBCT an acceptable program as assessed by the Group Session Rating Scale (GSRS), through focus group conversation, field notes and other qualitatively collected data?

Research question 3. Do pregnant women who previously experienced *difficult mood* (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant gain measurable benefits from participating in an 8-week MBCT program as assessed by difference in ORS scores assessed immediately before Session 1 and immediately before Session 8, through focus group conversation, field notes and other qualitatively collected data?

Research question 4. Do pregnant women who previously experienced *difficult mood* (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant show a measurable decrease in depressive and anxious symptomology from baseline (T1) to following completion of the MBCT program(T2) as measured by the Hospital Anxiety and Depression Scale (HADS), through focus group conversation, field notes and other qualitatively collected data?

Research question 5. For pregnant women who previously experienced *difficult mood* (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant, does participation in an 8-week MBCT program result in a measurable change in (a) self-report anticipatory worry about the recurrence of *difficult mood* following the birth of the expected infant, and (b) self-report on confidence to cope with *difficult mood*

should it recur following the birth of the expected infant as measured with the Worry about Difficult Moods and Coping with Difficult Moods (WC-DM) scale, through focus group conversation, field notes and other qualitatively collected data?

Chapter Summary

In this chapter I have discussed the main constructs associated with my proposed study as well as previous research and studies focusing on MBCT and PPD. I concluded by providing a focused rationale for my study, its special considerations and purpose, and laying out my research questions.

In the following chapter, I outline the methodology for my study and describe the research design and the procedures employed in selecting participants and in data collection, analysis, and writing up.

CHAPTER 2

METHODOLOGY & METHOD

Chapter Introduction

In this chapter I locate and describe the methodological framework and the research design I thought most appropriate to satisfy the purpose of my study. I then describe and discuss the research protocol including the MBCT intervention and the slight modifications adopted for use in my study. Next, I describe and discuss the quantitative instruments and qualitative strategies I used for data collection and how these data were reduced and analyzed. Finally, I provide comment on data verification procedures and measures that I undertook to ensure the rigor and credibility of my findings.

Methodological Framework

The debate around whether *mixed methods* research is a method or *methodology* is ongoing but appears to be setting in some quarters into the definition of mixed methods as a *methodology* (e.g., Klassen, Creswell, Clark, Smith, & Meissner, 2012). *Methodology* is the study of methods against a backdrop of theoretical positions or philosophical perspectives, and involves careful and systematic thinking through of *how* to go about answering the research question at hand: what theoretical position do I bring to this question, what *method* do I use, what measures and strategies do I use for data collection, and how will I analyse and present the data (Mayan, 2009, pp. 30-31). *Theoretical position/perspective* is the particular lens, thoughts of a philosopher or philosophies, or theoretical underpinnings with which we approach our thinking and work (Mayan, 2009, p. 23). A *method* is a particular approach to data collection and

analysis and comprises a set of strategies based on and derived from a body of theoretical assumptions (Richards & Morse, 2007, p. 2, cited in Mayan, 2009, p. 31). Grounded theory and narrative, for example, are both *methods* that can exist within and be informed by any one of several methodological frameworks (e.g., symbolic interactionism, postmodernism, social constructionism, feminism; Mayan, 2009, p. 30).

As a *methodology*, mixed-methods research rests on the belief that *both* positivist (i.e., a realist conceptualization of the nature of reality and the human condition as knowable and measurable) and post-positivist or constructivist (i.e., a relativist or multiple-realities conceptualization of the subjective nature of reality and the human condition) perspectives are necessary to provide "total evidence" (Klassen et al., 2012) about the phenomenon of interest. That is, the intentional combination of quantitative and qualitative data will provide more complete, contextual, and "real-life" (Klassen et al., 2012) understandings of complex research questions. This view is consistent with my *both/and* theoretical position/perspective I bring to my research and clinical work. I subscribe to the view that both positivist and post-positivist perspectives are necessary for a rich and complete understanding of the individual; that there is a helpful tension between knowing the reality (i.e., that something exists irrespective of the form it takes), distribution, and objective/measurable underpinnings of human condition universals (e.g., basic needs, emotions) and, at the same time, appreciating the multiple truths of individual process/experience and therefore, the imperative to deeply consider and to pay respectful attention to individual experience. Combining quantitative and qualitative *methods* can capitalize on the strengths of each approach and provide more

comprehensive answers to research questions, going beyond the limitations of a single approach (Klassen et al., 2012).

Quantitative research seeks to establish objective knowledge and emphasizes measurement when collecting and analyzing data. Quantitative data provide measurable evidence, can be replicated and generalized to other populations, and provide insight into a breadth of constructs and phenomena. The quantitative method generally makes use of deduction in that research is carried out to test a theoretically-based hypothesis (Creswell, 1998). This makes quantitative methods appropriate for my study since the theoretical and empirical literatures suggest or hypothesize that MBCT may be effective for my population of interest.

Qualitative research, on the other hand, is defined as a process of inquiry that is based on distinct methodological traditions and aims to explore and gain insight into a social or human problem (Creswell, 1998), process, or lived experience. Qualitative data provide a depth of understanding about various concepts and emphasize the voices of participants through interviews and quotes. The purpose of qualitative research is to understand and explain the perspectives and meanings of participants (Morrow & Smith, 2000). Generally, researchers use induction in quantitative research in that they generate empirical generalizations and theoretical ideas from the data. Qualitative research allows the researcher to build a complex, holistic picture, and to report the detailed views of research participants (Creswell, 1998). This method is able to provide in-depth description of the meanings the participants attribute to their experiences and address questions that cannot be answered using traditional quantitative methods (Morrow, Rakhsha, & Castaneda, 2001).

I thought that qualitative research strategies would be important to use as a way to add to the literature by capturing and reflecting participants' process/experience of MBCT and their perspective of its safety, acceptability, and effectiveness in their own words.

An additional and implicit strength of *mixed-method methodology* is that data is triangulated. Triangulation refers to the combination of several sources of data (e.g., focus group, questionnaires, clinical observations). It enhances the validity of research findings by validating data through cross-verification from more than two sources. Patton (1990) stated that data triangulation ensures that data are high quality, credible, accurate, and true to the phenomenon under study.

In sum, research questions dictate *method* and *method* exists within a *methodology* that includes the researcher's theoretical position/perspective. Given that my research question turns on exploring the safety, acceptability, and effectiveness of MBCT as a potential preventive group intervention for pregnant women at risk for *difficult postpartum mood*, my opinion is that mixed-methods is a suitable research approach to bring to my study; safety, acceptability, and effectiveness all relate to both subjective process/experience and measurable outcomes. The two methods are used to explore the safety, acceptability, and effectiveness of the MBCT program for pregnant women with a history of *difficult postpartum mood* from different points of view. Methodologically, my study will add to the literature on the utility of mixed-methods research in exploring a practical research question (i.e., assessing the safety, acceptability, and effectiveness of an intervention) in a novel population.

Sample Recruitment and Characteristics

My inclusion criteria included the following: (a) pregnant women; (b) at least 18 years of age; (c) a history of difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed, other distressing emotion) for at least two consecutive weeks within the first year following the delivery of a live infant; (d) living in the greater Victoria area; and (e) proficient in spoken and written English (whether first or second language). I would like to remind the reader of a Vieten and Astin's (2008) recruitment experience and finding described by Lumley (2005) that is relevant to my study and which was particularly important to me to consider in laying out my inclusion criteria. Namely, Vieten and Astin's recruitment experience suggests that pregnant women are reluctant to identify themselves as depressed or anxious, even in the past. Lumley's study suggests that, upon formal screening, many women scoring in the depressive range fully admit to being depressed, but that they reject the label of PPD because this implies to them that their feelings are caused by their infants. It is also important to remind the reader that *difficult postpartum mood* exists on a continuum (O'Hara et al., 1984; Perfetti et al., 2004); another important factor in laying out my inclusion criteria. Therefore, and for the reasons, that: (a) PMD exists on a continuum; (b) stigma and lack of diagnosis may prevent women with self-admitted depression to participate in an intervention study; and (c) Vieten and Astin's (2008) recruitment experience, I decided that a previous diagnosis of PPD or current diagnosis of depression would not be required for inclusion in the study. I wanted to language the inclusion criterion for my study to be a history of *difficult mood* and not "postpartum depression" following the birth of a previous child. My aim was to be mindful and inclusive of *all* pregnant women who self-identified as having

previously struggled with mood difficulty following the birth of an infant that was more than PPB and rather more like PPD. Therefore my criteria included the time frame of 2 or more weeks of *difficult mood* experienced during a previous postpartum period irrespective of having received a diagnosis of PPD.

Ethical approval for the study was obtained from the University of Victoria's Human Research Ethics Board (HREB).

In large part, I adopted and drew from the recruitment protocol used by Beddoe and his group (2009) in recruiting pregnant women to their study on a mindfulness-based intervention. Participants were recruited with the help of informational posters (Appendix A) and flyers (Appendix B) that were distributed to 12 midwifery centers, 41 General Practitioner offices, 2 parenting stores, 3 recreation centers, and 15 coffee shops in Victoria. Two prenatal yoga class instructors were contacted through the mail (Appendix C) and asked for permission to put the posters or flyers up in their offices or to distribute them at their classes. Each letter included five fliers and one poster. Information about the study was also posted on the Mothering Touch[1] website and Facebook page and announced in the Mothering Touch's monthly electronic letter (Appendix D). I gave a short 2 minute presentation before 7 different prenatal yoga classes at the Mothering Touch center. The same information was posted on 5 local Facebook group pages. Nineteen women contacted me by email or telephone and expressed an interest in the study. I was unsuccessful in contacting 3 women who e-mailed me about the study. I had a telephone discussion about the study with 16 women (see Appendix E for prewritten script used as a guideline). Of these 16 women, 3 (18.8%) did not meet the inclusion criteria because they were expecting their first child. Of the 13 women who met the

[1] Mothering Touch is a centre that provides support services, classes and information to

inclusion criteria, 8 (61.5%) declined participation (5 because they were unable to find child-care for their children and 3 because they were unavailable at the times the group was to meet). Thus, the final sample of 5 women reflects 38.5% of eligible women who were interested in participating in the study. See Figure 1 for a summary of the recruitment process.

Demographic Description of Achieved Sample

The achieved sample comprised 5 participants who were all older than 18 years-of-age (*M*=35.2; *SD*=5.2; range=27–40) and Canadian citizens. Two participants were Caucasian of longstanding Canadian heritage and the others were of Scottish-Irish-Polish (*n*=1), English-Norwegian (*n*=1), and Irish (*n*=1) descent. With regards to religion, two (40%) participants were Christian, one (20%) Roman Catholic, one (20%) "eclectic," and one (20%) was a baptized Christian who belonged to a Vipasanna community. All five (100%) participants identified English as their first language. Four (80%) participants were married and one (20%) was living common law. Three (60%) participants had completed a graduate program and two (40%) had an undergraduate university degree. Two (40%) participants were unemployed; and the other three (60%) worked part-time, full-time, or had a full-time position but was on medical leave, respectively. One (20%) participant reported that she had previous meditation experience. Regarding participants' pregnancy status at the beginning of the study, one (20%) participant was in the first trimester, two (40%) in the second, and two (40%) in the third trimester. All participants reported that their pregnancy was planned. One (20%) participant was expecting her third child and four (80%) were expecting their second child. While all 5 participants had experienced *difficult mood* following the birth of a previous infant (as defined and

required by the study's inclusion criteria), two (40%) participants stated that they had received a diagnosis at that time: one of depression and anxiety and the other, a diagnosis of PTSD following the birth of a previous child. Participants did not report taking any medication for mental health purposes currently or following a previous pregnancy and childbirth. Two (40%) participants reported that they received mental health help following a previous pregnancy and childbirth. (See Table 1 for demographic characteristics.)

Research to date consistently reports that participation in 4 of 8 (50%) MBCT sessions is considered as completing a psychotherapeutic program and also as adequate for testing the therapy (Kuyken et al., 2008; Ma & Teasdale, 2004). In my study, I conservatively defined completion as attending a minimum of 5 of 8 (62.5%) MBCT group sessions to be included in the study findings. Correspondingly, I defined dropout as a participant who was absent for more than 3 of the 8 (≥37.5%) group intervention sessions. Three (60%) participants had to miss one session due to conflicting priorities, such as medical appointments or family obligations; all 3 participants informed me ahead of time as to which session they had to miss. One (20%) participant missed 3 (37.5%) sessions (Sessions 5, 6, and 7) because she gave birth in the week following Session 4. This participant (and infant!) returned for Session 8 and also participated in the focus group one week following completion of the MBCT program. Based on the definition of completion as a minimum attendance rate of 62.5%, my study had a zero dropout rate and all 5 participants completed the program. All participants completed measures at baseline (T1) and immediately after last/eights session (T2) of the study and attended at least 5 (62.5%) of the program's 8 sessions. One (20%) participant attended all 8 (100%) sessions, 3 (60%) participants

attended 7 (87.5%) sessions, and the participant who missed 3 (37.5%) sessions due to giving birth, attended 5(62.5%) sessions. Thus, average attendance rate was 85% (*M*=6.8; *SD*=1.1; range=5.0–8.0). All 5 (100%) participants participated in the focus group one week following last MBCT Session (Session 8).

As a token of my appreciation and compensation for their participation, all participants received a copy of Williams, Teasdale, Segal, & Kabat-Zinn's book "Mindful Way through Depression" (2007) as well as a CD of guided meditations and handouts with mindfulness exercises. The book describes the MBCT approach to dealing with difficult moods (e.g., feeling worried, nervous, sad, down, overwhelmed, other distressing emotion) and is a good compliment to the information and content provided during the group. The CD can be used for practicing mindfulness exercises at home.

Research Design and Procedures

As previously stated the purposes of my study were to: (a) assess the safety and acceptability of MBCT during pregnancy for women with a history of difficult moods (e.g., feeling worried, nervous, sad, down, overwhelmed) and/or emotions for at least 2 weeks within the first year following the delivery of a live infant; (b) determine if empirical findings regarding the effectiveness of MBCT on depression (Barnhofer et al., 2009; Dimidjian et al., 2010; Eisendrath et al., 2008; Eisendrath et al., 2011; Ma & Teasdale, 2004; Mason & Hargreaves, 2001; Segal et al., 2002; Teasdale et al., 2000) and anxiety (Evans et al., 2008; Williams et al., 2008) in the general population and among primary care patients with active symptoms of depression and anxiety (Finucane & Mercer, 2006) extend to pregnant women with a history of *difficult postpartum mood* and; (c) extend the recent collective findings of the Beddoe group (2009), Duncan and

Bardacke (2009), and Vieten and Astin (2008) on the effectiveness of using the mindfulness-based intervention during pregnancy to reduce stress and improve a negative mood.

As I described earlier, I decided that *mixed-methods* was the most appropriate *methodology* to bring to my research design for my study where the overarching purpose was to explore and describe the safety, acceptability, and effectiveness of MBCT for pregnant women who experienced difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed) for at least 2 weeks within the first year following the delivery of a live infant. I used an embedded single-study mixed-methods design, which gives equal priority to quantitative and qualitative research components and where quantitative and qualitative data are triangulated and collected one after the other.

Embedded designs provide a means of integrating quantitative and qualitative *methods* into a single research study by embedding one in the other. This design is appropriate for studies where the goal is to provide new insights or more refined thinking (Klassen et al., 2012). As suggested by Klassen and colleagues' (2012), quantitative and qualitative data can be integrated by embedding one within the other. For example, embedding focus group data within the quantitative data collected to assess MBCT's effectiveness will contribute to understanding *how* participants experienced and *what* participants' experiences were of MBCT as an intervention for pregnant women with a history of difficult postpartum mood. This idea of embedding qualitative and quantitative data one within the other is echoed by Creswell and Tashakkori's (2007) suggestion to incorporate and integrate qualitative and quantitative "strands" in the reporting of findings in mixed-methods studies. Using this form of data integration, findings will be

more reflective of the "total evidence" (Klassen et al., 2012) about the research questions being asked in my study.

Single-study design refers to a study in which a number of individuals are considered to constitute one group. The limitation of this design is clearly that of no control group. A single study design is a non-experimental design (i.e., no hypotheses are being tested) used to study the change a group exhibits as a result of an intervention. My study is designed as an exploratory and descriptive study making the single study design acceptable. In this group all five women were considered as one group. They were exposed to the intervention simultaneously, and measures were assessed before and after the MBCT intervention.

As stated earlier, *data triangulation* contributes to the quality, accuracy, and credibility of data collected to explore a phenomenon (Patton, 1990). Participants completed self-report quantitative measures and I collected three sources of qualitative data, namely: field note observations, focus group data, and comments and explanations participants provided on self-report questionnaires.

As a *mixed methods* study designed to incorporate and integrate quantitative and qualitative methods for data collection and analysis, I used the following measures and strategies for data collection. Quantitative measures employed in the present study include the Hospital Anxiety and Depression Scale (HADS; Appendix F), Worry about Difficult Moods and Coping with Difficult Moods scale (WC-DM; Appendix G) the Outcome Rating Scale (ORS; Appendix H), and Group Session Rating Scale (GSRS; Appendix I). To collect qualitative data, I collected and maintained field notes throughout the program, conducted a semi-structured focus group one week following the 8-Week

MBCT intervention, and collected self-report comments and explanations participants provided on WC-DM (Appendix G).

Quantitative data were collected at T1 (immediately prior to commencement of Session 1) and T2 (immediately after Session 8) for depression, anxiety, anticipatory worry about likelihood of *difficult postpartum mood*, and perceived ability to cope with that mood. Quantitative data were also collected immediately before and immediately after each session to evaluate the safety, acceptability, and effectiveness of each session. A fellow graduate student served as research assistant and as a group co-facilitator of all 8 MBCT sessions and the focus group. She and I were responsible for test administration.

Qualitative data were collected from participants in a single-session video-recorded focus group format one week following the completion of the 8-session (one session per week) MBCT program. As a group, participants were asked to discuss their experience and thoughts about participating in the MBCT program. Focus group qualitative data were transcribed verbatim and subjected to a thematic analysis.

In addition to using the focus group as an avenue for learning if participants considered MBCT acceptable and safe for participating while pregnant, my research assistant/group co-facilitator and I kept session-by-session field notes of any anecdotal comments or requests made by participants that were relevant to the study. Thirdly, I collected and analyzed self-reported comments and explanations from participants as collected on the WC-DM scale.

Data Collection Timeline

Part 1: pre-intervention/Time 1 measures. At T1, participants completed the informed consent form (Appendix J), the Demographic Questionnaire (Appendix K) and the two T1 measures: the HADS (Appendix F) and the WC-DM (Appendix G).

Part 2: intervention (Session 1-8). During these weeks the MBCT group intervention was delivered to the study sample. The description of the slightly modified MBCT group intervention is outlined below. Participants were asked to complete the ORS (Appendix H) at the beginning of each group session and the GSRS (Appendix I) at the end of each group session. Field notes and recordings of anecdotal comments or requests made by participants were written immediately following each group session. For example, slight modifications were required to the program to make it more physically comfortable for women in advanced stages of pregnancy (e.g., an extra washroom break and more pillows for sitting meditation). My research assistant/group facilitator and I were also alert to, monitored, and recorded any incidence or mention of adverse effects such as physical complaints (e.g., shortness of breath during the physical exercise components of the session or undue stiffness during or immediately after each exercise and on the day following the group session); heightened emotionality or distress during or as a result of participating in the group; absence from the groups; and withdrawal from the study. During the debriefing meeting following each group, the research team discussed any physical and emotional complaints that were attributed to participating in the program. Main points of these discussions were included in our field notes.

Part 3: post-intervention/Time 2 measures. This was the final group session for the study and took the form of a video-recorded focus group. Following the focus group, T2 measures (HADS and WC-DM) were collected.

Intervention: Mindfulness Based Cognitive Therapy Group

The intervention used in my study was a slightly modified version of the Mindfulness-Based Cognitive Therapy (MBCT) protocol detailed in Segal et al. (2002). As previously indicated, MBCT was developed as a group-based intervention and has been tested in a group setting. Segal et al. suggest that the number of participants in a MBCT group depends on the facilities available and argues that smaller group sizes of up to 12 participants ensures that the intervention remains skill-based and that the group does not turn into a therapy group. I was prepared to facilitate a group of up to 12 participants. However, during the one-month recruitment window and despite my committed and multi-avenue effort to get the word out, only 13 of the 16 women who contacted me met the inclusion criteria for the study and of these, 5 were recruited. The present study thus involved 5 participants in the MBCT group.

As described in greater detail in Chapter 1, MBCT is an eight-week psychoeducational skill-based and on a small scale therapeutic group. ly sessions follow a manual and each session runs for approximately 2 hours. Mindfulness skills are taught, practiced, and then discussed within a group setting. The curriculum includes mindfulness meditations, guided relaxation, training in cognitive-behavioural skills, group discussions, and homework assignments. MBCT intervention relies on participants engaging in mindfulness practice at home as well as in group, which is supported by providing CDs and handouts for home practice. The MBCT manual and participants'

handouts set out the rationale and sequencing for the home mindfulness practice. Homework takes from 30 minutes to an hour a day, and is to be done six days a week, for eight weeks, and involves tasks such as listening to CDs, performing brief exercises.

Participants were encouraged to listen to mindfulness meditation CDs at home for 45 minutes, six days a week. In order to enhance their compliance with protocols, the handouts used the format outlined by Segal et al. (2002). Further to this, as facilitators we followed the weekly agenda as set out in the manual.

Modification of the Mindfulness Based Cognitive Therapy Program

The structure of the sessions and the interventions closely followed the manual. Initially two modifications to the program were made to ensure that the practices were appropriate for pregnant women.

First, I asked participants to ignore the instruction on the CD to lie on their backs and to rather sit or lie on their side for the home practices, and we did similarly in group sessions. This was to ensure their physiological safety. Doctors warn pregnant women, especially in later stages of pregnancy, against lying flat on their back for extended periods of time. When a pregnant woman lies on her back, the weight of the pregnant uterus slows the return of blood to her heart, which reduces blood flow to the fetus (WebMD, 2005). This means the baby is getting less oxygen and fewer nutrients.

Second, I made modifications to the mindful movement component of the program to ensure they were appropriate for pregnant women. Some mindful movements exercises requires participants to bend forward. Bending over for pregnant women puts extra weight on the back. Since many pregnant women have back pain from carrying around the extra weight in front, putting even more strain on the back won't hurt the baby but could pull a

few muscles for a woman (WebMD, 2005). Consequently, instead of bending forward, women were asked to stretch arms forward.

Although I respected, and for the most part adhered to, the MBCT program, I thought it was imperative that the program was flexible enough to be feasible in accommodating the needs of the sample (pregnant women). Further to this and as I noted above in discussing field note writing, I included a weekly check-in and check-out to determine whether there were things (e.g., women's body positioning in meditations) that needed to be adjusted in the program. The main deviation from the published manual was an extended check-in of 15 to 30 minutes. Participants valued the check-in time and continuously commented on the importance of checking in with the group about their mindfulness homework as well as how mindfulness influenced their experience of pregnancy in general. During the course of the program participants made several requests for adjustments to session structures. Because I believed it would be unethical to ignore these requests and because two objectives of my study were to assess the safety and acceptability of the MBCT program for use during pregnancy, I made adjustments to the program to accommodate participants' needs. The requests and corresponding modifications were as follows: in Session 2, participants requested (a) an extra break; (b) changing the wording of holding "a dignified posture" during meditation to "a comfortable position" (women in later stages of pregnancy commented that they were triggered by the words "dignified posture" because they were either physically not able to adopt such a posture or hold it for the time of meditation); (c) including a scan of the belly during the body scan; and, at the end of the Session 3, participants requested that (d) the time spent in sitting meditations be reduced; accordingly, body scans and guided

sitting meditations were subsequently reduced from 40 to 25-30 minutes. Additional modifications included: (a) consistently deviating from the MBCT program's narrow focus on depression to illustrate key points about depression *and* anxiety and to link practices to either or both depression and anxiety; (b) in Session 4, extending psychoeducation around depression to include anxiety, stress, and physical discomfort and; (c) not showing the MBSR video to the participants because neither the video nor the technology were available. Despite these alterations, the modified intervention utilized the core MBCT exercises and philosophy and closely followed the manual and curriculum for each group session.

MBCT exercises used in the study.

Raisin exercise. This 15 minute long exercise is used as an introduction to mindfulness. Using a transcript available in Segal et al. (2002), the facilitator talks participants through a guided examination of all aspects of a raisin – its shape, texture, colour, and sound. Participants are then asked to place the raisin in the mouth, but not bite it. The end of the exercise involves participants chewing the raisin, swallowing it, and following it mentally all the way down to the stomach. Participants are then asked open-ended questions to help them explore and articulate their experience from the inside out.

Body scan meditation. The body scan meditation focuses on specific areas of the body and enhances awareness of these areas. From Session 3 onwards, body scans included a scan of the belly.

Be mindful during a routine activity. For this homework activity, participants are asked to choose a routine activity (e.g., brushing teeth, vacuuming, washing dishes) and to experience it in the same way they experienced the raisin (i.e., with intention, focus,

and moment-to-moment awareness of both internal and external sensations and perceptions).

Homework record forms. These forms were taken directly from Segal et al. (2002) and allowed participants to document how often they practiced mindfulness activities and to comment on the feelings, thoughts, or behaviors that they experienced while engaged in the activities.

Thoughts and feelings exercise. In this exercise, participants are given a scenario where someone they know passes them on the street without saying hello. Participants are then asked to explore their thoughts and feelings in response to the scenario and facilitators help them to see how their thoughts, feelings, and behaviors are connected.

Pleasant and unpleasant events calendars. Participants are given forms (Segal et al., 2002) that help them identify one pleasant event per day in Session 2 and one unpleasant event per day in Session 3. Participants are also asked to record how they thought, felt, and physically reacted to each event. The purpose of this exercise is to help participants understand the need to accept pleasant and unpleasant events equally and without judgment.

Breathing meditation. The breathing meditation focuses on breath and enhances the awareness of breath. Participants were asked to complete the breathing meditation every day for the second and third weeks of the intervention.

Five-minutes hearing exercise. Participants were asked to sit for five minutes with their eyes closed and focus closely on what they were hearing. When their mind wandered or intrusive thoughts arose, participants were instructed to acknowledge it and then refocus on their hearing. After the exercise, facilitators engaged participants in a

discussion about their experience and asked them to identify any obstacles that interrupted their intentional focus on hearing.

Three-minutes breathing space. This exercise asks participants to take one minute to evaluate their immediate physical, emotional, and cognitive conditions. Participants are then asked to focus on their breath for a minute. Finally, the facilitators guided participants through a one-minute scan of their bodies.

Forty-minutes sitting meditation. This meditation combined all of the skills participants have learned up to this point, including the body (and belly) scan, breathing meditations, and hearing exercise. Participants are instructed that if an intrusive thought or event occurs, they should acknowledge it and return their focus back to the breath. In Session 4, the 40-minute sitting meditation was reduced to 30-minutes as requested by participants.

Moods, thoughts, and alternative viewpoints discussion. This activity involved a short overview of how thoughts can influence moods and a discussion about techniques and practices for viewing intrusive thoughts in a different way.

Facilitation of the Mindfulness Based Cognitive Therapy Program

The MBCT program was originally created as a class-driven modality and designed as an eight-week program with specific guidelines for each session (Segal et al., 2002). For the present study, each session followed the MBCT manual (Segal et al., 2002), with the exception of the previously mentioned modifications. I facilitated all the sessions with the collaboration of my research assistant/group co-facilitator, a colleague who was also in her second, and final, year of the MA Counselling Psychology degree program. As a result of our graduate training, we both have a solid range of clinical

experience that includes facilitating groups. In accordance with Segal and colleagues' recommendations, we both maintained a practice of personal mindfulness. I had experience in the delivery of MBCT and other cognitive-behavioral and mindfulness interventions in a group setting, as well as 3 years of regular mindfulness meditation practice. Dr. Susan Tasker, PhD, CCC, was our primary supervisor for the duration of the group.

Research Measures and Strategies

Demographic Questionnaire

The demographic questionnaire (Appendix K) designed for my study included traditional demographic questions (e.g., relationship status, education, income) and pregnancy-specific questions (e.g., trimester, number of pregnancy) items. The questionnaire was comprised of check boxes and fill-in-the-blank items and took about 7 minutes to complete. I designed the Demographic questionnaire, paying particular attention to variables that I considered interesting or potentially relevant.

Quantitative Measures

Quantitative measures included instruments that have been employed in previous studies and I designed the WC-DM scale specifically for my study. All the instruments that were employed are "paper-and-pencil" tests involving rating scales, check box items, and survey questions about participants' experiences, behaviour, or attitudes. The advantages of these self-report methods are that they are easy to administer and interpret. The key disadvantage of self-reporting methods is that they are susceptible to distortion by participants who may exaggerate or minimize their answers in an attempt to meet the approval of the researcher/questioner; this effect is known as the social desirability bias.

Participants were assured of confidentiality, which decreases the likelihood of the social desirability bias from occurring. Another problem with self-reporting is one of language literacy. Because the participants in the present study were required to have proficient spoken and written English, it was unlikely that their responses were skewed by literacy limitations.

At T1, participants completed a questionnaire package that included the Demographic Questionnaire, the HADS, and WC-DM. The HADS and the WC-DM were administered once again at T2. The ORS and the GSRS were administered before and after each session.

Hospital Anxiety and Depression Scale. The HADS (Zigmond & Snaith, 1983) is a popular clinical and research self-assessment tool designed to assess the dimensions of anxiety and depression among non-psychiatric populations (Herrmann, 1997; Zigmond & Snaith, 1983). It is important to note that the most widely used measure of prenatal and postnatal depression is the EPDS (Cox et al., 1987). Researchers have observed that the EPDS is also a measure of anxiety (Brouwers, Van Baar, & Pop, 2001; Ross, Gilbert Evans, Sellers, & Romach, 2003). However, there are only 3 items out of 10 on the EPDS scale that specifically examine anxiety. For this reason, I chose to use the HADS for my study. The HADS is an easily administered 14-item measure consisting of two subscales, anxiety (HADA) and depression (HADD), which have 7 items each. Items are scored on a 4-point Likert scale with higher scores representing higher distress. Total scores for anxiety or depression are considered as *normal* (0–7), *borderline caseness* (8– 10), and *probable caseness* (11–21) (Zigmond & Snaith, 1983). Zigmond and Snaith (1983)

advocate the use of the anxiety and depression sub-scale scores as more accurate clinical indicators than a total HADS score.

Because the HADS was originally designed to measure depression and anxiety in hospitalized patients with physical health problems, it specifically excludes symptoms that might arise from the somatic aspects of illness such as insomnia and fatigue (Zigmond & Snaith, 1983). Between 66% and 94% of pregnant women report sleep disturbances as a result of the major physiological and psychological changes associated with pregnancy (Schweiger, 1972; Suzuki, Dennerstein, Greenwood, Armstrong, Satohisa, 1994). Consequently, fatigue is a common complaint during pregnancy (Chien & Ko, 2004). This increases the suitability of the HADS for evaluating depression and anxiety in pregnant women.

The HADS has demonstrated strong sensitivity and specificity for depression and anxiety and is an efficient, useful means of measuring severity with strong reported validity and reliability (Zigmond & Snaith, 1983). Spearman correlations of the subscale scores and psychiatric ratings suggest that the subscales are adequate measures of symptom severity (for depression, r=0.70, p< 0.001; for anxiety, r=0.74, p<0.001; Zigmond & Snaith, 1983). Moorey, Greer, Watson, and Gorman (1991) reported positively on the validity of the scale as a measure of two independent factors and Bjelland, Dahl, Haug, and Neckelmann (2002) reported that the two sub-scales had a high degree of internal consistency (anxiety=-0.68–0.93, depression=-0.67–0.90). Test-retest reliability, which was established within a healthy sample, indicated correlations of 0.89 for the anxiety scale and 0.92 for the depression scale.

The HADS has been used for screening purposes in a diverse and broad range of clinical groups (Bjelland et al., 2002; Herrmann, 1997; Johnston, Pollard & Hennessey, 2000). Most important to the relevance of the present study is its established use in assessing levels of anxiety and depression in pregnant women (e.g., Cederholm, Sjoden, & Axelsson, 2001; Jomeen & Martin, 2004; Prettyman, Cordle & Cook; 1993; Pritchard, 1994; Rowsell, Jongman, Kilby, Kirchmeier & Orford, 2001; Thapar & Thapar, 1992).

I chose to use the HADS in the present study because it is a brief questionnaire which considers depressive and anxious symptomology; its psychometric properties are well-documented and adequate; it is concise, thorough, and appears to have good face validity; and it has been used in a variety of studies to assess anxiety and depression in pregnant women.

Worry about and Coping with Difficult Moods Scale. The WC-DM is a 6-item scale that includes one yes or no question, two Likert-scale questions, and two open-ended questions (Appendix D). This scale was designed specifically for my study to subjectively assess participants' anticipatory worry about *difficult postpartum mood* and their perceived confidence in their ability to cope with *difficult postpartum mood*. The scale consists of two subscales: Worry about Difficult Moods (W-DM) and Coping with Difficult Moods (C-DM).

The first five questions are a part of the W-DM subscale and they assess worry about *difficult postpartum mood*. The first question asks "Are you worried about experiencing difficult moods (e.g. feeling worried, nervous, sad, down, or overwhelmed) after the birth of your baby?"). The second question asks participants to elaborate on the first answer. The next question asks participants to rate the level or degree of worry on a

Likert scale ranging from 1 (very little) to 5 (almost overwhelming) and is followed by a fourth question asking participants to explain their rating – for example, why they rated their worry as a 2 and not a 1 or a 3.

The last two questions assess participants' perceived anticipatory confidence in their ability to cope with *difficult postpartum mood* and are a part of the C-DM. Question 5 is a Likert scale question assessing participants' perceptions of how confident they are in their anticipated ability to cope with *difficult mood* following the birth of their infant. The response options range from 1(very little) to 5(very). The last question asks participants to explain their rating, as described above.

The Outcome Rating Scale. The ORS (Miller & Duncan, 2004) is a brief 4-item visual analogue self-report measure designed to monitor clients on a session-by session basis and to assess areas of life functioning known to change as a result of therapeutic intervention (Bringhurst, Watson, Miller, & Duncan, 2006; Duncan, 2010; Miller & Duncan, 2004; Miller & Duncan, 2004). In general clinical practice, the ORS allows practitioners to predict the value of therapy and the value of ongoing therapy with the same therapist (Saggese, 2005). The flexibility of this measure lends itself well to the research setting and allowed me to identify when participants did not respond to the intervention and to discuss this with participants during the next session's check-in; adjustments were made if appropriate or required. For each item on the 4-item ORS, participants were instructed to place a mark on an unmarked 10-cm line. Marks closer to the left end indicate more difficulties in the particular domain, while marks closer to the right end depict fewer difficulties. The instructions to respondents on the ORS scale are as follows: "Looking back over the last week including today, help us understand how you have been feeling by

rating how well you have been doing in the following areas of your life, where marks to the left represent low levels and marks to the right indicate high levels" (Miller & Duncan, 2004). The ORS items focus on three areas of functioning by asking participants how they felt in the last week *individually* (personal wellbeing), *interpersonally* (family, close relationships) and *socially* (work, school, friendships). The fourth item requires participants to generally evaluate their overall daily functioning over the last week. Each item is scored by simply measuring the marks made by participants to the nearest millimeter on each of the four lines. A composite Total Score is computed for each week by summing across the four subscales. Given that 10 is the highest possible score on each line and that 40 is the highest total possible score, any score lower than clinical cut-off of 6.25 or 25 respectively, could be a source of concern (Duncan et al., 2003). Miller and Duncan (2004) state that scores below the cut-off indicate that clients respond to the item more like people who are in therapy and are saying they would like some aspect of their life to be different. Scores above the cut-off indicate that participants have responded to the items more like people who are not in therapy and who are saying that things in their life are on track and that little change needs to take place.

Past research has demonstrated that the ORS has good psychometric properties Bringhurst et al., 2006; Campbell & Hemsley, 2009; Miller, Duncan, Brown, Sparks, & Claud, 2003). Miller's group assessed the validity, reliability, and compliance rate of the ORS using non-clinical (n=86) and clinical samples (n=435). Their results showed a high degree of internal validity (a=0.93), moderate test–retest reliability (a=0.66), and a relatively high compliance rate (89%). Campbell and Hemsley (2009) also evaluated the validity and reliability of the ORS and found moderate to strong correlations between the

four ORS items (r=0.58–0.97); a particularly strong correlation was found between "Overall" and ''Individually'' (r=0.97, p=5.01) subscales. The reliability coefficient for the ORS (a=0.90) was particularly impressive given the small number of items in each scale.

I selected the ORS for my study because it provides real time feedback on the progress of participants' functioning and because of its functional and ethical utility (i.e., it allowed me to keep in touch with participant's responses to each session and, for the purposes of my study, to keep track on safety). I was also impressed by the brevity, simple content structure, and scoring procedure of the ORS, in addition to its documented reliability and validity. The ORS is designed to assess distress and help measure progress of the client's areas of life-functioning distress. When used in a group setting, it provides session-by-session trajectories to let facilitators know at a given session if participants are improving (i.e., increase in scores) in individual, interpersonal, social, and overall wellbeing or if participants are at risk (i.e., decrease in scores) of negative outcome as a result of therapeutic intervention (Miller & Duncan, 2004).

To remind the reader, my operational definition of safety is (a) the absence lack of harm or damage to, or deterioration in of the participants' levels of functioning as a result of the participation in this intervention as demonstrated by no significant decreases in individual, interpersonal, social, and overall wellbeing session to session or from Session 1 to Session 8; and (b) the absence of harm or damage to the wellbeing of participants' pregnancies (e.g., spotting, undue escalation in Braxton-Hicks contractions). To closely monitor safety session by session, I assessed ORS subscale and total scores from session to session for striking decreases potentially suggesting deterioration in participants'

wellbeing. Decreases in ORS scores would raise questions about the safety of the program, and scores above the cut-off would suggest the program's acceptability. (To monitor my second criterion for safety, I closely monitored participants' physical wellbeing by checking in with them each week and asking them to report any physical side-effects or concerns to me.)

I also used the ORS to evaluate effectiveness of the intervention. To evaluate effectiveness I assessed ORS subscales and total scores from session to session and from Session 1 to Session 8 for increases potentially suggesting improvement in clients' wellbeing.

The Group Session Rating Scale. The GSRS (Duncan & Miller, 2006) is adapted from the Session Rating Scale (SRS), which was designed for session-by-session monitoring of the therapeutic alliance during therapy (Bringhurst et al., 2006; Duncan, 2010; Miller & Duncan, 2004; Miller et al., 2003). SRS scale was designed to reflect the classical definition of the therapeutic alliance (i.e., agreement on goals, agreement on tasks in therapy & emotional bond; Bordin, 1979). GSRS was specifically adapted by the designers of the SRS to monitor therapeutic alliance in groups on a session-by session basis. The psychometric properties of the SRS have been examined and reported for both clinical and non-clinical samples (Duncan & Miller, 2006; Miller & Duncan, 2004; Miller et al., 2003). Duncan & Miller (2006) assessed internal consistency by calculating Cronbach's coefficient alpha of 0.88 (N=420). A report by Campbell & Hemsley (2009) suggests that the SRS demonstrates good reliability (a=0.93) and strong inter-item correlations (r=0.74 –0.86, p<0.01). Further, Duncan and Miller (2006) also demonstrated

that the SRS possesses moderate stability as reflected by the test-retest coefficients. The test-retest reliability demonstrates positive results (r=0.64).

The GSRS consists of four items. For each item, participants are instructed to place a mark on an unmarked 10-cm visual analogue scale. Marks closer to the left indicate negative responses to the session and marks closer to the right indicate positive responses. The GSRS items focus on three main elements of the therapeutic alliance: *the relationship* (on a continuum from "I did not feel heard, understood, and respected" to "I did feel heard, understood, and respected"); *goals and topics* (on a continuum from "We did not work on or talk about what I wanted to work on and talk about" to "We did work on or talk about what I wanted to work on and talk about") and the *approach or method used* (on a continuum from "The therapist's approach is not a good fit for me" to "The therapist's approach is a good fit for me"). The fourth item requires participants to generally evaluate the intervention session (on a continuum from "There was something missing in group today—I did not feel like a part of the group." to "Overall, today's group was right for me—I felt like a part of the group"). Each item is scored by simply measuring the marks made by participants to the nearest millimeter on each of the four lines. The Composite Total Score is scored by measuring all of the marks made by participants to the nearest centimeter on each of the four lines and summing them up. Given that 10 is the highest possible score on each line and that 40 is the highest total possible score, any score lower than 9 or 36 respectively could be a source of concern, in which case, and in the case of clinical work, the therapist should invite the client to comment (Miller & Duncan, 2004).

Using the GSRS, participants are also encouraged to identify any concerns that

they have about therapeutic alliance for each session. In addition to using the GSRS to assess session-by-session satisfaction, I thought it would be important and helpful to use the scale's data to guide session-by-session facilitation to tailor the MBCT program to pregnant women and to inform facilitation on a session-by-session basis.

It is important to remind the reader that MBCT is considered a mainly skill-based, and on a small scale, therapeutic group; because the GSRS scale was designed to reflect the classical definition of the therapeutic alliance in *psychotherapy* groups it is important to justify the use of the GSRS to assess session-by-session satisfaction of MBCT which was designed as a therapeutic and not therapy group. By definition, the term *therapeutic* means that which imparts ameliorative, salutary, remedial, and generally good benefits; outcomes that are not harmful, damaging, or "untherapeutic."

Because the GSRS assesses overall fit or therapeutic alliance of the program for participants as a function of for example, participants' perceptions of and satisfaction with the group's and facilitator's respect and understanding, the relevance of each session's goals and topics, and the approaches and methods adopted in each group session, I considered the use of the GSRS to be entirely appropriate for my purposes in assessing the acceptability of my slightly modified MBCT program for my study. Furthermore, Howard and colleagues (1996) argued that measures of participant's experience of the therapeutic alliance can be used to determine the appropriateness of the interventions. And Bowen and Kurz (2012) found that the overall fit or therapeutic alliance of mindfulness based treatments predicted the benefit of the program for participants.

Overall, I was sure that acceptability of the program would require buy-in from

my participants. It seemed to me that one way of assessing buy-in was to monitor how satisfied my participants were with the *goals and topics* of each session. Indeed, Bordin (1979) argued that agreement upon therapy *goals and topics* may be necessary for the client to adopt the intervention rationale. Similarly, Horvath and Luborsky (1993) argued that agreement on *approach or method used* to achieve these goals is important (Horvath & Luborsky, 1993). As such, I thought that my participants agreement on central and mainstay teaching topics and goals of the MBCT program (i.e., to teach mindfulness to participants and for participants to practice mindfulness in the group setting and at home), and *how* these were approached and accomplished in each session, would be of particular importance to assessing acceptability of the program for this population. Thus, I used the GSRS to assess participant's session-by-session satisfaction with the MBCT intervention and with the group dynamic: in sum, that the content and interactive nature of the group was positive, respectful, accepting, and on topic for participants' purposes in attending the group.

As mentioned above, the GSRS was developed in 2007 by the creators of the SRS to assess the therapeutic group alliance. To the best of my knowledge, published evidence of the GSRSs reliability and validity are not yet available. This is likely because of its novelty. In 2010, Miller presented preliminary favorable findings on the reliability and validity of the GSRS at the Achieving Clinical Excellence Conference (Miller, 2010). However the results have not yet been published. However, a paper on the psychometric properties of the GSRS has recently been submitted to the Counselling and Psychotherapy Research Journal (Quirk, Miller, Duncan, & Owen, under review). Quirk and colleagues examined whether the GSRS is related to other commonly used measures of group

processes such as the Working Alliance Inventory, Group Cohesion, Group Climate and Early Change (change over the first four sessions of group therapy). They examined 105 clients in five group therapies. Their results suggest that therapists who lead group therapy can use the GSRS to gather information about alliances and alliance outcomes in a clinically useful and efficient manner. The researchers found that the GSRS correlated with early change and was related to other group process measures. Their findings also provide support for the GSRS reliability indicated by the Cronbach alphas and the test-retest coefficients. This study provides initial support that the GSRS is an ultra-brief measure of how each group member feels about group processes. Although this study has not yet been published, it provides promising evidence of the validity, reliability, and feasibility of the SRS that is relevant to the GSRS; and certainly supports my decision to incorporate it as a measure of acceptability of the MBCT group program.

The GSRS is brief, easy to administer and calculate, and has an essential component of content simplicity. All of these qualities make it feasible to use on a session-by-session basis in order to enhance client and research-participant care. The GSRS is an example of a scale that allows for an ethical approach to evaluating a new program with a clinical population because it facilitates the gathering and dissemination of participant feedback as well as enabling facilitators to systematically monitor their work on an ongoing basis in order to ensure that it continually reflects the needs of the participants (Saggese, 2005). This is particularly important given the exploratory nature of this research.

Qualitative Methods

Qualitative data were collected through a focus group one week following the last MBCT and used to differentially assess the safety, acceptability, and effectiveness of the MBCT for pregnant women. I also recorded and maintained field notes directly following each MBCT session and immediately following the focus group. My research assistant/group co-facilitator also recorded field notes during each MBCT group and after the focus group. Field notes included anecdotal reports or observations of instances related to feasibility and safety most particularly, but also included those related to acceptability and effectiveness. I kept session-by-session field notes of any anecdotal comments or requests made by participants that were relevant to the study. Each activity completed during group sessions was followed by the question "How did you find this exercise?" This gave participants an opportunity to provide the research team with immediate feedback on manageability (acceptability and physical feasibility) and safety (as operationally defined for my study) of the exercise. Finally, qualitative data was gathered through comments and explanations participants provided on the WC-DM.

Focus Group. Focus groups are one of the most broadly used techniques in qualitative research (Sim, 1998). A focus group is an informal and non-directive group discussion in which participants are asked about their perceptions, opinions, beliefs, and attitudes in regard to a specific topic (e.g., product, service, concept, idea, experience). Focus groups often consist of 8 to12 participants, although some are smaller and consist of 4 to 6 participants (Strong, Ashton, Chant, & Cramond, 1994). Focus groups are facilitated by a facilitator, who is often assisted by a co-researcher (Sim, 1998).

Coenen, Stamm, Stucki, and Cieza (2012) recommended conducting focus groups if the objective of a study is to comprehensively explore participants' perspectives. The

focus group information gathering technique is based on an informal discussion among participants about a topic selected by the researcher (Acocella, 2012; Sim, 1998). The data emerging from a focus group reflect the common experiences of the participants involved in the group (Stewart & Shamdasani, 1990).

Focus groups have a number of advantages over interviews and questionnaires. The main advantage is that their cost is fairly low in comparison to interviews. They are fairly easy to organize and talking with several participants at once increases the sample size, provides sufficiently detailed information in a short amount of time, and generates results relatively quickly (Bertrand, Brown, & Ward, 1992). Group interviews are often a very effective venue for feedback (LeCroy & Daley, 2005, p.105). Kitzinger (1995) suggested that group processes help people to explore and clarify their views in ways that that would be less likely to occur in a one-to-one interview or while filling out a questionnaire (Kitzinger, 1995). Sim (1998) suggested that group interaction enriches the information that is generated during a focus group and prompts a rich understanding of people's experiences. For example, Butler (1996) suggests that participants' statements in focus groups can motivate other participants to share similar experiences or problems, which does not occur in alternative methods of data collection. Powell, Single, and Lloyd (1996) suggested that the non-directive nature of focus groups gives participants many opportunities to comment, explain, disagree, and share experiences and attitudes. Further, focus groups have a more relaxed atmosphere than interviews or questionnaires because participants do not expect to and are not expected to answer every question (Vaughn, Schumm, & Sinagub, 1996). Basch (1987) pointed out that this relaxed atmosphere can create a setting in which participants discuss sensitive topics frequently, openly, and

truthfully; other qualitative methods cannot replicate this process. I selected the focus group data collection strategy for all of these reasons, particularly because it allows for interaction among participants and maximizes the collection of high quality information in a short time period.

Focus group procedures. Sim (1998) suggested that when researchers are collecting data via focus group they need to record not only what participants say, but also how they interact with one another; attribute quotations accurately to individual group members; ensure that the process of data collection does not interfere with or detract from the facilitation of the group; and ensure that the method of recording data does not have reactive effects upon the group participants. Following Sim's guidelines on how to preserve the nature and quality of the data collected, I informed the group that I considered them experts in the subject of the research because they all attended at least five out of eight MBCT sessions and that I was interested to learn about their experience of MBCT from them. I informed focus group participants that they should develop discussions among themselves and that the facilitators (me and my research assistant/group co-facilitator for the MBCT groups) would intervene at the minimum. My research assistant/group co-facilitator and I adopted relatively passive roles as much as possible and allowed group discussions to be led primarily by the group participants. This ensured that dialogue occurred among the group members, rather than between them and the facilitators.

This approach that we brought to our roles and those of the participants in the focus group is also consistent with Acocella's (2012) caution to distinguish the focus group from group interviews inasmuch as focus groups use group interaction to acquire

data. She warned against asking questions of each person in turn and urged researchers to encourage focus group participants to talk to one another: to ask questions, exchange anecdotes, and comment on each others' experiences and points of view. Furthermore Acocella (2012) argued that questions focused on collecting data about individual experiences cannot stimulate interaction among participants. Rather, they encourage each member to interact solely with the moderator and to report on his or her private experience. Such data do not emerge from a discussion of different perspectives and do not represent group themes.

In order to assure the spontaneous production of ideas, we informed participants that they were not expected to comment on or participate in every single aspect of the group discussion. To initiate the focus group conversation, I proposed the discussion topic by saying: "I am interested to hear about your experience of the MBCT Momfulness group. What was your experience in the group?" and waited for the participants to generate a discussion – express their ideas, comment on each other's ideas, express agreement or disagreement, and provide examples. As the session was semi-structured, the participants were able speak about many of the topics without being prompted to do so. When there was a significant and clear lull in the discussion, I provided a prompt such as "Can you tell more about this?" or "Did anyone else have similar reaction? Did anyone had a different reaction?" to reignite the flow of conversation among participants. Questions from the Finucane and Mercer (2006) study were adopted as prompts. The focus group prompts that were used to gather the information necessary to answer the research questions are as follows:

1. What was your experience in the group?

2. In general what did you think of the overall approach?
3. What aspects of the program did you find beneficial?
4. What aspects of the course did you find difficult/ unhelpful?
5. What did you think about the length of the course?
6. Are there any techniques you continue to use?
7. Do you feel better able to cope with adversity than before you started the course?

The focus group was audio and video recorded for subsequent transcription and thematic analysis. One Zoom H2 Ultra-Portable Digital Audio Recorder was used for audio recording and a Flip UltraHD Video Camera was used for video recording; the camera was positioned so that all the focus group participants were visible on the screen. This enhanced accuracy and the ease of transcription. The focus group was transcribed verbatim from the slowed-down audio-recording using the AudioSpeed Program and then checked against the audiovisual recording. That is, video footage was used to confirm or clarify the identity of the speaker during transcription. To protect participants' confidentiality, I removed all names from the transcript.

Focus group transcription. The focus group was transcribed in its entirety using the audio and video recordings. Video recording was important for capturing nonverbal communication. The written account of what was *said* in the focus group is as close to verbatim as possible. To that end, I used strategies suggested by Poland (1995) for maximizing transcription quality. During the transcription process I revisited the field notes I had made after the focus group. This was done to ensure that the transcripts captured participants' utterances as closely as possible when they were video and audio

recorded. During the transcription process I noted emotional nuances such as volume, the intonation of voices, pauses, sighs, laughter, and emphasis as much as possible. For example, Participant 5 said, “Can I tell you it’s a little weird to start without a check-in. I’m like so how are you guys?” This example highlights how pitch and/or amplitude can stress a point. Another example is the following quote from Participant 3: “I’ve got ENOUGH TO WORRY ABOUT.” In this example capital letters in the middle of the sentence indicate especially loud sounds relative to the surrounding talk and indicate that the participant is very worried.

For the purpose of the thematic analysis, the transcript was not edited or tidied up to make individual statements, trains of spoken thoughts, reflections, or comments sound better grammatically or otherwise. I completed the first transcript using a slowed down audio recording 2 days following the focus group. Two days after completing the transcript, I watched the video recording and reviewed the transcript for accuracy. Because transcription is considered an interpretive activity (Lapadat & Lindsay, 1999), my research assistant/group co-facilitator reread and visually tracked the transcript while simultaneously watching and listening to the audiovisual recording focus group. She subsequently made a few adjustments to the transcripts, which we discussed and which I re-checked and agreed with. These adjustments were either misspelled words or words accidentally omitted when I performed my transcription. Finally, I re-read it and deleted sections of text that were unrelated to or off topic from the research questions, or sections of text that included peripheral small talk such as somebody asking for a glass of water. Thereafter, I did not edit or tidy any individual statements and only checked that the omitted sections did not considerably affect the interpretation of the text.

Field notes. Field notes are personal written accounts of what a researcher hears, sees, experiences, and thinks in the course of a qualitative study (Bogdan & Biklen, 2003). Bogdan and Biklen (2003) argued that the meaning and context of interviews are captured more completely if they are supplemented by written descriptive field notes. Morrow (2005) argues that field notes based on observations in the field are essential to exploring and expressing the subject matter of the study. Rossman and Rallis (2003) encouraged the use of providing in-depth description and elaborate details in the field notes in order to enhance future analysis.

Following Morrow's (2005) and Rossman and Rallis' (2003) recommendation, both my research assistant/group co-facilitator and I recorded field notes after each MBCT session. An hour was set aside for this task. We kept field notes over the course of the 8-week period during which the study was conducted and regularly reviewed the field notes between sessions. We made a focused effort to provide rich and nuanced details about participants' demeanor, comfort level, physical movements, and perceived stress levels, as well as any stumbling blocks that participants encountered. We also used our field notes to track and account for possible contextual influences, to provide reasons for absences, to make anecdotal notes, and to make practical observations for counselling.

As described earlier, after each session, I and my research assistant/group co-facilitator engaged in a 10-15 minute debriefing session. We made it our weekly practice to write descriptive, reflective field notes, as described by Bogdan and Biklen (2003). In my field notes, I included a short summary of our debriefing session; descriptive and objective details of the session (e.g., descriptions of conversations and themes that occurred in the session and requests for program adjustments); and my concerns,

thoughts, hunches, feelings, or ideas at the time (e.g., wondering why participants were becoming restless after a 25-minute body scan meditation or feeling that the arrival of a new, very outspoken group member in Session 2 had an influence on the pre-existing group dynamics).

Data Analysis

Quantitative Analyses

All data were entered twice and thoroughly checked to ensure accuracy. Descriptive statistics such as means, standard deviations and proportions were used to describe participants' characteristics (Table 1). It was not possible to perform Chi-square test analyses assessing the relationships between the categorical demographic variables of the sample (e.g., sex, ethnicity, relationship status, employment status) due to the small cell sizes (N=5). Pearson correlations were conducted to examine if there were any significant relations between the continuous demographic and dependent variables within the full sample (N=5).

The HADS, WC-DM, ORS, and GSRS questionnaire data were assessed using descriptive, within-group correlations and pre/post intervention paired t-test statistics. Given that the study is exploratory, analyses were two-tailed and performed at $p<0.05$. All statistical analyses were performed using the SPSS version 10 statistical software package. To assess measurable within-group change as a function of the MBCT intervention, I conducted two-tailed paired t-tests to T1 and T2 anxiety and depression (HADS) as well as worry about *difficult postpartum mood* and coping with *difficult postpartum mood* (WC-DM) scores. In the case of the ORS and GSRS, to assess change from session to session and from Session 1 to Session 2, I conducted two-tailed paired *t*-test analyses for each of

the subscales for the ORS (Individual, Interpersonal, Social Wellbeing and Overall Wellbeing) and GSRS (Relationship, Goals and Topics, Approach and Methods, Overall Session Experience), and for a composite Total Score computed for each scale by summing across the subscales (e.g., ORS Total Score reflects the sum of scores on the Individual, Interpersonal, Social Wellbeing, and Overall Wellbeing subscales).

To closely monitor safety session by session, I assessed both ORS subscale and Total Scores from session to session for striking decreases in scores indicating deterioration in participants' individual, interpersonal, social, and overall wellbeing and potentially suggesting that the session is unsafe for these participants. I considered a striking decrease to be a drop in score to below the cut-offs suggested by Duncan and colleagues (2003). As a reminder to the reader, visual analogue scale scores for the subscales range from 0 to 10; higher scores reflecting increasingly positive outcomes. Duncan and colleagues (2003) established a total score on the ORS of 25 as a clinical cut-off. By extension, I considered a score of 6.25 (25/4) or less on any one of the four ORS subscales to indicate a red-flag.

To monitor acceptability session by session, I assessed GSRS subscale and total scores from session to session and noted if the scores dropped below the clinical cut-off suggesting unacceptability of the session. For the GSRS, Miller and Duncan (2004) suggested any score lower than 9 on a subscale or a total score of less than 36 as a source of concern for clinical work, and that the therapist should invite the client to comment on their experience with the session(Miller & Duncan, 2004).

Given the limitation of the study's small sample size and the sample's insufficient power, I implemented Cohen's *d* as a way to assess the magnitude and clinical or practical

significance of the differences between the T1 and T2 means in terms of effect sizes (*ES*). Durlak (2009) states that reporting the effect size for all outcomes is becoming a common "good research" practice in the peer-reviewed psychology literature. Durlak (2009) suggests that researchers should report ESs for all outcomes regardless of their *p*-values, especially when reporting on studies that use small sample sizes. Findings that are significant are not always noteworthy in a practical sense, especially when a small sample is used to gather data. The use of the ES in result interpretation highlights the distinction between statistical and practical significance. In addition ES emphasizes how much of the dependent variable can be controlled, predicted, or explained by the independent variables.

Furthermore, in studies with small sample sizes like this one, the addition of data from a single participant can shift the *p* level from above 0.05 to below 0.05 without any change in the ES. For example, Snyder and Lawson (1993) demonstrated that in studies with small sample sizes and a magnitude of effect as large as a d=.66, the addition of data from a single subject changed results from non-significant (p>0.05) to significant (p<0.05) without any change in the ES.

Cohen's *d* is one of the most commonly used measures of effect size or clinical significance when sample sizes are small because it is independent of sample size (Cohen, 1988). Given the limitation of small sample size and a relatively low level of power, I implemented Cohen's *d* as a way to assess the magnitude and clinical or practical significance of the differences between the T1 and T2 means in terms of effect sizes (*ES*). Cohen's *d* is calculated by dividing the difference between the two means by the common or pooled standard deviation for the data. In the case of paired t-tests, the original standard

deviations of the T1 and T2 means are used to compute *d* (Becker, 2000). Effect sizes are considered small where *d*=0.2, medium where *d*=0.5, and large where *d*=0.8 (Cohen, 1988). Bezeau and Graves (2001) contend that a large effect size (*d*=0.8) is a reliable indicator of an effect that truly exists in a population.

One participant joined the group in Session 2. She had completed all T1 questionnaires before her first session. Because paired t-tests cannot be computed with unequal sample sizes and given the small sample size, I used the mean of the other 4 participants' Session 1 scores on the ORS and GSRS for this participant.

Qualitative Analysis

Qualitative data were subjected to thematic analysis. The coding procedure for thematic analysis uses either a *theoretical/deductive* or an *inductive* approach. A *theoretical* thematic analysis is driven by the researcher's theoretical or analytic interest in the area, allowing the researcher to therefore code for a specific research question. For example using a theoretical approach, I was interested in themes of safety, acceptability, and effectiveness of the MBCT program for pregnant women with a history of *difficult postpartum mood*. *Inductive* analysis is a data-driven process which does not try to fit data into a pre-existing coding frame or the researcher's analytic preconceptions. With an inductive approach a researcher reads and re-reads the data for any emerging themes. For example, I used an inductive approach to examine the data within theoretically-derived themes of *Safety, Acceptability,* and *Effectiveness* to identify any subthemes. I also looked inductively at any data not fitting into any of these three theoretically-derived themes but which might be important and relevant to the intent of the study. For this purpose I reread the amassed collection of individual quotes and their assigned codes to see where overlaps

or redundancy in my coding existed, and discussed and corrected for these by refining codes to isolate and identify succinct and coherent subthemes.

Regardless of deductive or inductive approaches to thematic analysis of data, currently there is no standard as to the ratio of participants who must endorse a particular theme in order for "themeness" to be considered as meaningful and trustworthy. However, Braun and Clarke (2006) suggest that an endorsement rate of 60% is the minimum for a theme to be deemed trustworthy. Accordingly, I used an endorsement rate of 60% as the criterion for my study.

I thematically analyzed focus group transcripts to explore the qualitative data sufficient to add to and integrate with quantitative findings; that is, I was interested in looking at the "total evidence" (Klassen et al., 2012) brought to bear on the research questions. I used Bogdan and Biklen's (2003) method to reduce and code our field notes and audited focus group transcription. Specifically, my research assistant/group co-facilitator and I read and recursively divided the interview data into small, meaningful segments. We then engaged in three separate and mutually exclusive rounds of thematic analysis. First, we used a theoretical framework to read and code the small, meaningful segments individually and grouped these segments within themes of *Safety, Acceptability,* and *Effectiveness*; and then reread the amassed collection of individual quotes and their assigned codes to see where overlaps or redundancy in our coding existed, and discussed and corrected for these by refining codes. Next, we used an inductive approach to examine the data within each of these three theoretical themes to identify any subthemes. Finally, we looked inductively at any data not fitting into any of

the three theoretically-derived themes but which might be important and relevant to the intent of the study.[2]

By way of summary and greater explanation of how we proceeded during these three rounds of thematic analysis, I note the following. Through a recursive reading and coding process, we eventually arrived and agreed on a collective of codes and representative quotes. We collapsed codes into groups of patterns of what we considered described and expanded on (a) the three a priori theoretical themes (safety, acceptability, effectiveness); (b) subthemes existing within each of the three a priori theoretical themes; and (c) themes emerging outside of the theoretically imposed themes (of which there were none). Next, we reread the individual quotes for each theme and tentative subtheme, asking ourselves two questions for each quote: Does this quote represent or "hang with" this theme in an obvious way? Does this quote mostly only belong to this theme and not also to another theme? Themes were identified if at least 3 of the 5 participants (i.e., 60%) provided a quote that spoke directly to the theme being considered. The number of supporting comments for each representative quote was also recorded. Participants were considered to support a representative quote sourced from the focus group if, at the time, they had commented or responded directly to the speaker of the quote or if they had provided even a short supportive comment such as "Yes," "Aha," or "That's for sure!" Endorsement of each theme was calculated by summing the number of participants who either directly endorsed the theme or indirectly endorsed the theme as we inferred from their supporting of others' statements. For example, if three participants made comments about the group's name, "Momfulness", such as, "I think

[2] No themes were found to exist outside of the 3 deductively sourced themes (Safety, Acceptability, and Effectiveness) and their inductively arrived at subthemes.

the title Momfulness drew me in." "It said everything for me." "I wanted to be a part of this Momfulness," and two participants nodded their head and said "Yes!" and "True." then we concluded that the endorsement rate for this idea or theme of the naming of the group, was 100%.

To further increase coding reliability and thematic representativeness, I engaged in additional peer consultation with my thesis supervisor. Together, we discussed the completed coding, the content of themes, representative quotes, and labels for themes. After several discussions, we settled on the themes and I wrote concise sentences to summarize each theme (e.g.: Overall, the content of the Momfulness group reminded me to take care of myself.)

Following along from and closely related to establishing the reliability of themes identified, it is important to assess the validity or trustworthiness – or credibility – of themes identified.

Credibility. Anfara, Brown, and Mangione (2002) wrote that credibility may be heightened through prolonged engagement in the field, the use of peer debriefing or consultation, member checking, data triangulation, and time sampling. Creswell (1998) also suggests that field notes help researchers to establish the data's trustworthiness. I used peer debriefing or consulting, member checking, data triangulation, and field notes to assure credibility.

***Peer debriefing*.** Creswell (1998) suggested that peer debriefing provides an external check of the research process. He states that the peer is a person who keeps the researcher trustworthy and asks the hard questions. My research assistant/group co-facilitator and my master's thesis supervisor assumed this role; both of them generously

yet firmly helped me to think critically about any subjectivity on my behalf, and decisions I made in the field. They also questioned my analysis and interpretation of the data. I met immediately following each MBCT group session with my research assistant/group co-facilitator to have a 15 minutes debriefing session, and she kept field notes independent to mine of her observations and recordings of anecdotal comments and requests from participants. She was also involved in carefully and independently ensuring that the focus group transcription I had completed was transcribed as accurately as possible. I consulted both my research assistant/group co-facilitator and my master's thesis supervisor individually on the strength and suitability of the quotes I considered endorsed and spoke to the three theoretical themes of the study, and of the substance and strength of the subthemes that I inductively identified to be present within the theoretical themes. Initially, for example, I drew 9 subthemes from the data that I considered as part of the overarching theme of effectiveness; after discussion with my research assistant/group co-facilitator these were reduced to 7 subthemes and further reduced to 5 following discussion with my supervisor. The input, support, and feedback from both were critical to the research process and trustworthiness of my data and findings.

Member checking. Lincoln and Guba (1985) described member checking as the most crucial technique for enabling researchers to refine their interpretations and enhance creditability. Creswell and Miller (2000) argued that participants add credibility to the qualitative study by having a chance to react to the data. By way of a general explanation first, all themes derived from qualitative data (e.g., transcribed interview or focus group data) are identified and summarized into concise sentences and returned to the original participants for verification and confirmation. Participants are asked to read and comment

on the accuracy and relevance of the derived themes for themselves, and if they agree/support or disagree/do not support findings as representative of their experience and thoughts.

More specifically, I prepared and e-mailed a summary of statements representing the theoretical themes of acceptability and effectiveness and inductively established subthemes to participants. When I prepared the questions to go along with the summary of findings I was sending to participants for member checking, I was careful to phrase questions in such a way that participants would reflect on and speak separately to the cognitive content and interpersonal experience of being in the group generally. While I believe that these two aspects are distinct components of MBCT, they are certainly not mutually exclusive components.

The group format and setting of MBCT facilitates the learning and discussion of cognitive content, the exchanging of experiences and ideas, and receiving support from other participants, as well as "housing" the first learning and practicing of mindfulness as a learned skill. For example, it soon became clear to me that participants came to embrace their pregnancy as a direct result of the group experience, but it wasn't clear from the data whether this was through the content discussed with and perceived support they had received from the facilitators and other participants, or through the mindfulness skills first learned and practiced within the group. Therefore, I attempted to get at this distinction by asking participants to speak separately to these two components when providing feedback for member-checking purposes. For example, the subtheme of self-caring subsumed within the theme of Effectiveness was presented as two statements: (a)

Overall, the content of the Momfulness group reminded me to take care of myself, and; (b) Learning mindfulness skills has reminded me to take care of myself.

All five (100%) participants responded and completed the member-checking process.

Triangulation. As stated earlier, triangulation refers to the combination of several sources of data (e.g., focus group, questionnaires, clinical observations). Patton (1990) stated that data triangulation ensures that data are high quality, credible, accurate, and true to the phenomenon under study. In my study quantitative and qualitative data are triangulated and collected one after the other. My participants completed self-report quantitative measures and I collected three sources of qualitative data, namely: field note observations, focus group data, and comments and explanations participants provided on self-report questionnaires.

Field notes. Field notes help researchers to keep track of the study's development, promote reflexivity on the part of the researcher, and establish the data's trustworthiness. They can help researchers to identify personal biases, values, and experiences as they progress through the study (Creswell, 1998). For example, I noticed that I was particularly careful when I explained concepts of mindfulness to one participant who identified herself as Roman Catholic during the telephone pre-group discussion, and who expressed her worry about mindfulness interfering with her faith. Compared to other participants, I was more determined to make her feel comfortable first in the first group.

Bogdan and Biklen (2003) argue that reflective field notes capture researchers' reactions, ideas, hunches, impressions, feelings, and concerns. Bogdan and Biklen pointed out that qualitative research requires long-term contact with participants, which can

overwhelm researchers. Reflective field notes are one way of attempting to acknowledge, document, and control the effect of the research on the researcher. Essentially, researchers record their thoughts, feelings, and ideas in order to conduct a better study. In addition, descriptive field notes provide clues that help the researcher to make analytical sense out of what he or she is investigating (Bogdan & Biklen, 2003).

Findings from the thematic analyses are independently reported and linked with the study's findings in Chapter 3.

Chapter Summary

In this chapter I have detailed the mixed-methods methodology and quantitative and qualitative methods, research design and data collection and analytic strategies I brought to my study. First, I described the research methodology and methods I used, my participants, the recruitment process, and the research design method. Second, I outlined the MBCT intervention and the modifications I made to it for this study. Third, I presented the demographic questionnaire and the quantitative measures and qualitative strategies I used in my study. Lastly, I described the procedures for quantitative and qualitative data analyses. In the next chapter, I report the findings of the study. In keeping with the spirit and intent of mixed methods research, I have taken Creswell and Tashakkori's (2007) suggestion to incorporate and integrate qualitative data and quantitative "strands" such that one is embedded within the other (Klassen et al., 2012), in the reporting of my findings. Specifically, I report qualitative data fitting the theoretical framework together with the relevant quantitative data.

CHAPTER 3

FINDINGS

Chapter Introduction

As noted at the end of Chapter 2, Creswell and Tashakkori (2007) and Klaasen's group (2012) recommended that researchers incorporate and integrate quantitative and qualitative strands when they report findings from *mixed methods* research. In keeping with this suggestion, I will report quantitative and qualitative together.

Relations among Demographic Variables and Study Variables: Within-Subject Analyses

The reader is reminded that Pearson correlations were conducted to examine if there were any significant relations between the continuous demographic and dependent variables within the full sample (N=5). I did not find significant correlations between any of the demographic variables and the study (outcome) variables. Lack of significant correlations suggest that participants' age, ethnicity, relationship status, education, employment status, number of children, religion/spiritual orientation, trimester at the start of the group, pregnancy planning, mental illness history, and previous mindfulness experience did not influence the data collected on the HADS, WC-DM, GSRS, and ORS measures.

Safety

Research Question 1

Do pregnant women who previously experienced *difficult mood* (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant, consider

MBCT to be a safe program as assessed through ORS, through focus group conversation, field notes and other qualitatively collected data?

To remind the reader, for the purpose of my study safety is (a) the absence of harm or damage to, or deterioration in participants' levels of functioning as a result of the participation in this intervention as demonstrated by no significant decreases in individual, interpersonal, social, and overall wellbeing session to session or from Session 1 to Session 8; and (b) the absence of harm or damage to the wellbeing of participants' pregnancies (e.g., spotting, undue escalation in Braxton-Hicks contractions).

Overall, based on the data from ORS and field notes participants endorsed MBCT as a safe program for pregnant women with a history of *difficult postpartum mood*.

ORS Total Scores. The mean of all scores across eight weeks was 27.75 (*SD*=4.10; range=13.6-36.4), and above the clinical cut-off of 25 (Duncan et al., 2003). The only time that the ORS composite Total Score fell below the clinical cut-off of 25 was at Session 1 as measured before starting the MBCT program. (See Figure 2a.) No significant decreases were found Session 1 to Session 8 and session-to-session. Some individual participant's ORS composite Total Scores dropped below the clinical cut-off of 25; for Participant 2 in Session 3 (23), Participant 3 in Session 6 (24.1), Participant 4 in Session 8 (23.6), and Participant 5 in Session 4 (23.5).

ORS individual wellbeing subscale. As a group, participants' mean score across eight weeks was 7.27 (*SD*=1.14; range=3.2-10). As a group, there was no significant decrease in individual wellbeing from Session 1 to Session 8, and no significant session-to-session decreases were found. (See Table 2.) With the exception of Session 1, participants' scores as a group were never below the clinical cut-off of 6.25. Individually, ORS scores

on the individual wellbeing subscale dropped below the clinical cut-off of 6.25 for Participant 1 in Session 2 (4.9), Participant 2 in Session 3 (5.4), Participant 4 in Sessions 2 (6.1) and 6 (6.1) , and Participant 5 in Session 8 (6.2).

ORS interpersonal wellbeing subscale. The group mean across eight sessions was 6.78 (*SD*=1.56; range=3.7-9.4). Other than at Session 1, scores on the interpersonal wellbeing subscale were never below the clinical cut-off of 6.25 for the group. (See Figure 2c). As a group, no significant session-to-session or Session 1 to Session 8 decreases were found. (See Table 2.) Individually, ORS scores on the interpersonal wellbeing subscale dropped below the clinical cut-off of 6.25 for Participant 1 in Sessions 2 (4.6) and 5 (5), Participant 2 in Sessions 3 (6.1) and 6 (6.2), Participant 3 in Sessions 4 (4.7) and 6 (5.3), Participant 4 in Sessions 4 (5.9) and 8 (2.6), and Participant 5 in Session 4 (5.9).

ORS social wellbeing subscale. Across eight sessions, participants' mean social wellbeing score as a group was 6.71 (*SD*=1.32; range=2.6-9.5). As a group, participants' scores on the social wellbeing subscale were below the clinical cut-off of 6.25 at T1 but increased following the first session and remained above the clinical cut-off during participation in the program. (See Figure 2d). In addition, no significant session-to-session decreases were found for participants as a group. Individually, ORS scores on the social wellbeing subscale dropped below the clinical cut-off of 6.25 for Participant 1 in Session 2 (4.6) and Session 5 (4.7), Participant 2 in Session 3 (5.6), Participant 3 in Session 6 (3.8), and Participant 5 in Session (5).

ORS overall wellbeing subscale. The mean of scores across eight weeks was 6.99; (*SD*=1.15; range=3.3-9.6). With an exception of Session 1 where the mean score for the group fell below the clinical cut-off of 6.25 (see Figure 2e), group social wellbeing scores

were above the clinical cut-off of 6.25 for each session, and no significant decreases were found session-to-session or from Session 1 to Session 8. Individually, ORS scores on the overall wellbeing subscale dropped below the clinical cut-off of 6.25 for Participant 1 in Session 2 (4.6), Participant 2 in Session 3 (5.9), Participant 4 in Session 2 (5.6), Session 3 (6.1), Session 6 (5.5), and Session 8 (6), and Participant 5 in Session 4 (4.5).

Taken together, there were no significant decreases in session-to-session or Session 1 to Session 8 scores on any of the four subscales and ORS composite Total Scores, and other than Session1 scores prior to commencing participation in the MBCT program, no ORS subscale or composite Total scores were below clinical cut-off scores.

Given that my operational definition of safety is (a) the absence of harm or damage to, or deterioration in participants' levels of functioning as a result of the participation in this intervention as demonstrated by no significant decreases in individual, interpersonal, social, and overall wellbeing session to session or from Session 1 to Session 8; and (b) the absence of harm or damage to the wellbeing of participants' pregnancies (e.g., spotting, undue escalation in Braxton-Hicks contractions), my the quantitative findings suggest that MBCT is a safe program for pregnant women with a history of *difficult postpartum mood*. This finding is further supported by field note qualitative data.

Field Notes. Descriptive field notes were maintained throughout the study to facilitate the making of adjustments to the program. As described in Chapter Two, several adjustments and modifications to the program were made. For example, following Session 2 participants were instructed to lie on their side or sit instead of lying on their backs for some of the exercises to ensure their physiological safety, and in Session 3 the mindful movement component of the program was modified to accommodate the

physical limitations of pregnant women. I did not observe and no participants reported any adverse (i.e., potentially unsafe) incidents (e.g., a participant starting to bleed during or following a session; a participant becoming flooded with emotions during an exercise). All participants went on to deliver fullterm babies irrespective of what trimester they were in at the beginning of the program, and all deliveries were uncomplicated and considered normative.

Acceptability

Research Question 2

Do pregnant women who previously experienced *difficult mood* (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant, consider MBCT an acceptable program as assessed by the GSRS, through focus group conversation, field notes and other qualitatively collected data?

To remind the reader, for the purpose of this study, I defined acceptability as the ability of the program to satisfy participants' expectations from the program and satisfaction with the structure and facilitation of the group as demonstrated by positive evaluations of *the relationship* with facilitators and other participants in each session, *goals and topics* of each session, the *approach or method* used in each session, and overall satisfaction with each intervention session.

Based on the data from GSRS and the focus group participants found the MBCT program acceptable and enjoyable.

GSRS total scores. Program acceptability was highly supported by the quantitative GSRS data. Out of a possible top score of 40, the mean of all subscale scores across eight

sessions was 35.71 (*SD*=1.83; range=23.4-39.7). (See Figure 3a.) As a group, participants' GSRS Total scores dropped below the clinical cut-off of 36 in Session 2 (*M*=34.88*; SD*=2.79; range=31.7-39.1). No statistically significant differences were found session-to-session or from Session 1 to Session 8. (See Table 3.)

Qualitative findings also reflect participants' endorsement of MBCT as an acceptable intervention for pregnant women with a history of *difficult mood* following the birth of an infant. Within the theoretical theme of Acceptability, 8 components of acceptability emerged from the data. Conceptually, these 8 components appear to describe and reflect 3 subthemes of acceptability. (See Table 4.) An important contributing factor to the acceptability of the program appears to have begun with the "sell" or appeal of the program; I labeled this subtheme as *Joining.* Once enrolled in the program, acceptability turned on the *Working Structure and Process* of sessions. Finally, acceptability was also reflected within a subtheme of *Reluctant Leave Taking with Benefits*.

Subtheme 1: Joining. The *Joining* subtheme of the overarching Acceptability theme speaks to the importance of the initial appeal of the program being acceptable to the participants. This initial appeal appears to comprise three apparently key aspects: (a) *program name*; (b) *self-selecting enrolment*; and (c) *group make-up*.

Program name. Participants reported that the *program name* "Momfulness" was important and meaningful to them. There was a great deal of convergence on this aspect as it was endorsed by four (80%) participants and is illustrated here by quotes from two participants:

> I think the title momfulness drew me in. It said everything for me. I wanted to be a part of this momfulness… It is opposite of "are you mom enough?" (Participant 1)

> Rich and wants to offer. So right away it was not a sense of being judged or depleted. Coming to it I was on a fence. Not having a child for so long and now getting pregnant. I still feel like I'm on the fence. And when I saw this I felt like I needed something to embrace my pregnancy and that was the momfulness part. Becoming full of mom. (Participant 2)

During the member checking process, four (80%) participants agreed with the statement: The title "Momfulness" caught my interest and encouraged me to register in the group. One (20%) participant neither agreed nor disagreed. She stated: "It was more the description than the title that piqued my interest." (Participant 3)

Self-selecting enrolment. Participants also spoke about the importance of *self-selecting enrolment;* that is, not needing to have been previously diagnosed with PPD to join the group but rather, determining for themselves if they considered themselves to meet the requirement for participants to have previously experienced *difficult postpartum mood*. All five (100%) participants spoke about this in the focus group and, on later member checking, all five (100%) participants agreed with statement: I appreciated that I did not need to be previously diagnosed with PPD to be a part of this group. Three selected quotes from the focus group capture this component of the program's initial appeal and therefore, of acceptability preceding and perhaps even encouraging, enrolling in and joining the program:

> The wording on the poster was really good. Because it left open. You did not have to have a diagnosis. The difficult mood, and I was like "right on." Because you can decide this yourself. And it was not for an extended period of time, 2 weeks or something, and I had it way longer so. It really encompassed everybody. (Participant 5)

> That's another thing that I liked about this group is that you did not need to have the formal diagnosis. And the wording. Really open. If you experienced difficult mood. It did not even say depression. (Participant 2)

> Because our experiences are our own. What has been difficult for one person for another one it's like whatever. But for that person that's a difficult place to be. And a painful place to be in so even if they don't fit the DSM criteria for depression, they might be feeling (long pause) it's difficult. (Participant 3)

Group make-up. Participants spoke a lot about the importance of the *group make-up*, most particularly being in a group with women who shared the experience of being pregnant with a second or third child. Five (100%) participants believed that the make-up of the group was important in attracting them to it, as is shown in the following excerpts:

> I think there are a lot of groups for first time moms, geared towards the first time moms, but there aren't for the second and third time moms. And it is a totally different thing… I was going through a traumatic birth and now I am wondering am I going to go through the same pitfalls again or am I going to do something different. And I think it is the struggle because it happened and it can happen again. So if you are a first time mom you can't relate to that. (Participant 2)

> I really, really appreciated that. Because I think it's a totally different thing the second time. The person who knows the best is probably you. I think the second time you are more relaxed and forgiving of yourself. And you know that this will pass. You know that no matter what there is going to be an end. People can tell you this the first time. But you don't really believe them. You don't really believe that the second time you are more forgiving. I think all of us had the first time either a traumatic birth and or a traumatic breastfeeding experience. These are huge parts of being a woman and feeling confident about yourself. (Participant 3)

> You are so sure before your first baby that you know how you will raise that child; how you will feel about everything. And then you have them (children) and you are completely thrown through a loop. And I think that's what really helped. To be really accepting of each other and our different beliefs and everything. It's because we know that everything changes once you have a child and you don't hold on to those ideal notions that you had before the baby. Everything changes. (Participant 5)

These quotes speak explicitly to the fact that it was important to be amongst women who weren't pregnant for the first time. During the member checking process all five (100%) participants agreed with the statement: It was important for me to know that other

group participants would be pregnant women who had all struggled with difficult moods after the birth of a previous infant.

The discerning reader will notice that this member-checking statement is limited to the idea that it was important for the group to be exclusively for pregnant women with a history of *difficult postpartum mood*. In other words, I failed to include or to separately confirm the importance of participants not being pregnant for the first time. Readers will also note that none of the quotes I provided above directly support the idea that it was important for group make-up to include only women with a history of *difficult postpartum mood*. Rather, the quotes speak explicitly only to the fact that it was important for participants to be amongst women who weren't pregnant for the first time. On reflection, I realize that my articulation of this member-checking statement to confirm what (i.e., group make-up) appeared to be a key aspect of joining the program, reflects my overall post-analytic impression that not only was it important for women to be pregnant for the second or more time, but also for them to have experienced *difficult mood* following the birth of a previous infant. My supervisor and I only realized this discrepancy following the member checking process. However, after going back and looking through transcripts, I did not find women speaking explicitly to the importance of group members having had a previous experience of *difficult postpartum mood*. This means that my participants did not have the opportunity to unambiguously confirm that being pregnant for the second or more time was important in their decision to join the program. However, in the focus group, all five (100%) women spoke about and endorsed the fact that group make-up did not include women who were pregnant for the first time, was important in their decision to join the group.

Subtheme 2: Working Structure and Process. The *Working Structure and Process* is the second subtheme of the overarching Acceptability theme. This subtheme refers to structural and process component of acceptability and speaks to the importance of three core aspects of MBCT group structure and process: (a) *connection/check-in* (b) *mindfulness practice in group*; and (c) *flexibility*.

Connection/check-in. Corresponding to the importance of the appeal of group makeup to women for *joining* the program, was the importance of the ongoing connection with group members and the two group facilitators across sessions as expressed by participants. For example, one participant 1 said the following.

> I really appreciated that kind of connection. I guess because what we were saying last week is being able to share certain things that we can't share with first time moms too. (Participant 1)

Quantitative findings on the GSRS Relationship subscale support the qualitative finding of connection being an important process component of program acceptability. Out of a possible score of 10 (I felt understood, respected, and accepted by the leader and the group), the group mean score across eight weeks was 9.3 (*SD*=0.44; range=6.9-10). While mean scores for the group fell below the lower threshold of 9 in Session 2 (*M*=8.38; *SD*=1.30; range=6.9-9.9) and Session 4 (*M*=8.9; *SD*=0.98; range=7.6-9.8), scores remained at or above 9 for all other weeks and no statistically significant differences were found from session-to-session or from after Session 1 to after Session 8. (See Figure 3b and Table 3.)

What appeared core in the building of within-group connection and relationship was the inclusion of a weekly *check-in* before beginning the week's session. For

example, at the beginning of the focus group, one participant was surprised to notice that we had not had a check-in on that day:

> Can I tell you it's a little weird to start without a check-in. I'm like so how are you guys? (Participant 5)

Participant 1 added:

> It kind of sets the tone. Because then we are like, oh yeah me too! (Participant 1)

Participant 1 also stated:

> And I guess connected with what the two of you said about the experience in the group it is that connectedness. So the check-in [is important], finding the similarities or the differences in our weeks in our experience. (Participant 1)

A quote by Participant 2 further illustrates the group's endorsement of the value of including a check-in for connecting right from the beginning of every session:

> I liked coming in and seeing all you people. And the beginning chat was a huge draw. Because we have chats in yoga class but its just short and its not as involved. So I think emotionally that's a need. To have a way of opening up and sharing information. That itself is a way of having a therapy or the way to meditate I guess. It's a great way to relate to the group. (Participant 2)

This aspect of the importance of *connection and check-in* was endorsed by all five (100%) participants. During the member checking process, all five (100%) participants endorsed connection/check-in as an important aspect of the group structure and process. It seems to me that for these participants, structurally, the weekly check-in was in and of itself an essential and valued group "topic."

Mindfulness practice in groups. To remind the reader, one of the goals of MBCT is to reduce depression relapse through interruption of automatic negative thoughts/rumination. MBCT's primary teaching component is experiential learning through mindfulness exercises. Mindfulness is one of the strategies participants learn and practice in the group to help shift ruminative thinking patterns.

As such, a central and mainstay teaching topic and goal of the MBCT program is to teach and model mindfulness to participants and for participants to practice mindfulness in the group setting (readers are reminded that participants are also strongly encouraged to practice mindfulness at home as daily homework). Participants clearly grasped the primacy of mindfulness in the program because all five (100%) participants spoke about the importance of *mindfulness practice in group* as a particularly constructive structural aspect of the MBCT program. For instance:

> The first time I thought it would be awkward I am going to feel doing this with other people. (laughter) It just kind of was like support I guess, instead of feeling weird. (Participant 4)
>
> It felt real to do that. To be able to share the experiences of actually doing the exercise with each other because it is actually opposite to the man on the mountain. (Participant 1)
>
> For me it normalized a lot. Like it's of course what you do on Sunday afternoon. Its time to think about the mountain or the raisin or whatever. (Participant 5)
>
> Yeah if I was at home and googled mindfulness on YouTube or something then I would be like ok I can't do it because there is farting in the background. And here I did not analyze it too much. If you do it yourself who do you talk to say how was it for you? There is no one to say what's ok. (Participant 2)

The following lively interchange among all five participants further illustrates their endorsement of the helpfulness of learning and practicing mindfulness within a group setting:

> I have my own experiences, at one point breathing down to the toe and I could not send the breath, its too fast, and I was talking about that and it was you who said the same. Laughter. (Participant 5)
>
> Yeah you were cross legged that week and could not find the toe. (Participant 2)
>
> So it was ok its not just in my head. And I was so inspired. (Participant 5)
>
> It normalized how I felt or what I did (Participant 3)

> Well yeah and you [talking to group facilitator] said that you also feel sleepy. So it was OH! so you can teach this and still struggle. (Participant 1)

During member-checking, all five (100%) participants agreed with the statement: It was helpful to learn and engage in mindfulness practices in a group setting rather than one-on-one or alone at home.

The GSRS Goals and Topics subscale measures participants' views on how satisfied they were with *each* week's goals and topics. Given that (a) many teaching components of MBCT are delivered through mindfulness as an experiential learning activity, and therefore (b) that the skill of "doing" mindfulness is a learned and practiced skill; and (c) that mindfulness exercises are discussed and practiced as front-and-centre in every session, it is clear that mindfulness is both a primary topic and goal of all eight MBCT sessions. For example, one of the goals of Session 2 is to show participants how depression creates difficulties in the way even mildly depressive thoughts and feelings feed off each other to create a vicious cycle. This goal is achieved through the "Walking down the Street - Thoughts and Feelings Exercise." As a group, participants reported high levels of satisfaction with the goals and topics of the MBCT program. Out of a possible maximum score of 10 (We worked on and talked about what I wanted to work on and talk about), the mean score across eight weeks on the Goals and Topics subscale of the GSRS was decimal points below the threshold of 9 (M=8.98; SD=0.56; range=8.19-9.73). Scores on the Goals and Topics subscale were below the cut-off of 9 during Sessions 1(M=8.6; SD=1.01; range=7.3-9.9); 5 (M=8.6; SD=1.12; range=6.8-9.8); and 7 (M=8.65; SD=0.82; range=7.6-9.9). (See Figure 3c.) No significant differences were found session-to-session or from Session 1 to Session 8. (See Table 3.)

Flexibility. Flexibility within the delivery of the program and modification of exercises was a notable structural and process component of acceptability. Four (80%) participants appreciated the *flexibility* of the program, as evident in the following excerpts:

> It really honored that we are all different. (Participant 2)

> I thought the mindfulness had the same feel like the group had. Not judging, not based on giving advice, but the mindfulness things that we did we are like if it hurts for you, you can change your posture, if it does not work do another activity, like if the body scan does not work, you can do the other one. It was flexible I guess. It was helpful that it was flexible. (Participant 4)

> It just occurred to me that in mindfulness not one technique or tool works the same for everybody. We tried all these tools and saw what worked for us. (Participant 3)

During the member-checking process, all five (100%) participants agreed with the following three statements: I appreciated that my requests for the group structure were addressed; I appreciated that my requests for the modifications of exercises performed in the group were addressed; I appreciated the openness and nonjudgmental acceptance of facilitators.

Overall, as measured by the Approach and Method subscale of the GSRS, group participants were highly satisfied with the overall structure and process of the modified MBCT program both within and across the eight sessions of the program.

Out of a possible maximum score of 10 (The therapist's approach is a good fit for me), the group mean score across the 8 weeks was above the threshold score of 9 (M=9.37; SD=0.51; range=8.49-9.78). High satisfaction with approach and methods remained consistent across the 8 weeks, for example the mean scores after Session 1 were 9.23 (*SD*=0.83; range=7.8-9.8) and 9.46 (*SD*=0.54; range=8.6-10) after Session 8.

Scores on the approach and methods subscale did not fall below the threshold score of 9 in any of the 8 weeks. (See Figure 3d.) No significant differences were found session-to-session or from Session 1 to Session 2. (See Table 3.)

In addition and speaking overall to the credibility of *Working Structure and Process* as a subtheme of Acceptability, the quantitative data collected on the Session Experience subscale of the GSRS also point to participants' positive views on the overall acceptability of each session and of the program itself.

On the visual analogue scale for overall session experience where scores range from 0 (There was something missing in group today—I did not feel like a part of the group) to 10 (Overall, today's group was right for me—I felt like a part of the group), the mean group score across 8 sessions was 9.19 (*SD*=0.49; range=8.41-9.74). Mean scores were lowest following Session 2 (*M*=8.1; *SD*=1.39; range=6.1-9.9) and Session 3 (*M*=9.58; *SD*=0.52; range=8.7-10). The mean score following Session 2 was the only score to fall below the cut-off score of 9. (See Figure 3e.) No statistically significant differences were found session-to-session or from Session 1 to Session 8.

Subtheme 3: Reluctant Leave Taking with Benefits. This third subtheme of Acceptability was expressed through a feeling of *loss of community and support* and the realization of *unexpected take-home benefits for parenting.*

Loss of community and support. When reflecting on and discussing their overall experience of participation in the program, participants indirectly spoke to the acceptability of the program by expressing sadness in the program ending and their feeling of loss of community and support that accompanied their reluctant leave taking of the group.

All five (100%) participants expressed feelings of sadness about completing the MBCT group program, most particularly in regard to the loss of the opportunity for the weekly connection and support facilitated by their sense of community built in and through their collective participation in the program. For instance:

> I am going to be on my own. We did this before hand, but then afterwards, this is like oh my God, I don't have Sunday 3 o'clock to look forward too! (Participant 3)

> I am hoping for that [keeping in touch], but I know life gets in the way. But that's my desire. (Participant 5)

> Thank you everybody. That's important. Important to meet more moms and people and expand our little village. Because it is hard. It's a tribe, village that we created. (Participant 2)

The member-checking process came back with three (60%) participants agreeing with the statement: I felt a sense of loss of support and community following the final group. I wanted to continue meeting with my group members after the group was over. Two participants elaborated:

> We have kept in touch frequently via email and still hope to get together after two more babies are born. (Participant 4)

> We are still in touch via email. Groups have lives, and there is always some grieving when they end, in my experience. (Participant 5)

The two (40%) who did not agree with the statement, stated:

> The group continues to connect via email regularly and eventually, we will meet again in person. (Participant 1)

> We made connections thanks to email and have been in touch, it is hard to maintain weekly meetings with new babies, so knowing that we can connect online is valuable. (Participant 2)

Unexpected take-home benefits for parenting. The finding of *unexpected take-home benefits for parenting* that emerged inductively from within the data of the

overarching a priori theme of Acceptability, was an unexpected finding in and of itself! Four (80%) participants spoke about and were amused and interested to hear about how they had independently begun "trying on" mindfulness with their toddlers and young children at home. The following quotes will illustrate this for the reader:

> My 3 year old, this week, tantrum, tantrum, tantrum. Sarah, find your breath. Sometimes it's like (making a sniffing gesture). [Laughter.] (Participant 3)

> Definitely, with my daughter applying some mindfulness techniques with her has really helped. The 2 is hard, but it has nothing on 3. Three year olds - that's when they hit the border between babyhood and childhood and they have a hard time themselves, wanting independence and not wanting to let go of the baby thing. Both of my children struggled. And it's great [learning mindfulness], it hit right around my daughter's birthday. I definitely have more patience with her, acceptance of her emotions and that it is ok for her to feel angry. I don't have to say get over it, get a grip. I will acknowledge her negative emotions. "I know you are feeling frustrated, I understand you are angry." It was a real reminder. (Participant 3)

In member checking this finding of *unexpected take-home benefits for parenting*, three (60%) participants agreed with the statement: As a result of the group experience I am now using and sharing mindfulness practices with my toddler(s). Participant 2 reported back that while she had thought that she would use mindfulness practices with her toddler, "it did not stick." Participant 4 said that she was "looking forward to using it with her daughter when she is a bit older."

To summarize, overall both quantitative and qualitative findings support the acceptability of the modified MBCT program for pregnant women with a past history of *difficult mood* in the first year following the birth of a child. Qualitatively, three subthemes of acceptability were identified: (a) *Joining*; (b) *Working Structure and Process*; and (c) *Reluctant Leave Taking with Benefits*. The *program's name*, its *self-selecting* nature, and *group make-up* characterize *Joining.* This subtheme received an initial overall endorsement

rate of 93.3% (*program name*, 80%; *self-selecting enrolment*, 100%; *group make-up*, 100%) and this endorsement rate remained stable and consistent at member checking. *Working Structure and Process* received an initial overall endorsement rate of 93.3% (*connection/check-in*, 100%; *mindfulness practice in group*, 100%; *flexibility*, 80%), which changed to an overall endorsement rate of 100% at member checking when all five participants endorsed the *flexibility* of the program and its facilitators. *Reluctant Leave Taking with Benefits* comprised two aspects and received an initial endorsement rate of 100% (*loss of community and support*, 100%; *unexpected take-home benefits for parenting*, 80%). At member checking, three (60%) participants endorsed this third subtheme of acceptability with 60% support for both the statement regarding *loss of community and support* (a drop from the initial endorsement rate of 100%) and of the *unexpected take-home benefits for parenting* (a drop from the initial endorsement rate of 80%).

Effectiveness

Research questions 3, 4, and 5 were asked to address the effectiveness of the slightly modified MBCT program for pregnant women with a history of *difficult postpartum mood*. For the purpose of the study e*ffectiveness* is the demonstration of benefits to program participants where benefits include a decrease in anxiety and depression symptoms, a decrease in self-reported anticipatory worry about the recurrence of difficult mood following the birth of the expected infant, an increase in self-reported confidence to cope with difficult mood from T1 to T2, as well as increases in individual, interpersonal, social, or overall wellbeing session to session or from Session 1 to Session 8.

Quantitative assessment included the ORS, HADS, and WC-DM scales. Qualitative data were gathered through my weekly field notes, the focus group, and from explanations and comments participants provided on the self-report WC-DM measure. Quantitative findings suggest that the program was effective in decreasing anxiety and worry about *difficult postpartum mood*. Qualitative findings extended the parameters of effectiveness to include outcomes beyond changes in affect and worry.

Quantitative measures were assessed and compared for the following indicators of effectiveness: (a) improved scores (from immediately before Session 1 to immediately before Session 8) on the 4 ORS subscales (individual wellbeing, interpersonal wellbeing, social functioning, and general wellbeing) and the composite total score of the ORS (Research Question 3); (b) reduction (from T1 to T2) in current depression and anxiety if present at T1 as assessed by the HADS (Research Question 4); (c) decreased ratings (from T1 to T2) of anticipatory anxiety about future *difficult postpartum mood* following the birth of the expected infant as assessed by the WC-DM scale (Research Question 5a); and (d) improved ratings (from T1 to T2) of anticipatory confidence or self-efficacy for coping with potential *difficult mood* following the birth of the expected infant as assessed by the WC-DM scale (Research Question 5b). Qualitative data were deductively assessed for representativeness of the theoretically pre-established Effectiveness theme. Within this theme, the data were then thematically analyzed first deductively and then inductively. Deductively, we looked for expressions and quotes speaking to our quantitative indices of effectiveness (i.e., depression, anxiety, worry, and confidence to cope with *difficult postpartum mood*). Inductively, five subthemes were drawn from within the data supporting the overarching theme of effectiveness: (a) *Self-caring*; (b) *Normalizing and*

Relieving; (c) *Feeling Prepared*; (d) *Embracing Pregnancy*; and (e) *Practical and Portable Coping*.

Research Question 3

Do pregnant women who previously experienced *difficult mood* (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant gain measurable benefits from participating in an 8-week MBCT program as assessed between Session 1 and Session 8 on the ORS, through focus group conversation and other qualitatively collected data?

Quantitative and qualitative findings suggest that study participants gained some measurable benefit from participating in the MBCT program. Benefits included a clinically meaningful increase in individual wellbeing and interpersonal wellbeing and statistically significant increases in social wellbeing/functioning and overall wellbeing.

ORS composite total score. The mean of all participants' scores across all four subscales across 8 weeks was 27.75 (*SD*=4.10; range=13.6-36.4), and below the clinical cut-off of 25 (Duncan et al., 2003). There was a 31.2% increase in the ORS composite total score from Session 1 (*M*=19.5; *SD*=5.69; range=13.6-26.6) to Session 8 (*M*=32.00; SD=4.96; range=23.6-36.4); this increase was statistically significant ($t(4)=-3.03$, $p=0.04$) with a large effect size ($d=-2.40$).) (See Table 2.)

Clinical cut-offs for each of the four subscales was set at 6.25 as suggested by Duncan and colleagues (2003).

ORS individual wellbeing subscale. As a group, the mean score across 8 sessions was 7.27 (*SD*=1.14; range=3.2-10.0). The lowest and highest mean scores across all weeks

for the group were Session 1, *M*=5.18; *SD*=1.79; range=3.2-7.6) and Session 7, *M*=8.13; *SD*=1.06; range=6.8–9.4. Group mean at Session 8 was 8.1 (*SD*=1.66; range=6.8-9.4) and this 29.2% increase from Session 1 (*M*=5.18; *SD*=1.79; range=3.2-7.6) was not significantly different. (See Table 2.) However, this increase in individual wellbeing from Session 1 to Session 8 does show a large and meaningful effect size, *d*=-1.69.

Two qualitative findings relate to this clinically meaningful increase in individual wellbeing across the eight weeks, namely the two Effectiveness subthemes of *self-caring* and the experience of participating in MBCT as being *normalizing and relieving.* (See Table 4.)

Self-caring. Five (100%) participants thought the program helped them to focus on *self-caring* and that this focus was particularly helpful to them. Quotes from several participants signify the group's endorsement of the *self-caring* subtheme of effectiveness:

> I have been calling it my therapy group. I would say I am going to therapy today, SEE YOU LATER… I think self care was emphasized and to really slow down and taking time to just amalgamate your own thoughts. Making sure to take the time even if it is 30 seconds to find my breath. I really appreciated talking about things that make us feel good. I really like that that was emphasized and it was a really good reminder and so easily forgotten. (Participant 3)

> The gas mask! Take care of yourself first. (Participant 1)

During the member-checking process, all five (100%) participants agreed with the statements: Overall, the content of the Momfulness group reminded me to take care of myself; Learning mindfulness skills has reminded me to take care of myself.

Normalizing and relieving. Four (80%) participants commented during the focus group on how being in the MBCT group was *normalizing and relieving* for them. For instance:

> Probably knowing that even if you have different opinions or solutions, everyone thinks about the same stuff. Maybe we choose different things, but there is acceptance that we chose the right thing for us. (Participant 4)

> Sometimes you feel like you are the only woman who struggles with bonding. I actually remembered saying out loud that I could put him away for adoption and I really did not bond and having those feelings and you don't want to tell anyone. And everyone "loves being a mother." And "motherhood is the best blessing and the best vocation." And I really want to have a shower all by myself, but I find that so many women are such idealists and they have such high expectations of themselves and I have a feeling that the face that people put on for friends and society is not what is going on behind closed doors so it is so nice to come to a place where these things are just expected as normal. There is nothing wrong with you for saying out loud "I want to put my baby out for adoption" where could I say that in another group or at the table of attachment-parenting moms and they would be "AHHHHHH! You said what!?" … And it's really hard when you don't have that connection with your baby that you expected you would. I get a lot out of sharing and realizing that this is not unique to me, that it's probably common. (Participant 3)

> I think in an outside world we are socialized to speak positive about being pregnant and isn't it great and having the babies isn't it great and it's such a great thing to do. We are socialized we say these positive things. And I come here it's about being mindful and inviting the guests in. And getting real about what we are really feeling and it creates the safety naturally of saying what's real. And a lot of things I think I feel I would be judged or looked down upon if I was in the general community saying these things. (Participant 1)

Although only four of the five participants' endorsed this theme during the focus group, during the member checking process all five (100%) participants agreed with the statement: Being in the Momfulness group provided me with a sense of relief and normalized my experience, both of which were helpful for me.

ORS interpersonal wellbeing subscale. As a group, participants' mean score across the 8 sessions was 6.78 (*SD*=1.56; range=3.7-9.4), slightly above the clinical cut-off of 6.25. Lowest and highest group mean scores for interpersonal wellbeing were recorded in Session 1 (*M*=5.1; *SD*=1.47; range=3.7-7.1) and Session 7 (*M*=7.9; *SD*=0.94; range=7–9.2). There was an 18.6% increase in the mean score from Session 1 (*M*=5.1; *SD*=1.47;

range=3.7-7.1) to Session 8 (*M*=6.96; *SD*=2.46; range=2.6-8.5), and while this increase was not statistically significant, the effect size was large, *d*=-2.46. (See Table 2.)

ORS social wellbeing/functioning subscale. Mean score of participants across 8 sessions was 6.71 (*SD*=1.32; range=2.6-9.5), also slightly above the cut-off score of 6.25. Mean scores ranged between 4.36 (*SD*=1.84; range=2.6–6.5) in Session 1 and 8.54 (*SD*=0.35; range=8.2–9.1) in Session 8. This 41.8% increase from Session 1 to Session 8 was statistically significant (*t*(4)=-4.62, *p*=0.01) with a large effect size (*d=-3.16*). (See Table 2.)

ORS overall wellbeing subscale. The group's mean score on the overall wellbeing subscale across 8 sessions was 6.99 (*SD*=1.15; range=3.3–9.6). Only on enrolment at Session 1was the group mean (*M*=4.86; *SD*=1.65; range=3.3-6.7) below the clinical cut-off score. Mean score increased by 35.4% from Session 1 to Session 8 (*M*=8.4; *SD*=1.41; range=6.0–9.6) and this change was statistically significant (*t*(4)=-4.78, *p*=0.01). A large effect size was established (*d*=-2.31). (See Table 2.)

Research Question 4

Do pregnant women who previously experienced *difficult mood* (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant show a measurable decrease in depressive and anxious symptomology from T1 to T2 as measured by the HADS and through focus group conversation, field notes and other qualitatively collected data?

Quantitative and qualitative findings provided mixed support for MBCT's effectiveness in significantly decreasing depression and anxiety. Quantitative findings

demonstrated a statistically significant decrease in anxiety from T1 to T2, but failed to demonstrate any significant or meaningful impact of MBCT participation on measures of depressed mood. There was no statistically significant change in the groups' overall HADS score from T1 to T2.

HADS anxiety subscale. At T1, one (20%) participant scored normal or *non-case* (scores 0-7) and four (80%) participants scored above the clinical threshold or *probable cases* (scores of 11 to 21) on the HADA subscale. At T2 post intervention, none of the participants scored above the clinical threshold or *probable cases* (scores of 11 to 21) on the anxiety subscale. Two (40%) scored *normal* (scores 0-7) and three (60%) scored in a *borderline cases* category (scores of 8 to 10). Scores on the HADA subscale decreased overall for all five (100%) participants from T1 to T2. Four participants' scores changed between clinical categories, three from *probable case* to *borderline case,* and one from *probable case* to *normal case*. As a group, there was a statistically significant decrease in anxiety from T1 (M=11.4; SD=3.91; range=6-7) to T2 (M=8.0; SD=2.55; range=4.0-10.0); $t(5)$=3.03, p=0.04. This 16.2% decrease in anxiety is reflected in a large effect size (d=1.03). (See Table 5.)

HADS depression subscale. At T1, all scores were below the clinical threshold of *probable caseness* (<11) on the HADD subscale. All five (100%) participants remained below the clinical threshold on the depression subscale at post-intervention. The mean score on the HADD subscale remained the same for Participant 3 from T1 to T2. Scores on the HADD subscale decreased overall for the other four (80%) participants from T1 to T2. Participant 1's scores changed between clinical categories, from *borderline* to *normal*. As a group, participants' mean score at T1 was 6.0 (SD=2.0; range=3.0-8.0) and decreased by

9.5% to 4.0 at T2 (*SD*=1.41; range=2.0-4.0). This decrease was not statistically significant, but showed a considerable and large effect size, *d*=1.17. (See Table 5.)

Qualitative data show that participants did not speak specifically about "anxiety" or "depression" and rather used terms like "overwhelmed," "crazy town," "mood," and "positive [and] negative emotions" for example. Participants did however note and talk about the diminishment of troublesome or distressing affect and being more able to cope with or manage their moods on a daily basis. Two subthemes drawn inductively from the qualitative data provide tentative support for reasons underlying these mood-related changes. (See Table 4.)

Feeling prepared. It seems theoretically and practically reasonable to suggest that the 80% consensus among participants of *feeling prepared* for managing both current and future mood states contributed to the statistically significant decrease in current levels of anxiety over the course of the 8-week MBCT program and to the clinically and practically meaningful decrease in depression as measured by the HADS. Four (80%) participants made remarks about how participating in MBCT helped them generally to feel more prepared to cope with current emotions and moods as well as to manage themselves should they re-experience *difficult mood* following the birth of the expected child. For example:

> I am more forgiving of myself when I have a hard day and I want to shout at them. I'm just saying that's how I am feeling that day and its ok for them to see that. Mommy had a hard day. Not, "I don't want you to put your pajamas on your head, I want you to put them on your legs and get into bed." (Participant 3)

> And so being here I think it shone a lot of light on how my thoughts spiral out and I create stories and how I interpret what people say based on what is going on inside and that has been really helpful. So that when I do start to feel like I can't handle what's happening there is just a little bit more insight tied to that to help me handle what's going on (Participant 1)

> And it is also helpful to talk about the mastery. I talked myself down off crazy town a few times. The crazy town, I've been there. And some of that was using the cd, and using the skills. That helps me with my sense of mastery. That helps me to remember that depression lies and anxiety lies. (Participant 5)

> Accepting negative as much as I accept the positive emotions and not trying to shut down the negative ones. Letting them be. I think it will help afterwards too. Accepting that that's ok and being forgiving of myself for feeling these emotions. (Participant 3)

> Having these discussions helps me to know that it will not be the same and it will be a unique experience but what you have already experienced can influence how you will manage and deal with the next time. (Participant 2)

> I think I feel a bit safer this time dealing with my mood afterward because of having learned some of these skills. I think it helped me to learn that there are things I can do like skills or the skills we learned, the different things on the CD, the mountain thing, all those things, even if we can't do all those things that we like to do, like sit and read a book alone, or take a shower alone. (Participant 4)

On member-checking, participants were asked to say if they agreed or did not agree with statements that reflected their feeling prepared to manage (a) current emotions and moods, and (b) possible *difficult postpartum mood*. All five (100%) participants agreed with the statement: Overall, as the result of my participation in the Momfulness group, my ability to manage difficult moods has increased. All five (100%) participants agreed with the statement: As the result of learning mindfulness skills, my ability to manage difficult moods has increased. One participant qualified her agreement that learning of mindfulness skills in particular in the program had contributed to her improved ability to manage difficult moods. She stated:

> Yes. But learning them in the Momfulness setting, i.e., in a group of not-first-time moms who had experienced mood difficulties, was important. I think this type of group was ideal for me. I don't think I would have had the motivation to learn the skills had I not had the support of a group of pregnant women with similar experiences. (Participant 5)

All five (100%) participants agreed with the statements: Overall, being in the Momfulness group helped me to feel more prepared for dealing with a possible *difficult postpartum mood.* Learning mindfulness skills has helped me to feel more prepared for dealing with a possible *difficult postpartum mood*.

Embracing pregnancy. Whether current *difficult mood* was related to anxiety or depression, or to some combination of the two, participants spoke to their *embracing pregnancy* as an outcome of their participating in the modified MBCT program as being helpful to them in relation to improved mood.

Three (60%) participants reported that the program helped them to *embrace their pregnancy* and that this had been helpful in terms of their overall mood. For example:

> And now I am at the point where I am like yeah I have the baby and I'm glad for it. But it took a long while to get there. This helped. Because it did feel like without having the support group then I would not allow myself to embrace it. (Participant 2)

> I felt exactly the same. I had such a negative reaction to this pregnancy and I felt that I wanted to do something positive for myself and for this child and for this pregnancy. And Momfulness really caught my eye. It really helped me, especially connecting with everybody. (Participant 3)

> I think this group has also helped me with all of those things and also helped me to stay engaged with my pregnancy where I think I may have disconnected a little bit more with my pregnancy so I did not have to think about what happened last time and a lot of these fears. So it kept me engaged with that. Especially when 16 weeks came and I was thinking being on bed rest last time and all the things that could go wrong. It just really helped me to go though that and come out. (Participant 1)

Although only three (60%) participants spoke about or endorsed the subtheme of embracing pregnancy during the focus group, all five (100%) participants agreed with statement: Overall, I have embraced my pregnancy as a result of participating in the Momfulness group. One (20%) participant stated that she neither agreed nor disagreed

with the statement: Learning mindfulness skills has helped me embrace my pregnancy. The participant clarified her neutrality on this statement by saying:

> I neither agree nor disagree with this one. I definitely embraced my pregnancy through this process, but I think that was from the camaraderie of the other women. The mindfulness exercises themselves were more about me and my own thought processes. (Participant 3)

In summary, quantitative findings support MBCT's effectiveness in significantly decreasing anxiety but only suggest its effectiveness in decreasing depression. Qualitative data suggest that participants were *feeling prepared* to manage both current and future mood states and were able to *embrace their pregnancy* as an outcome of participating in the modified MBCT program.

Research Question 5

For pregnant women who previously experienced *difficult mood* (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant, does participation in an 8-week MBCT program result in a measurable change in (a) self-report anticipatory worry about the recurrence of *difficult mood* following the birth of the expected infant, and (b) self-report on confidence to cope with *difficult mood* should it recur following the birth of the expected infant as measured with the WC-DM scale, through focus group conversation and other qualitatively collected data? Participation in the MBCT program resulted in a statistically significant change in self-report anticipatory worry about the recurrence of *difficult mood* following the birth of the expected infant, and in a clinically meaningful increase in self-reported confidence to cope with *difficult mood* should it recur following the birth of the expected infant.

Anticipatory worry about difficult postpartum mood. From T1 to T2, scores on

the W-DM subscale of the WC-DM decreased for three (60%) participants by 1 to 2 scores and remained the same for two (40%) participants. The decrease in anticipatory worry about *difficult postpartum mood* for 3 of the 5 participants was large enough to effect a statistically significant ($t(4)=3.16$, $p=0.03$) 20% decrease within the group from T1 ($M=3.80$; $SD=0.45$; range=3.0-4.0) to T2 ($M=2.8$; $SD=0.45$; range=2.0-3.0) with a robust effect size ($d=2.22$). (See Table 6.)

Perceived confidence to cope with a difficult postpartum mood. Scores on the perceived ability to cope with difficult postpartum mood subscale increased from T1 to T2 for three (60%) participants by 1 to 2 scores, which indicated a positive change in perceived confidence in their ability to cope with future *difficult mood* should this occur after the birth of the expected infant, and remained the same for two (40%) participants. As a group, the 16% increase on the C-DM subscale of the WC-DM from T1 ($M=3.0$; $SD=0.71$; range=2.0-4.0) to T2 ($M=3.8$; $SD=0.45$; range=3.0-4.0) was not statistically significant; a large effect size ($d=-1.38$) was however found. (See Table 6.)

Post-hoc review of the written responses on the C-DM subscale at T1 revealed participants thought that following the birth of their expected infant they would cope with their worries about *difficult mood* because they (a) had social support; and (b) had already had the experience of overcoming difficult mood. Three (80%) of the participants wrote at T1 that social support was a coping strategy. For instance:

> I am also trying to communicate these worries with my husband from the start. (Participant 1)
>
> I have support from family and friends. (Participant 2)
>
> I am more prepared to push for the help I might need this time. I think my husband is more prepared, and I have some close confidants that I can lean on who are trained to recognize PPD/PTSD. (Participant 3)

Two (40%) participants mentioned previous experience:

> I feel most activities should be easier because I have been through the experience. (Participant 1)

> I know the exercise and my garden help energize me. I know I can use these coping strategies to help me when I feel worried. (Participant 2)

Before the intervention at T1, three (60%) participants wrote that they were eager to learn skills that would help them to cope with worry. For instance:

> I'm hoping to learn skills before the birth that help. That's why I am here. (Participant 1)

> I guess this is something I would like to learn about how to cope with the worry, because I feel like I "break down" too often and don't know how to deal with the anxiety in a good way. (Participant 4)

> I think I've been more focused on worrying about coping with the C-section recovery, the newborn, splitting my time between my 1st child and the baby etc., etc., and not as focused on coping with my mood. I know I'll get through it. I did last time. But it was really hard. More skills would help. (Participant 5)

At T2, while participants still attributed some of their confidence to cope after the birth of their expected infant with *difficult postpartum mood* to social support [e.g., Participant 3 wrote: "I have an excellent support system (family, doula, friends) for the postpartum period."], all five participants wrote about the potential benefit of what they had learned from the MBCT program including mindfulness skills.

> Learning MBCT skills and reconnecting with a meditation practice gives me hope, though. It's (the rating on a scale of 1 to 5) a 3 instead of 4 because of the time I have given myself to explore how things can be different. I have a wider toolkit of resources, new connections to moms, and a feeling of confidence as a result of my commitment to this group and its purpose. This program has helped me to begin looking inward, building my coping skills, understanding myself better. It has also helped me to communicate better with loved ones about feelings, needs, moods, etcetera– mainly because I am clearer about these things myself, thanks to learning MBCT techniques. (Participant 1)

> I am staying more in the moment and not setting myself up for what might or might not happen. What will be, will be. I know things will pass, I won't be stuck in a situation forever. (Participant 2)
>
> I guess I'm not 4 [a lot] worried because this time I'm more prepared and those around me are more prepared to recognize the symptoms and seek help. I also now have some tools and coping skills to deal with my thoughts and feelings. I am more than "a little" sure of myself, though, because I am set up for success with the mindfulness tools that I have. (Participant 3)
>
> I also feel like I know it will pass as things get easier and I have learned some tools to help me deal with difficult moods. In my rational moments I pause and I know and remember that I have things I can do to help myself with the moods, and people who can help me with things (Participant 4)
>
> I know from this experience that the mood passes, I know I have skills to manage my moods, although I am also aware how difficult mood is not pleasant to experience. (Participant 5)

Adding to the four previously identified subthemes of Effectiveness (i.e., *Self-caring*, *Normalizing and Relieving*, *Feeling Prepared*, and *Embracing Pregnancy*), a further subtheme of the utility of mindfulness as a means of *Practical and Portable Coping* emerged from the analysis of the focus group data as a subtheme contributing to the overall finding on the effectiveness of a modified MBCT program for pregnant women with a past history of *difficult postpartum mood*. (See Table 4.)

Practical and portable coping. Mindfulness as a practical and portable coping strategy was endorsed by all five (100%) participants. Two participants offered examples of ways they were using *and* thinking about how, following the birth of their expected infant, they would be applying the mindfulness skills they were learning. For example, one participant spoke about the potential of using mindfulness in times when she might not be in the situation to do what she perhaps physiologically needed to do but could not do:

> Mindfulness is very portable, like you said. Even if you have to stay in bed nursing and you really, really want to pee and you wish you could get up and pee, but you can't. You can still do the mountain thing because it's so portable. (Participant 4)

Participant 1 also commented on the practicality of mindfulness being.

> The insight of knowing that it (mindfulness) does not need to take a half an hour, but it can take even a few seconds sometimes just to reconnect with self. (Participant 1)

During member-checking all five (100%) participants agreed with the statement: I found mindfulness to be a portable and practical coping strategy that I could use when my other coping strategies were not available.

In sum, although, the change on the C-DM subscale of the WC-DM was not statistically significant, qualitative findings from the written comments on the WC-DM as well as from the focus group data, further support the effectiveness of MBCT for these participants.

To summarize, quantitative and qualitative findings indicate that a modified MBCT program is effective in supporting and helping pregnant women with a history of *difficult postpartum mood* to manage contemporaneous emotions and moods as well as to feel more prepared for and confident about managing possible (and in some cases, anticipated) future *difficult postpartum mood*. Qualitative findings suggest that participants found that the program gave them a range of benefits. These benefits are described by the five identified subthemes that emerged within the data supporting the overarching theme of effectiveness: (a) *self-caring*; (b) *normalizing and relieving*; (c) *feeling prepared*; (d) *embracing pregnancy*; and (e) *practical and portable coping*.

Post-hoc Analysis

To assess post-hoc relations between and among depression, anxiety, worry about *difficult postpartum mood* and perceived confidence to cope with *difficult postpartum mood*, and scores on the ORS and GSRS at T1 and T2, I ran two-tailed Pearson correlation analyses using the following variables: HADD, HADA, HADS , W-DM, C-DM, WC-DM, mean GSRS total score across all sessions, and mean ORS total score across all sessions. To control for multiple comparisons, I used the conservative Bonferonni correction and required interactions to be significant at the 0.01 level ($p \leq 0.05$). As a group, at T2 participants with higher scores on the W-DM subscale scored higher on the HADS anxiety subscale (r=0.88. This was statistically significant at the 0.05 but not at the corrected 0.01 level. Given the small size of my sample, if this correlation was based on a larger sample, there is a great likelihood of it reaching the more stringent level of statistical significance set by the Bonferonni correction. When small sample sizes are at play, many researchers look to the coefficient of determination (r^2) to assess the *meaningfulness* of the correlation coefficient (r); the coefficient of determination explains the variance shared between two variables (Munro, 2005, p. 250). More particularly, researchers consider correlation coefficients of at least 0.70 to be meaningful because the coefficient of determination explains almost half (49%) of the shared variance between two variables. If I apply this strategy, then the 77.4% (coefficient of determination, r^2=0.774) of the variance in the correlation coefficient is explained meaning that W-DM accounts for 77.4% of the variance of HADA. No other correlations between and among depression, anxiety, worry about *difficult postpartum mood* and perceived confidence to cope with *difficult postpartum mood*, and scores on the ORS and GSRS, were significant and correlations were less than 0.70.

Chapter Summary

In this chapter I presented the quantitative and qualitative findings of the study. I conformed with Creswell and Tashakkori's (2007) and Klaasen and colleagues (2012) recommendations to integrate quantitative and qualitative strands when reporting data for a mixed- methods study. Quantitative findings were therefore accompanied by themes and supporting quotes from participants' written comments on questionnaires, spoken and conversational data collected in the focus group, and from the observations my research assistant/co-facilitator and I made in our field notes. In the next and final chapter I will discuss the findings of the study, their implications for practice, and the strengths and limitations of the study. I will also identify directions for future research and provide a conclusion to the thesis.

CHAPTER 4

DISCUSSION

Chapter Introduction

My intention for my thesis research was to gain some insight into the safety, acceptability and effectiveness of the MBCT program for pregnant multiparous women who have experienced *difficult postpartum mood* in the past. The overall findings reported in the preceding chapter support MBCT's safety, acceptability, and effectiveness for working with pregnant women who have experienced symptoms of difficult mood during a previous postpartum period. This final chapter discusses these findings. I begin the chapter with a summary of the study's purpose and research. Then, I follow my interpretation of the findings with a discussion of the limitations and strengths of the study, implications for counselling, suggestions for future research, and a conclusion.

Study Purpose and Research Summary

Although pregnancy is fundamentally a normal process for most women, it is also a time of rapid physical and emotional change with the difficult element of uncertainty regarding the outcome of the birth process for the mother and the child. On the one hand, normal pregnancy for a physically and psychologically healthy woman can be a joyous experience. On the other hand, pregnancy complications or unfavorable physical or emotional health can turn the pregnancy experience into a time full of worries and close monitoring of medical concerns for mother and fetus. Therefore, the pregnancy state can be more or less stressful. The same can be said of the birth and postpartum experience.

Over the past few decades a number of mindfulness-based interventions, including mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1990) and mindfulness-based

cognitive therapy (MBCT; Segal et al., 2002), have been used for problems related to mental health and physical conditions. In recent years mindfulness-based interventions during pregnancy also have gained increased popularity. These interventions have been a potentially protective factor in mental and physical health and perinatal outcomes. Mindfulness-based interventions and practice may also become a resource for birthing, parenting, and learning to live with awareness, kindness, connectedness, and care. However, little is known empirically about the effects of mindfulness-based interventions during pregnancy. The slightly modified MBCT program tested in my study was intended to help participants practice being in the present moment to faciliate greater confidence and a deeper sense of wellbeing during this normative life transition.

The present study extends the mindfulness, MBCT, pregnancy, and PPD literatures. The purpose of my study was to consider the safety, acceptability, and effectiveness of MBCT for pregnant women who have experienced *difficult mood* (e.g., feeling worried, nervous, sad, down, overwhelmed) for at least 2 weeks in the first year following the delivery of a live infant. Specifically, the study was designed to: (a) assess the safety and acceptability of MBCT during pregnancy for women with a history of *difficult postpartum moods* (e.g., feeling worried, nervous, sad, down, overwhelmed) and/or emotions for at least 2 weeks within the first year following the delivery of a live infant; (b) determine if empirical findings regarding the effectiveness of MBCT on depression (Barnhofer et al., 2009; Dimidjian et al., 2010; Eisendrath et al., 2008; Eisendrath et al., 2011; Ma & Teasdale, 2004; Mason & Hargreaves, 2001; Segal et al., 2002; Teasdale et al., 2000) and anxiety (Evans et al., 2008; Williams et al., 2008) in the general population and among primary care patients with active symptoms of depression

and anxiety (Finucane & Mercer, 2006) extend to pregnant women with a history of *difficult postpartum mood;* and (c) extend the recent collective findings of the Beddoe group (2009), Duncan and Bardacke (2009), and Vieten and Astin (2008) on the effectiveness of using a mindfulness-based intervention during pregnancy to reduce stress and improve a negative mood.

The research design was a mixed-methods exploratory and descriptive study. Dependent measures were administered before the intervention (T1), before and after each session of the intervention, and in one week following the 8-week intervention (T2). The intervention phase consisted of eight weekly two-hour group sessions. Each session consisted of a check-in, an introduction of the MBCT concepts, the practice of the MBCT skills, and homework assignments.

Participants in my study were pregnant women who had experienced *difficult mood* (e.g., feeling worried, nervous, sad, down, overwhelmed) for at least two consecutive weeks within the first year following the delivery of a live infant. All participants were at least 18 years of age, proficient in spoken and written English (whether first or second language), and lived in the greater Victoria area. A previous diagnosis of PPD or current diagnosis of depression was not required for inclusion in the study.

Summary and Discussion of Findings

My study is a pioneer work and provides a tentative yet reasonable base of support for the safety, acceptability, and effectiveness of MBCT with pregnant multiparous women. Participants' age, ethnicity, relationship status, education, employment status, number of children, religion/spiritual orientation, trimester at the start

of the group, pregnancy planning, mental illness history, and previous mindfulness experience did not influence quantitative outcomes.

Safety of MBCT for Multiparous Pregnant Women

Research Question 1. *Do pregnant women who previously experienced difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant, consider MBCT to be a safe program as assessed through ORS, through focus group conversation, field notes and other qualitatively collected data?*

Several adjustments and modifications to the program were made to ensure that the practices were safe for pregnant women. For example, I asked participants to ignore the instruction on the CD to lie on their backs and instead to sit or lie on their side for their home practices. This was to ensure their physiological safety. Modifications were also made to the mindful movement component of the program in order to ensure they were physically manageable and therefore appropriate for pregnant women.

Overall, a group-oriented MBCT intervention was found to be safe for pregnant multiparous women who had experienced *difficult mood* during a previous postpartum period.

Quantitative findings support the safety of MBCT as an intervention for pregnant women with a history of *difficult postpartum mood.* There were no significant decreases in session-to-session or Session 1 to Session 2 scores on any of the four ORS subscales and ORS composite Total Scores. Also, other than Session 1 scores prior to commencing participation in the MBCT program, no ORS subscale or composite Total Scores were below clinical cut-off scores.

If we look more closely at the composite ORS Total Score as an overall measure of safety, with the exception of their baseline measure in Session 1, as a group, participants' composite ORS Total scores did not drop below the clinical cut-off of 25 at any point across the other 7 sessions of the study.

Individually, composite ORS Total scores dropped below the clinical cut-off of 25 for Participant 2 in Session 3 (23), Participant 3 in Session 6 (24.1), Participant 4 in Session 8 (23.6), and Participant 5 in Session 4 (23.5). Because the drops occurred on different weeks for all participants, it is likely that the drops were the result of individual factors not associated with the group.

Field notes suggest that unexpected events, such as an illness of Participant 2's parents during a week before Session 3, Participants 3's loss of a pet during the week before Session 5, and Participant 3 and 5's health struggles (low iron level for Participant 3 through week before Session 8, and high blood pressure for Participant 5 through week before Session 4), may have been reasons for their drop in scores. Thus, although individual ORS scores fell below the clinical cut-off for some participants on different weeks of the program, on average total scores did not drop below the clinical cut-off and provide one line of evidence to support the safety of MBCT for pregnant women with a history of *difficult postpartum mood*.

Given these findings, it also seems reasonable to suggest that future studies investigating the safety of MBCT collect and be alert to individual stressors unrelated to participation in the program but which impact and therefore, potentially confound, measures of safety recorded for the study.

We also did not observe, and no participant reported, any adverse or potentially unsafe emotional or physical consequences (e.g., a participant starting to bleed or becoming flooded with emotion while doing the any of the session exercises or following a session. Some adjustments to the extant MBCT protocol were made on-the-fly in response to participants' requests. For the most part, these requests from participants centered on changes to facilitate their physical comfort. These included adding an extra break, changing the "dignified posture" wording during meditation to "comfortable position", and explicitly including focusing on the belly during the body scan. All participants went on to deliver full-term babies irrespective of what trimester they were in at the beginning of the program, and all deliveries were uncomplicated as understood within the bounds of normal.

The current decade has seen an upsurge in the use of mindfulness-based interventions that teach mindfulness skills in order to promote psychological health and wellbeing. There is now increasing interest in applications of mindfulness to expecting mothers, and a small body of research literature is emerging on the subject (eg., Beddoe et al., 2009; Dimidjian et al., 2012; Duncan & Bardacke, 2010; Felder et al., 2012; Vieten & Astin, 2008). Research assessing and evaluating MBCT in pregnant women is still in its infancy. At this initial stage, the investigation of the intervention's safety takes priority over rigorous experimental design (Bowling, 2007). Although the few studies that have explored the effectiveness of mindfulness-based interventions in this population have not reported any side effects or adverse events, up to now there have not been any published studies focusing directly on assessing the safety of MBCT. My study is therefore an important first step and the findings presented here offer a reasonable base of support for

the safety of MBCT intervention in the prenatal period with multiparous women. My hope is that these early findings will encourage and support other researchers to proceed in gathering empirically sound evidence of the efficacy of this intervention for pregnant women generally and with a history of *difficult postpartum mood* perhaps particularly.

Acceptability of MBCTfor Multiparous Pregnant Women

Research Question 2. *Do pregnant women who previously experienced difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant, consider MBCT an acceptable program as assessed by the GSRS, through focus group conversation, field notes and other qualitatively collected data?*

In general, participants greatly appreciated and enjoyed the program. The inherent nonjudgmental, gentle, and flexible nature of the mindfulness approach appears to be appropriate for and highly acceptable to pregnant women who have experienced *difficult mood* during the previous postpartum period. Quantitative findings supported the acceptability of MBCT intervention in this population and qualitative findings echoed these findings. Collectively therefore, my findings reflect participants' endorsement of MBCT as an acceptable intervention for pregnant mothers with a history of *difficult postpartum mood*.

Despite the finding that, as a group, participants' GSRS total scores dropped below the clinical cut-off of 36 in Session 2 (M =34.88; SD = 2.79, range=31.7-35.8) the program's acceptability was highly supported by the qualitative focus group data. It is important to note that setting the lower threshold of acceptability at 36/40 (90%) is an

extremely conservative threshold and that if this had been set at 32/40 it would have indicated an acceptability value of 80%, which is still indicative of a high acceptability.

In the focus group participants spoke of initially having their attention caught and being intrigued by the group name, Momfulness, and that this had greatly influenced their *joining* the program and study. They expressed the importance of *self-selective* enrollment. Participants commented on the importance of the *group make-up*, *check-ins*, and *mindfulness practices in the group*. Participants enjoyed the flexibility of the group and expressed sadness when it was over and a reluctance to take leave from the program and group. Finally, they noted that they were interested in sharing their mindfulness practices with their toddlers, and some participants described how they were already using mindfulness in their daily parenting interactions with their young children.

In my discussion that follows on the acceptability of the program, I begin by expanding on the concept of mindfulness and discuss the personal position that I brought to my study and from where I approached the design of the study, and most particularly the recruitment of participants. This discussion then leads into the greater unpacking of the three subthemes of acceptability that I reported in Chapter 3, namely: (a) *Joining*; (b) *Working Structure and Process*; and (c) *Reluctant Leave Taking with Benefits*. I also discuss the zero participant attrition rate, which further supports program's acceptability. Finally, I include a discussion of other factors relevant to MBCT's acceptability, specifically the facilitator's experience with mindfulness, modifications made to the program, and homework practices.

Comments on personal position on mindfulness and recruitment of participants. Mindfulness is a long-held Buddhist practice and a relatively new and

growing area of interest within the fields of psychology and mental health. The English word ‘‘mindfulness’’ has been around for over 300 years, but did not play a serious part in the official discourses of psychology and psychotherapy until around 1990 (Dryden & Still, 2006). Kabat-Zinn (1990) argued that although the concept of mindfulness is drawn primarily from the Buddha's teachings, the practice of mindfulness does not require the practitioner to adopt Buddhism as a worldview.

I was introduced to mindfulness at the age of 13 and began practicing meditations from the age of 14. As I had been raised Christian Orthodox, I approached the practice of mindfulness with caution. I was able to integrate the spiritual vehicles of meditation and body awareness into my personal life. However, based on my background and personal experience with mindfulness and consciousness of its connection with Buddhism, my main concern in advertising this group was that women, especially those who held strong non-Buddhist religious beliefs, might be cautious about exploring the practice. Segal himself expressed his unease about the possible connection between Buddhism and meditation (see Segal et al., 2002). However, I was not able to find any literature addressing participant recruitment and the use of the term mindfulness. I came up with the playful word *Momfulness* by combining the words mothering and mindfulness and my recruitment poster emphasized the empirical evidence of the successful outcomes of MBCT in other groups.

Three subthemes of acceptability. Three subthemes supporting Acceptability of the program emerged in my study: *Joining, Working Structure and Process,* and *Reluctant Leave Taking with Benefits*.

Joining. Three key factors appeared to encourage joining the program: the name of the program, its self-selecting enrolment, and the make-up of the group (i.e., women who were pregnant for the second of more time).

Despite my strong effort to advertise and recruit participants for the study, enrolment was disappointing and the achieved sample size was small (*N*=5). I discuss this matter in greater detail later in the section on limitations of the study. For now however, and before moving onto discussing the three key factors identified as important to joining the program, I want to first draw readers' attention to two points of interest that relate to my preceding discussion on the perception of mindfulness and its possible connection to Buddhism and meditation practice and possibly, to joining or not joining the program.

During the recruitment process one of the participants had asked if this was a religion-focused group. She identified herself as Christian and was worried that the "teachings" in the group would go against her religion. I acknowledged her concerns and explained to her that MBCT practices are isolated from their Buddhist context. I also shared that I am respectful of everyone's beliefs and encouraged her to voice any concerns she had throughout the program.

During the focus group, surprisingly, participants reported that the *program name* "Momfulness" was important and meaningful to them; it might be that the *program name* was important and meaningful in overriding any concerns – conscious or not – that some of the participants may have had around mindfulness "teachings" It is also possible that I attracted women who were appropriately critical and more open-minded than others who met the criteria but were not interested in participating in a mindfulness-

based group. Finally, it is also possible that some potential participants were not opposed to participation in a mindfulness-based program but they were not interested in participating in a study.

Participants were intrigued by the *program name* Momfulness. They associated the name with a sense of acceptance and nonjudgmental environment. The name seemed to suggest that the group would be a place where women could embrace their pregnancy and be the mothers and women they are without expectations for and judgment of their birthing, feeding, and child raising choices. Participant 1 commented that she "wanted to be a part of this Momfulness" and other participants agreed with her. To remind the reader, during the focus group discussion Participant 1 referred to the term Momfulness as the opposite of the phrase "are you mom enough?" which was a tag line of a controversial TIME magazine cover (Schoeler, 2012) published while the group was running.

Participants also spoke about the importance of *self-selecting enrolment*, which was founded on at least three aspects – the non-requirement of having a previous diagnosis to join, a previous experience of difficult postpartum mood, and the motivation to learn coping skills to ostensibly facilitate a different and more positive postpartum experience.

Participants appreciated that they did not need to have been previously diagnosed with PPD in order to be a part of the group, but rather determined for themselves if they met the requirement of having previously experienced a *difficult postpartum mood.* Supporting this finding is that in many previous studies investigating PPD prevention interventions, sample sizes were small (possibly as a result of wanting to avoid

stigmatization; see discussion in Chapter 1) and levels of attrition rates exceeded 50% of the sample (Brugha et al., 2000; Dunn, Hanieh, Roberts, & Powrie, 2012; Stamp et al., 1995). Readers are reminded of Lumley's (2005) finding I reported in Chapter 1 that many women admitted to being depressed but rejected the diagnosis and label of PPD.

An MBCT program designed specifically for multiparous women who *self-select* their participation based on their previous postpartum experience with a *difficult mood* and not a diagnosis, seems to be more acceptable to women as I assessed through focus group data, and this was supported by the fact that there was no attrition even with the small group size. Beyond support of acceptability of the program, these findings suggest clinical implications for accessibility of the MBCT intervention.

Previous experience of difficult postpartum mood, and the motivation to learn coping skills to ostensibly facilitate a different and more positive postpartum experience also played a role in the self-selecting enrolment of my participants. For example, on the WC-DM a number of participants wrote about being motivated to learn coping skills:

> After the last birth my mood shift was unexpected, so I don't feel a great sense of control after what happens this time. I'm hoping I learn skill before the birth that help. The fact that my mood dropped last time makes me feel like it will probably happen again unless I gain more insight into those feelings. That's why I'm here. (Participant 1)

> I guess this is something I would like to learn about how to cope with the worry, because I feel like I "break down" too often and don't know how to deal with the anxiety in a good way. (Participant 4)

> I think I've been more focused on worrying about coping with the C-section recovery, newborn, splitting my time between my 1st child and the baby etc etc, and not as focused on coping with my mood. That's why I'm here. (Participant 5)

Motivation to self-select into the group with an objective to learn coping skills to increase the probability of a new pregnancy and birth to be a more positive experience, is

also evident in a mixed-methods paper recently published by Dunn and colleagues (2012). Specifically, Dunn's group looked at the effects of a MBCT intervention on the psychological distress and wellbeing of pregnant women. Similar to my sample, the mean age of the 10 participants was 35.33 years (*SD*=4.53). Five (50%) of the 10 participants were multiparous, and 9 reported a history of anxiety and/or depression. Qualitative analysis of the interviews, during which women were asked to describe the perceived benefits of the program, revealed that they had 'prior experience or expectations' of emotional difficulties and wanted this pregnancy and birth to be a new, different, and more positive experience.

Group make-up was also important in attracting participants and contributed to the acceptability reported by participants. Group make-up is an important consideration in conducting groups. Group composition affects group dynamics and ultimately their effectiveness (Yalom & Leszcz, 2005). Yalom and Leszez (2005) argue that group composition correlates with group cohesiveness, and that interpersonal compatibility of group members is more important than the therapist's influence in establishing cohesion.

It was important to my participants that the group was composed of other multiparous women rather than first time moms. The implications of this finding is that we (as counsellors and health professionals designing and facilitating groups for pregnant women) pay attention to and recognize the difference in worries about pregnancy and the postpartum period for primiparous and multiparous women; to adapt a program either to run as one group that accommodates both groups of women or to run as single groups for each group of women. Misapplying queries about worries to content areas not relevant to multiparous women, for example, may promote frustration and

further anxiety for multiparous women. Similarly, hearing women speaking about past experiences of *difficult postpartum mood* may be unsettling for women pregnant for the first time.

Interestingly, group mean scores on the Group Relationship subscale of the GSRS supported participants' sensitivity to group make-up as a contributing component of acceptability; for example, in Session 2 the scores on the Group Relationship subscale decreased and this might have been because a new member joined the group. As a group, mean scores on the Group Relationship subscale fell below the lower threshold of 9 in Session 2 (*M*=8.38; *SD*=1.30; range=6.9-9.9) and Session 4 (*M*=8.9; *SD*=0.98; range=7.6-9.8). As with the overall GSRS scores, it is important to note that setting lower thresholds of acceptability at 9/10 is extremely conservative and that if this had been set at 8/10 to indicate an acceptability value of 80%, mean scores would have been consistently above the threshold score.

As I mentioned above, In Session 2 the scores on the Group Relationship subscale might have decreased because a new member joined the group. Although the new participant rated the second session with a score of 9.9 (out of 10) on the GSRS Group Relationship subscale, two other members, who knew her in a professional capacity, scored quite low (6.9 and 7.4). It is possible that they were surprised to see this new member in the group and may have been initially uncomfortable by her out-of-context presence. Their scores on the Group Relationship subscale went up in the following week to 9.4 and 10, respectively.

It is difficult to explain the decrease in mean score on the Group Relationship subscale in Session 4 (*M*=8.9; *SD*=0.98; range=7.6-9.8), which was slightly below the

clinical cut-off of 9. The mean score probably reflected Participant 2's low rating (7.4), which was the lowest score she gave on this subscale throughout the program. It is also important to note that one participant was missing during this session and that it was someone Participant 2 identified with and knew before the start of the program. The absence of this participant might have had an impact on Participant 2's comfort level with the group and consequently on her score on the Group Relationship subscale.

My findings on group make-up further corroborate and reflect the well documented fact that group make-up plays an important role in the success of group-based interventions.

Working Structure and Process. As a second subtheme of Acceptability, *Working Structure and Process* presented as an important piece of the puzzle. The reader is reminded that the structure of the MBCT program was only slightly modified from the MBCT manualized protocol to accommodate the pregnant condition of study participants.

Looking at the findings from the GSRS, as a group, participants reported high levels of satisfaction with the structural goals and topics of each session of the MBCT program. However, group mean scores on the Goals and Topics subscale fell below the cut-off of 9 following Sessions 5 and 7. A possible explanation of this drop is the following.

In Sessions 1 to 4 of the MBCT program, participants are encouraged to explore where their attention wanders to, to use this awareness to bring themselves back to the present, and to use their breath to refocus their attention. In the second half of the program, starting from Session 5, participants are taught to use these skills to prevent

relapse and to cultivate a different relationship to experiences and life more generally. Segal and colleagues (2002) characterized this relationship as one of "acceptance/allowing/letting be". They warn that this relationship is not easy to cultivate and that many participants find "acceptance" a very difficult idea to grasp. Williams and Penman (2011), in their self-help book "Mindfulness: an Eight Week Plan for Finding Peace in a Frantic World", warn that some people who embark on the mindfulness course find acceptance very difficult to understand and practice. They go so far as to acknowledge that "Some will continue repeating the meditations detailed in the previous chapters [chapters describing Sessions 1 to 4] and will, no doubt, receive considerable solace from them. Others may abandon mindfulness altogether" (p. 167). In Session 5, participants are also asked to deliberately bring negative emotions or thoughts to mind and then work with that in the body. Although none of our participants dropped out of the MBCT sessions, my field notes indicate that 3 participants expressed a strong reluctance to the request that they bring to mind a difficult thought. Also noted in my field notes is that Participant 2 reported that when she was asked to become aware of what was happening in her body, she found herself in a "place where she did not want to be." This shift in focus to acceptance of deliberately evoked negative emotions or thoughts may have been the reason for the low scores that participants recorded on the Goals and Topics subscale following Session 5.

Session 7 focuses on 3 ideas: (a) taking care of yourself; (b) noticing the links between activity and moods; and (c) identifying the relapse signatures. According to my field notes, during Session 7 participants did not make any comments about the goals and topics of this session. However, at the beginning of Session 8 during check-in, 3

participants talked about the feelings of guilt that came along with the discussion of self-care the week before. This may be one reason for low scores on the Goals and Topics subscale following Session 7. It was also most interesting to hear and realize the resonance this topic in Session 7 had as expressed through animated and prolific conversation in the focus group. It is certainly evident that at least one of Session 7's goals was achieved! As illustrated by the *self-caring* subtheme of Effectiveness discussed later, participants appreciated the message about "taking care of yourself," but it may be a topic that initially brings up uncomfortable feelings for some participants. It is important to note that satisfaction with each MBCT session in a program has not previously been studied.

The *Working Structure and Process* subtheme of Acceptability builds from *connection/check-in*, *mindfulness practice in group*, and *group flexibility* as three core aspects. The inclusion of a weekly check-in appeared critical to the building of within-group connection. The *connection/check-in* component reflected the high priority that group members placed on establishing — and from session-to-session, re-establishing — a sense of connection through shared experience interaction with other participants. In the focus group most particularly and anecdotally across the 8 weeks of the program, participants discussed the support they received from fellow program participants.

A core contributor to connection and support was related to the check-in part of the group. Check-in was an important, positive part of the group. It was important because it facilitated and set the tone for connection, seemed to enforce the group working dynamics, and had a therapeutic effect on some members of the group. Check-ins provided participants with opportunities to talk with each other about their pregnancy

experiences, particularly the common ups and downs associated with second and third pregnancies. Check-ins allowed participants the opportunity to both listen and talk, and therefore also provided participants validation and helped them to connect and realize that they were not alone in their struggles.

Yalom & Leszcz (2005) argue that groups have the power to normalize mental health issues. Interventions in a group format help to normalize individuals' negative experiences and decrease their perception of stigmatization (Yalom & Leszcz, 2005). Yalom and Leszcz suggest that realizing that one's negative experiences are not unique or rare, but also experienced by others, can trigger an immense sense of relief and result in both affective and cognitive modifications characterized by a reduction in anxiety, embarrassment, shame, and/or depressive symptoms. Unfortunately the design of my study does not allow me to parse out the effects of the MBCT techniques (e.g., mindfulness practice) from the effects of the group-specific factors such as group processes.

Interestingly, I attempted to shorten the check-in in Session 2 to ensure that I was following protocol as per the MBCT manual of check-in time being no more than 2 to 5 minutes. At the end of the session Participant 5 brought it to my attention that she enjoyed the longer check-in we had had at the start of Session 1. Other participants strongly agreed with her. Consequently, I considered the group's request and allowed for longer check-ins from Session 3 on. From then on, check-in's ranged from 15 to 30 minutes.

Previous studies have validated this idea of connection and relationship being an important basis of prenatal support and psychoeducation groups, and as key to group

success (Ickovics et al., 2007). Researchers reporting findings from studies on the impact of mindfulness-based programs (including MBCT specifically) have noted and described similar findings about the roles of connection and felt-support to program outcomes. Ma (2002) analyzed the accounts of 41 participants 12 months after the end of MBCT. One of the themes that emerged in their analysis was support from the group. In Dunn and colleagues' (2012) study on effects of a MBCT intervention on women's psychological distress and well-being in the perinatal period, participants talked about the importance of shared experiences, referring to the value of participating in the group and forming relationships with the other participants. Further, Dobkin (2008) explored potential mechanisms underlying changes in an MBSR group for women who had finished medical treatment for breast cancer and also found that participants felt that the group experience was an important aspect of the program. Mackenzie, Carlson, Munoz, and Speca (2007) investigated the effects of MBSR by interviewing 9 cancer patients who had participated in a MBSR group and conducting a Focus Group involving 7 of the 9 cancer patients and 3 MBSR facilitators. Shared experience, which referred to the connection and interaction between group members, was also one of the themes that emerged in the study. All 9 interview participants in the Mckenzie group's (2007) study conveyed that it was extremely important to be in a room full of cancer survivors.

It is possible that the connection and relationship facilitated by the MBCT program buffered the isolation, degree or both of individual perceptions of pregnancy and motherhood stressors, and worry about anticipated recurrence of *difficult postpartum mood*; provided support to help participants handle daily demands; and helped them to manage individual mood and affective responses. My finding that *connection* was a core

process aspect for participants corroborates and supports the existing literature that highlights the importance of social support networks for this population (Small et al., 2003; Zelkowitz, 1996). [And, for new mothers, social support may be a key factor that protects women from PMD (Gjerdingen, Froberg, & Fontaine, 1991)]. My finding that a *check-in* of greater duration than prescribed in the MBCT protocol was a core structural aspect of the program's acceptability, has implications for both future studies and for counselling applications of MBCT involving this population. My clinical suggestion is to extend the duration of the check-in to allow women to form closer connections with each other.

That said, MBCT is a complex intervention that targets specific theory-based mechanisms as well as non-specific mechanisms such as group support common to many effective group-based psychosocial interventions. As previously stated, the design of my study does not allow me to conclude whether the changes assessed by my measures have a basis in specific MBCT techniques (e.g., mindfulness practice) and their theory-based targets, or MBCT non-specific factors such as group processes. More research into how these specific and non-specific factors interact in complex group interventions like MBCT is required to tease these factors apart.

Mindfulness practice in a group was a particularly constructive structural aspect of the MBCT program. The group provided the space for participants to stabilize their meditation practice, one of the main tasks of MBCT. All five (100%) participants spoke about and supported the benefit of first learning and practicing mindfulness in a group setting. This finding is corroborated by at least one other study. The theme of shared experience that emerged in Mackenzie and group's (2007) study not only referred to the

importance of sharing an identity as a cancer survivor, but also to the relationship with the other group members in terms of their collective meditation practice in a group setting.

Flexibility within the delivery of the program and the modification of exercises was a notable structural and process component of acceptability. Overall, as measured by the Approach and Method subscale of the GSRS, group participants were highly satisfied with the overall structure of the modified MBCT program both within and across its 8 sessions. In addition, the quantitative data collected on the Session Experience subscale of the GSRS points to participants' views on the overall acceptability of each session and the program as a whole.

Reluctant leave taking with benefits. When reflecting on and discussing their overall experience of participation in the program, participants indirectly inferred the acceptability of the program by expressing sadness about its ending and a sense of loss of community and support that left them feeling reluctant to leave the group. Despite their reluctance and sense of loss, participants discussed and described either implementing or considering implementing mindfulness techniques and practice with their toddlers at home; they considered this an unexpected benefit of the program for their parenting.

During the member checking process two (40%) participants did not agree with the statement: "I felt a sense of loss of support and community following the final group. I wanted to continue meeting with my group members after the group was over." It is possible that these two women misinterpreted the statement. That is, that they did not respond to what they felt on the last day of the program (i.e. concerned and sad about the potential loss of community and support), but rather were speaking about how they felt at

the moment when they were already comforted by the fact that they are staying in touch with group members by email.

I also realize that this statement written for the member checking process was poorly formulated. It asked women to comment on two different questions. First, it asked women to comment on the statement "I felt a sense of loss of support and community following the final group." Second, it asked for a comment on the statment "I wanted to continue meeting with my group members after the group was over." Women were only able to provided a single answer (agree or disagree) for the statement. However, a participant might have strongly agreed with the first statement but not at all with the second statement. To remind the reader, the two (40%) participants who did not agree with the statement stated:

> The group continues to connect via email regularly and eventually, we will meet again in person. (Participant 1)
>
> We made connections thanks to email and have been in touch, it is hard to maintain weekly meetings with new babies, so knowing that we can connect online is valuable. (Participant 2)

Two out of three participants who agreed with the poorly formulated member-checking statement elaborated:

> We have kept in touch frequently via email and still hope to get together after two more babies are born. (Participant 4)
>
> We are still in touch via email. Groups have lives, and there is always some grieving when they end, in my experience. (Participant 5)

Based on these comments it seems that because participants were continuing to connect with and support each other via e-mail and hoped to meet again in person in the future, the sense of support and community facilitated by the group had been an important component of the program's process for them. Finucane and Mercer's (2006)

findings highlighted the importance of ongoing support for participants beyond the end of the group. Thus, follow-up sessions need to be considered by clinicians who run MBCT groups for this population.

One of the most interesting and rewarding findings of these analyses for me is the participants' willingness to share the practices with their young children. The aspect of *unexpected benefits for parenting* that emerged inductively from within the data of the overarching a priori theme of Acceptability is further evidence of the acceptability of the MBCT program for pregnant women.

Based on the conservative definition of dropout as being less than a minimum attendance rate of 62.5%, my study had a 0% dropout rate with an average attendance rate of 85% (M=6.8; SD=1.1; range=5.0–8.0). To remind the reader, 1 (20%) participant attended all 8 (100%) sessions, 3 (60%) participants attended 7 (87.5%) sessions, and the participant who missed 3 (37.5%) sessions due to giving birth, attended 5(62.5%) sessions. This last participant who attended 5 sessions, came back to the program after giving birth and missing three sessions. A dropout rate of zero across a relatively lengthy program (8 weeks plus one extra week for focus group attendance) is clearly a powerful endorsement of acceptability. Attendance in the program was similar to those from a review of RCTs (Fjorback et al., 2011), which concluded that most (75–97%) patients randomized to MBCT and MBSR interventions attended at least 4 or 5 of the 8 sessions.

Segal and colleagues (2002) designed duration of the MBCT program to be long enough that participants could learn the principles of mindfulness and mindfulness practice. However, stage of pregnancy — specifically third trimester — might exclude a population of pregnant women from participating in all eight sessions. Therefore an

abbreviated versions of the program needs to be considered or women should be allowed to re-join the program after they have given birth. In this group, the participant who returned after giving birth was very thankful for being allowed to come back with her infant. The group was very accepting and considered it a "treat" to see the new infant and their group member back. Women thought that practicing mindfulness with the infant in the room offered an opportunity to practice mindfulness in a "real world" scenario where interruptions are common.

As already mentioned, I made several adjustments and modifications to the program to accommodate pregnant participants, but I was not so flexible as to stray too far from MBCT protocol; it was of utmost importance to me to maintain the integrity of the MBCT program. Because we covered all the topics suggested in the manual and practiced all the meditations listed in the manual, although some of them were shortened, I am confident that I was able to maintain the integrity of the MBCT program.

Accommodations were primarily made for the purpose of physical comfort, facilitating movement constraints brought about by pregnancy, and the expressed need of the group to connect. Some meditations were reduced from 40 minutes to 20-30 minutes and the participants were allowed to spend more time during the group to check in. Again, this was to accommodate participants' requests.

Segal and group (2002) insist that mindfulness activities and exercises are best learned through intensive practice and exposure. However, some practice and exposure had to be sacrificed to create a reasonably physically comfortable experience for the participants. Interestingly, Finucane and Mercer (2006) shortened some of the longer meditations and found no evidence that the shortened version of the MBCT program is

less effective than the original format. This shortened form of MBCT was both acceptable and beneficial to the majority of patients that suffered from active depression and anxiety.

At the end of the program immediately after Session 8, participants said how much they appreciated the modifications made to the group and could not think of any other possible program modifications to better accommodate them. When, in the focus group, I listed all the modifications that were made to the program across the 8 weeks, Participant 5 commented: “I think all the ones you mentioned I was like yes, yes, yes.” In the focus group when I once again asked participants “what do you feel like you still would like to see to be different?” no suggestions were arrived at and Participant 3 concluded: “I don’t know if it can be different.”

One aspect of MBCT that was not practical for participants who had one or more children in their care at home was the amount of homework outlined by the MBCT manual. Homework takes from 30 minutes to an hour a day, is to be done six days a week, for eight weeks, and involves tasks such as listening to CDs or performing brief exercises. Homework assignments were an important component of the study, but were made optional to ensure that participants were not strained by them. All five (100%) participants chose to complete some homework and practice formal and informal meditations outside of group sessions; however, the frequency and duration of these varied significantly. At some point during the intervention, all five (100%) participants commented that the home practice competed with the time demands of their busy family lives and all five (100%) participants admitted it was difficult completing all the homework. All five (100%) participants talked about doing informal mindfulness practices but only two participants reported consistent engagement in long formal sitting

meditations. During the focus group one participant expressed a preference for shorter meditation. She said the following:

> I definitely found value in the shorter meditations. The longer ones you just lost me. I was good for the first while and then I just could not keep track. The last half, honestly, I was just trying not to fall asleep. SO I think for moms, we are tired, a long meditation is for me it's a lot more difficult then the short ones. (Participant 3)

Two other participants endorsed her words with empathetic nodding and "mhm". However, this was contradicted by the other two participants who preferred the longer mediations. One participant said the following while another one endorsed the above speaker's opinion with a "yes".

> On the flip side. I liked to do the longer ones here [in the group]. I could do the longer ones here, but I could not do them at home very successfully. So this is the chance to do the longer ones and have more restful zoning out thinking. Once I get home it's out of the door. 3 minute breathing, yes. 30 minute, no. I liked doing the long ones here and knowing that I get to do the longer ones here with someone instructing me. At home I can't find the time to do that. (Participant 2)

Difficulty completing homework for the study sample was understandable given the sample's family responsibilities. One possible way of addressing low homework compliance may be to flexibly reduce the amount assigned per session in order to facilitate motivation and the experience of successful homework completion. However, it is important for facilitators to keep in mind and remind participants that the amount of time spent in home meditation practice may have an important mediating effect on what they get out from the program (i.e., the outcome measures). For example, Carmody and Baer (2008) found that increases in self-reported mindfulness mediated the relationship between the extent of home mindfulness practice (in total minutes over the 8-week course) and improvements in psychological health. That is, the more the participants practiced at home, the more their mindfulness skills improved and the more their

psychological symptoms were reduced.

I did not collect data on the time spent in home practice and therefore was not able to evaluate the data for the potential mediating effect of this variable on outcome measures. An analysis of the data on participant practice time and higher or lower levels of obtained benefits would have been an interesting component to add to my study and will be a meaningful subject of exploration for future studies further exploring MBCT's acceptability and effectiveness.

To summarize, both the quantitative and qualitative findings support in general the acceptability of the modified MBCT program for pregnant women with a past history of *difficult mood* in the first year following the birth of a child. Participants appreciated the modifications made to accommodate their pregnant condition. These modifications need to be considered by facilitators who plan to offer MBCT programs to this population. Finally, given that the women who participated in my study were pregnant with their second or third child and had one or more children in their care, the amount of homework outlined by the MBCT manual was not practical for these pregnant women with a history of *difficult mood* post partum.

Effectiveness of MBCT for Multiparous Pregnant Women

Research questions 3, 4, and 6 regarded the effectiveness of the MBCT intervention for this group. Overall, quantitative findings support the program's effectiveness. In summary, the quantitative and qualitative findings suggest that pregnant women with a history of *difficult postpartum mood* who attended at least 5 of 8 MBCT sessions of a modified MBCT program experienced a significant decrease in anxiety as indicated by the anxiety subscale of the HADS. They also experienced a positive shift in

their ability to manage contemporaneous emotions and moods and felt more prepared for and confident about managing possible (and in some cases, anticipated) future *difficult postpartum mood*. Qualitative findings suggest that participants gained a range of benefits from the program, some of which might have served as mechanisms and others as mediators of the measured outcomes. These benefits are described by the five identified subthemes that emerged from within the data supporting the overarching theme of effectiveness: (a) *self-caring*; (b) *normalizing and relieving*; (c) *feeling prepared*; (d) *embracing pregnancy*, and; (e) *practical and portable coping*.

Research Question 3. *Do pregnant women who previously experienced difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant gain measurable benefits from participating in an 8-week MBCT program as assessed between Session 1 and Session 8 on ORS, through focus group conversation, field notes and other qualitatively collected data?*

To assess effectiveness I assessed ORS total scores and subscales (focusing on three areas of functioning: *individually*; *interpersonally*; and *socially*, as well as general evaluation of daily functioning over the last week) from session to session and from Session 1 to Session 8 for increases potentially suggesting improvement in participants' wellbeing.

Overall, participants mean composite ORS Total score was below the clinical cut-off at T1. According to Miller and Duncan (2004), this indicates that participants' responded to the items like people who were in therapy and wanting for some aspect of their life to be different. Effectiveness of the program in terms of ORS scores is

demonstrated in the finding of a statistically significant 31.2% increase in the ORS composite Total Score from Session 1 to Session 8. Indeed, from Session 2 on, the group's mean composite ORS Total scores shifted to and remained above the clinical cut-off. This is taken to mean that participants were now responding to the items more like people who were not in therapy and who say that things in their life are on track and little change needs to take place. Although not statistically significant, the increase in participants' overall wellbeing from Session 1 to Session 8, as measured by the ORS overall wellbeing subscale, was clinically meaningful. My finding therefore adds to previous research suggesting that the practice of mindfulness techniques is associated with improved prenatal and postnatal wellbeing (Beddoe et al., 2009; Dimidjian & Goodman, 2009; Duncan & Bardacke, 2010; Vieten & Astin, 2008). These findings are consistent with data from the Nyklicek and Kuijpers (2008) study, which indicates that mindfulness-based interventions can improve psychological wellbeing in the general population samples of men and women with symptoms of distress.

It is important to note that the average ORS score (19.5) at Session 1 is similar to the figure reported for the general mental health population (19.6; Miller et al., 2003). Miller's group (2003) reports that a general mental health sample with an average ORS intake score of 19.6 show little or no gain in outcome after the first handful of sessions. However, with the exception of a statistically non-significant drop in ORS scores following Session 5 as self-reported on the ORS before the start of Session 6, this sample showed a consistent improvement in outcomes. Two qualitative findings relate to this increase in individual wellbeing across the 8 weeks, namely the subthemes *self-caring*, and the experience of MBCT as being *normalizing and relieving*.

Participants thought the program's focus on *self-caring* was particularly helpful. This finding is similar to those from qualitative studies carried out by other authors. For example, Shapiro's group (2005) asked health professionals in their MBSR program: "What effects did the MBSR program have on your life?'' Participants described a similar theme of *self-care*. For instance, a participant stated: "The most meaningful thing to me was looking into myself and becoming aware of just how important I am to me." My finding can also be compared to that of Allen, Bromley, Kuyken and Sonnenberg (2009). These researchers examined participants' representations of their experience of MBCT and its value as a relapse-prevention technique for recurrent depression. One of the overarching themes identified in their study was v*aluing self*: recognizing and meeting one's own needs.

To remind the reader, mindfulness skills are taught as a means to notice distressing thoughts and feelings, hold such experiences in one's awareness, and cultivate acceptance and self-compassion in order to break up associative networks and offset the risk of relapse (Segal et al., 2002). The dimension of mindfulness that involves meeting distressing thoughts and feelings with kindness and empathy is woven into mindfulness-based applications and is thought to be crucial to the change process (Feldman & Kuyken, 2011). Self-care may be one of the processes that cultivates acceptance and self compassion. Dobkin (2008) reports that MBSR participants asked to describe their experiences with MBSR largely spoke about their journey towards acceptance, which occurred through two processes: understanding that things are not necessarily how one wishes them to be, and taking care of the self.

The finding of the subtheme of *normalizing and relieving* from within the qualitative data supporting effectiveness is in agreement with Finucane and Mercer's (2006) finding that being in a group was an important normalizing and validating experience for all participants. Allen and colleagues (2009) examined participants' representations of their experience of MBCT and its value as a relapse-prevention program for recurrent depression. One of the over-arching themes identified in their study was *de-stigmatization*, which was described as feeling understood, cared for, identifying with others, and revising their views of themselves. In Allen and colleagues' study participants described the group as a place of care and support and expressed that sharing experiences with others helped them feeling less abnormal. Another study that I reviewed for the present paper, noted that groups were of particular value to postpartum women with depression because they normalized symptoms and connected women with others who had similar difficulties (Scrandis, 2005).

The subtheme of *normalizing and relieving* that emerged in my study contributes to the literature on the effectiveness of MBCT for this population by adding to existing findings to the same effect. It is important for this population to have their experience normalized and to feel destigmatized because we know that stigmatization of PPD hinders women from seeking help (Klier et al., 2001) and results in a refusal of treatment (Dennis & Chung-Lee, 2006). Shame and a fear of being labeled mentally ill as well as social stigma of being labeled an "unhappy mother" is an important obstacle to diagnosis and treatment of PMD (Lumley, 2005). Vieten and Astin's (2008) recruitment experience suggests that pregnant women are reluctant to identify themselves as depressed or anxious, even in the past. Thus destigmatization of PMD may lead to more accurate

diagnosis and successful treatment. Realizing that one's negative experiences are not unique or rare, but also experienced by others, can facilitate treatment seeking behaviors and increase success of postpartum interventions.

Although not statistically significant, a clinically meaningful increase in interpersonal wellbeing from Session 1 to Session 8 and a statistically significant and clinically meaningful increase in social wellbeing from Session 1 to Session 8, further support the program's effectiveness. These findings are also supported by the results of Allen and his group's (2009) study. They reported that MBCT resulted in a number of positive changes for their participants, including greater emotional closeness with friends and family, better communication, and increased empathy.

Research Question 4. *Do pregnant women who previously experienced difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant show a measurable decrease in depressive and anxious symptomology from T1 to T2 (following completion of the MBCT program) as measured by the HADS, through focus group conversation, field notes and other qualitatively collected data?*

Quantitative analysis showed a statistically significant and clinically meaningful 16.2% decrease in anxiety. It is an important finding because high levels of anxiety during pregnancy is one of the risk factors for developing PPD (Beck, 2001; Heron et al., 2004) and MBCT seems to alleviate anxiety in this population. This finding is also consistent with other empirical findings indicating that mindfulness-based interventions can alleviate anxiety in a variety of adult populations (Segal et al., 2002).

Although the 9.5% decrease in depression was not statistically significant, it is clinically meaningful. It is possible that participants in my study were drawn to the study because of current levels of anxiety and not depression. At T1, 4 participants scored above the clinical cut-off of 11 on the HADA subscale meaning that these 4 participants fell within the *probable caseness* category of anxiety as measured by the HADS. On the other hand, 4 participants scored within the *normal* range (0–7) and only one (with a score of 8) fell within *borderline caseness* (8–10) on the HADD subscale at T1. Therefore, the finding of no significant change in depression is understandable and does not negate other findings of the well documented effects of MBCT in the lowering of depression (Segal et al., 2002).

As one important goal in working with this population, a decrease in depression is meaningful because of the negative effects of mother's depression on the infant. Specifically, research suggests that infants born to mothers with depression are more likely to have lower Apgar scores and a lower birth weight than infants born to non-depressed mothers (Hellin & Waller, 1992), are twice more likely to be admitted to neonatal intensive care unit (Chung et al., 2001), are fussier (Wurmser et al., 2006) and it is more likely that they will fail to thrive (Drewett et al., 2004). While my participants' scores on the HADD subscale decreased, because scores were not in the clinical range (11-21) at T1 (M=6.00; SD=2.00; range =3-8), I am not able to comment on whether the MBCT program would be instrumental in lowering scores in participants with prenatal depression.

Focus group data suggest that when the group was finished, participants were *feeling prepared* to manage both current and future mood states. MBCT helped them

generally to feel more prepared to cope with current emotions and moods as well as to manage should they re-experience a *difficult mood* following the birth of the expected infant. This finding is also in line with other research findings. Specifically, Ma (2002) analyzed the accounts of 41 people 12 months after the completing an MBCT program. One of the themes that emerged in their analysis was a feeling of being empowered and confident. Participants in the Allen group's (2009) study also spoke of acquiring tools that enabled them to avert their depressive symptoms or limit their progression. Allen and his group (2009) also report that for many participants in their study, having the tools to cope enhanced their confidence about handling depression-related thoughts and feelings better in the future. Finally, as a direct result of the mindfulness based intervention, 63% participants (*n*=10) in the Beddoe et al. (2009) study, reported feeling more hopeful and confident and having the ability to appropriately handle stressful situations.

It is important to briefly mention two other relevant findings in my study, discussed in a greater detail below. First, anticipatory worry about *difficult postpartum mood*, as measured by W-DM subscale, decreased significantly from T1 to T2. Second, as a group, participants' perceived confidence about coping with *difficult postpartum mood* as measured on the C-DM subscale of the WC-DM improved in a clinically meaningful way from T1 to T2. A post-hoc review of the written responses on the C-DM subscale revealed at T2, participants attributed some of their confidence to cope with potential *difficult postpartum mood* to mindfulness skills they had gained from MBCT. For example, one participant made the following comment on the C-DM questionnaire:

> I worry because I've been there. I guess I'm not 4 (a lot) worried because this time I'm more prepared to recognize the symptoms and seek help. I also now have some tools and coping skills to deal with my thoughts and feelings... I am more

> than "a little" sure of myself, though, because I am set up for success with the mindfulness tools that I have. Participant 3

The post-hoc review of the written responses on the C-DM subscale and this quote suggests that it is possible that aquiring a repertoire of coping skills and *feeling prepared* for managing both current and future mood states is sufficient to lower both current anxiety as measured by the HADS and worry about coping with *possible difficult postpartum mood* after the birth of the infant as measured by W-DM.

Whether current *difficult mood* was related to anxiety or depression, or to some combination of the two for participants in the study, they spoke of *embracing pregnancy* as an outcome of participating in the modified MBCT program and that this had helped them to improve their mood. Embracing a second or third pregnancy seemed to be a big factor for these participants with a history of *difficult postpartum mood*. The theme of embracing pregnancy may reflect acceptance as an attitudinal component in the operational definition of mindfulness (Kabat- Zinn, 1990; Shapiro et al., 2006). Shapiro's group (2006) argued that persons can learn to attend to their own internal and external experiences, without evaluation or interpretation, and can practice acceptance even when what is occurring in the field of experience is contrary to deeply held wishes or expectations. The finding of embracing pregnancy may also reflect the theme of acceptance in other studies that have explored mindfulness interventions. For example, women who had finished medical treatment for breast cancer in Dobkin's (2008) study, emphasized their journey towards acceptance in their description of their experiences with MBSR.

When I began my research, my study was the first I knew that would be applying MBCT to multiparous pregnant women with a history of *difficult postpartum mood* and

evaluating its effects on current levels of depression and anxiety. However, a new study by Dunn and colleagues published in 2012 documented the effects of an 8-week MBCT group in pregnant women. My finding on acceptance seems to be in line with that Dunn and colleague's findings (2012). Specifically, when women in the Dunn group's study were asked to describe the perceived benefits of the mindfulness skills they had learned, among other things, they identified 'acceptance'. This referred to feeling more able to let go of the struggle with how they would like things to be, to accept things as they are, and "embracing the present", which meant being fully connected to the present moment. The theme of "embracing" and "accepting" or "coming to terms" with life's circumstances is evident in other studies that explore participants' accounts of MBCT (Mason & Hargreaves, 2001).

It is interesting that in my participants' accounts, the changes they experienced with respect to *self-caring*, *feeling prepared,* and *embracing their pregnancy* have a basis in both specific MBCT techniques (e.g., the mindfulness practice) and non-specific factors (e.g., group processes). The design of this research does not allow me to comment on whether these processes operate independently of one another or are mutually reinforcing. I would suggest the latter but that the relationship is not simply an additive one. It is possible that there is a complex interaction of specific and non-specific factors within the experience of MBCT that underlies its effects. Future research investigating how these MBCT specific and non-specific factors interact in MBCT intervention would be worthwhile.

Research Question 5. *For pregnant women who previously experienced difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed, or other distressing*

emotion) for at least 2 consecutive weeks within the first year following the delivery of a live infant, does participation in an 8-week MBCT program result in a measurable change in (a) self-report anticipatory worry about the recurrence of difficult mood following the birth of the expected infant, and (b) self-report on confidence to cope with difficult mood should it recur following the birth of the expected infant as measured with the WC-DM scale, through focus group conversation, field notes and other qualitatively collected data?

Anticipatory worry about *difficult postpartum mood* decreased significantly from T1 to T2. This finding is particularly exciting because we know that high levels of anxiety during pregnancy (Beck, 2001; Heron et al., 2004) is one of the risk factors for developing PPD. More specifically, Austin et al. (2007) demonstrated the relationship between the increase in risk of PPD as a function of increasing levels of self-reported worry during pregnancy. Research suggests that psychological stress and anxiety during the prenatal period contribute directly or indirectly to an increased risk of spontaneous abortion, pre-eclampsia, and higher rates of surgical deliveries (Bonari et al., 2004) and preterm deliveries (Hellin & Waller, 1992). If MBCT intervention results in decreased worry about *difficult postpartum mood* it may also decrease the risk of PPD as well as contribute to decreasing other health risks to mothers and infants.

I wondered what in particular it was about the possibility of experiencing a *difficult postpartum mood* that participants reported worrying about before the intervention? After reviewing the written responses on the W-DM subscale I found that before the intervention, participants worried about (a) shifts in mood after the delivery of their infant; (b) not being able to recognize the dangerous symptoms of a difficult mood, and; (c) being

able to bond with the infant. More generally beyond the possibility of *difficult postpartum mood* recurrence, participants had reported feeling worried about the birth process, nursing, and managing the adjustment to motherhood with their other child/children. For example, one participant listed a range of concerns:

> I'm concerned about sleep deprivation, nursing, recovery time from my C-section, finances, sleep arrangements in our tiny condo, relationship stress, dealing with family, wanting/accepting help. A lot of different types of worries, and different stresses. I'm having a hard time sleeping, falling asleep or staying asleep, my mind is hard to shut off sometimes. So I find myself worrying or just thinking about the potential challenges in the future, rather than dreaming about the joys. I think I've been more focused on worrying about coping with the C-section recovery, newborn, splitting my time between my 1st child and the baby etc., etc., and not as focused on coping with my mood. I know I'll get through it, I did last time. But it was really hard. More skills would help. (Participant 5)

All of the participants attributed their worry about experiencing a *difficult postpartum mood* to their previous experiences of a difficult mood. For instance:

> After the last birth my mood shift was unexpected, so I don't feel a great sense of control after what happens this time. The fact that my mood dropped last time makes me feel like it will probably happen again unless I gain more insight into those feelings. (Participant 1)

> I struggled with mood after the birth of my son and was not able to enjoy him for the first one and a half years. Everyone around me was in denial, and I did not get the support I needed. People kept telling me my feelings were normal, even though I knew they were not. (Participant 3)

> I am worried that I will experience the same overwhelming out-of-control, down feelings I had after my daughter was born, and that the feelings will make me unable to function such that I become a burden to other people (my husband, friends, family) or such that it is bad for my older daughter. (Participant 4)

> It [[3]difficult mood] happened last time so I am worried it will happen again. (Participant 5)

Following the completion of the program, Participant's 1 (in her first trimester at the start of the group) and Participants' 3 (in second trimester at the start of the group) ratings

[3] Brackets contain author's description rather than transcriptions

dropped from a rating of 4 to 3 (out of a maximum rating of 5, where 5 = *almost overwhelming*), indicating that their worry about possibility of *difficult postpartum mood* lessened. They expanded on their continuing worry at T2 about the possibility of a *difficult mood* after the birth of their infant:

> I feel like this because it happened last time, it could happen again. It does not feel like a unrealistic possibility. Learning MBCT skills and reconnecting with a meditation practice gives me hope, though. (Participant 1)

> I worry often about having anxiety and/or depression again and not being able to bond with the baby. I worry about how my mood will affect my other children and relationship with my spouse. (Participant 3)

Decrease in worry about experiencing a *difficult postpartum mood* was greatest for Participant 5 (from a rating of 4 to 2) who was in her third trimester at the start of the program. This is in line with findings from Beddoe et al. (2009) who investigated the effects of mindfulness-based yoga during pregnancy on maternal psychological and physical distress. Beddoe et al. found that their intervention had differential effects for participants depending on what trimester of pregnancy they were in when they entered the program. Specifically, perceived stress and trait anxiety seemed to hold more strongly for participants in their 3rd trimester compared to those in their 2nd trimesters.

Interestingly, after the intervention participants did not mention worries about not being able to recognize the dangerous symptoms of depression, being able to bond with the infant, and managing the adjustment to motherhood with another child/other children in the household. The design of this research does not allow me to comment on whether, at T2, women did not mention worries about not being able to recognize the dangerous symptoms of depression because following their participation in the program they were better able to identify these symptoms. But one participant's comments on the WC-DM at

T1 and T2 suggest that the program facilitated learning about the symptoms of PPD. At T1 she stated:

> I am worried that I won't recognize the depression again. From past experience I am worried people will dismiss my symptoms. (Participant 3)

Interestingly at T2 she said:

> I worry because I've been there. I guess I'm not 4 (a lot) worried because this time I'm more prepared (and those around me are more prepared) to recognize the symptoms and seek help. I also now have some tools and coping skills to deal with my thoughts and feelings. (Participant 3)

This is an interesting finding because previous research suggests that the general public's lack of knowledge about its symptoms (Dennis & Chung-Lee, 2006) and low rates of treatment seeking (Klier et al., 2001), are barriers to successful identification and treatment of PPD. It is possible that women's increased ability to recognize the dangerous symptoms of depression may also increase help seeking behaviour in case they do experience difficult postpartum mood. However, this needs further investigation.

It is also important to mention that before the intervention two (40%) participants mentioned worries about having difficulties with nursing. Research suggests prenatal expectations (Alexander & Higgins, 1993) and infant-related issues (Small et al., 2003) including method of feeding (i.e., breastfeeding or bottle feeding; Marshall, 1993) are important factors for developing depressive symptomatology during the postpartum period. At T1 participants who referred to breastfeeding difficulties said the following:

> Nursing is a concern for me. (Participant 2)

> There are other things I am worried about such as … having the same extreme nursing problems as before. (Participant 5)

These two participants mentioned the same worries about the challenge of nursing after the intervention:

> Breastfeeding is a concern. Will I be able to "do better" the second time? Again, I feel I am trying to get information and support now, before I hit a difficult patch in establishing breastfeeding (Participant 2)
>
> I am a little worried because of my experience after my last birth, however, I am not very worried because I have more resources than I did last time and some experience of what is helpful for me. Eg. Baby groups, socializing with other moms, exercise, therapy, mindfulness skills; and letting go of expectations of perfection (Participant 5).

Although these worries remained, participants' comments seemed to be more hopeful, especially Participant's 5 whose worry about difficult postpartum mood decreased from 4 at T1 to 2 at T2.

Post-hoc correlational analysis showed that participants' anticipatory worry as measured on the W-DM subscale was linked to their current anxiety, which was assessed on the HADA subscale, at T2 but not at T1. In other words, at T2, participants with higher scores on the W-DM scale scored higher on the HADA subscale. Worry about the possibility of re-experiencing *difficult postpartum mood* (as measured by the W-DM subscale) explained more than three quarters (77.4%) of the variability in anxiety measured by the HADA. It is possible that worry about *difficult postpartum mood* recurrence more accurately reflects trait rather than state anxiety. This could explain why as the number of worries women reported worrying about at T1 dropped at T2, the continued worries about postpartum recurrence (and its implications) more strongly linked to anxiety as measured by the HADS. This is only an interpretation of this finding and at this time it is not clear what this means.

As a group, participants' perceived confidence about coping with *difficult postpartum mood* as measured on the C-DM subscale of the WC-DM improved in a clinically meaningful way from T1 to T2. A post-hoc review of the written responses on

the C-DM subscale revealed that before the intervention, participants thought that after giving birth infant they would be able to cope with their worries about a *difficult postpartum mood* because they (a) had social support; (b) had the experience of overcoming *difficult postpartum mood*; and (c) because they were being proactive and open in their desire to learn skills to cope with worry. At T2 therefore, while participants still attributed some of their confidence to cope with potential *difficult postpartum mood* to social support, they all wrote about the potential benefits of mindfulness and other learning they had gained from MBCT as countering current levels of worry.

Mindfulness as a means of *practical and portable coping* also emerged from within the focus group data as a final subtheme of MBCT effectiveness. This subtheme of mindfulness as a practical and portable coping strategy was discussed within the context of everyday life and in terms of managing and coping after the birth of the infant. Participants in Allen and his group's (2009) study also spoke of using meditations-on-the-go if you will, to turn their attention away from negative images and thoughts about their past or future or to help cope with in-the-moment stressful situations such as a entering a crowded room. Allen and his group's participants described meditation as a tool that helped them to manage depression-related thoughts and feelings.

In sum, participants' anticipatory worry about *difficult postpartum mood* decreased significantly from T1 to T2. Although the change in their perceived confidence to cope with *difficult postpartum mood* improved by 16% for the group as a whole, this change was not statistically significant. Qualitative findings from the written comments on the WC-DM as well as from the focus group data provided some support for the effectiveness of MBCT to affect measurable change in pregnant participants' anticipatory

worry about the recurrence of *difficult postpartum mood*, and perceived confidence to cope should this occur.

Taken together, my findings on the effectiveness of MBCT for pregnant women with a history of *difficult postpartum mood* largely parallel well documented benefits in other populations accruing from MBCT such as stress reduction (Astin, 1997; Shapiro et al., 1998; Speca et al., 2000), increased positive affect (Nyklicek & Kuijpers, 2008), and alleviation of anxiety (e.g., Segal et al., 2002) and did not depend on participants taking medication.

Limitations of the Study

First, my study is an exploratory study and the findings need to be treated with some caution. There was no randomization process or waitlist control to compare participants in this population, which limits the conclusions we can draw with respect to causality. Further, there was no long-term follow-up to determine whether the gains made by participants were maintained. My study could not be designed longitudinally because of the time constraints of the Master's degree program, so the findings are limited to the immediate safety, acceptability, and effectiveness of MBCT during pregnancy for women with a history of *difficult postpartum mood*.

While I designed my study for the purposes of exploration and description, and not for piloting it as a "test of the methods and procedures to be used on a larger scale" (Porta, 2008), my study suffers the same limitation of a pilot study, namely that of a small sample size (and the absence of a control group as already stated). Pilot studies are open trial designs and a fundamental part of the research process and constitute an important initial step in exploring a novel intervention. To the degree that the use of

MBCT in the prevention and treatment of prenatal stress and *difficult postpartum mood* is a novel application, and that, to the best of my knowledge, only one published paper on this topic exists, my study explores a novel intervention. As such, the small size and design of my study offers some insight into the safety, acceptability, and effectiveness of the MBCT program but does not allow inferences to be drawn about mechanisms. However, at the initial stages of a novel intervention — or, in my study's case, the initial stages of a novel application of an existing evidence-based intervention — the exploration of the intervention's *safety* takes priority over rigorous experimental design (Bowling, 2007). Finally, it is also important to remind the reader that many previous studies investigating PPD prevention interventions have also had small sample sizes, possibly as a result of potential participants wanting to avoid stigmatization (see discussion in Chapter 1).

Participants were recruited with the help of informational posters and flyers. Announcements about the study were made in the Mothering Touch's monthly electronic letter, on their website, Facebook page, and at prenatal yoga classes. The same information was also mailed and e-mailed to midwifery centers, General Practitioner offices, and parenting stores and posted on local Facebook group pages. I believe that when recruitment is sought by advertising for volunteers it provides a greater chance for higher participation rates, but can affect generalizability of the findings. Advertising and recruitment with the help of posters, information social media, and presentation at certain forums (i.e., prenatal yoga class) might result in a self-selected sample of volunteers. The fact that my five participants volunteered for the study creates selection-related issues with internal validity. The five participants chose freely to volunteer for the study, which

may mean that they experienced more problems with a *difficult postpartum mood* than other multiparous pregnant women and were more motivated to seek out solutions for these struggles. Alternatively, the willingness to volunteer for the study may have meant that participants were less overwhelmed and had more free time to participate in a weekly intervention. Motivation to join the group may have also meant that the intervention proposed was appealing to them because they were more amenable to the concept of mindfulness. These variables were not controlled for in the study, and are therefore a limitation.

Another threat to the internal validity of the study is the difference in participants' stages of pregnancy and the use of the HADS. Stages of pregnancy may have influenced anxiety and depression scores (see for example, Beddoe et al. 2009). For example, Item 8 on the HADD subscale requires respondents to rate the statement: "I feel as if I am slowed down". One participant expressed a concern about the validity of the HADS scale. During the focus group she said:

> I find discordant that momfull friendliness that you guys had and that we all brought to each other with the hospital set scales "do you feel more slowed down" YEAH I feel more slowed down, but I am 38 weeks pregnant! This is not a reflection of you, but I wonder if there is one (scale) more attuned for pregnancy, because I think that in some ways we are going to be evaluated. It's going to be skewed. Just because of the situations. A lot of that is impacted by pregnancy. I wanted to go "yes, but" on a lot of the answers. I wonder if there is a scale for people who are pregnant? I don't want your results to look not as helpful as it actually was. (Participant 5)

During the focus group another participant said:

> So this is the first week when I am feeling the physical toll of the pregnancy. (Participate 3)

This comment suggests that the physiological changes that accompany pregnancy during the period of gestation may have caused some discomfort and influenced the findings.

This is also reflected in the following comment made by a participant during the focus group:

> This week had definitely started to go downhill with my energy and feeling uncomfortable. Yeah. But I'm still riding my bike. I actually feel better when I'm on it. But yeah I'm starting to have trouble with feeling uncomfortable with sleeping and waking up and moaning and being not sure why. (Participant 2)

Consequently, there is some reservation regarding the stability of the HADS factor structure across the period of gestation. This reservation is consistent with Karimova and Martin's (2003) suggestion that the HADS may not be a suitable instrument to screen women for anxiety and depression during early pregnancy. However, only one participant was in Trimester 1 and therefore in "early pregnancy", two were in Trimester 2, and two in Trimester 3 at the start of the program. Furthermore, Karimova and Martin's research clearly contradicts the purpose of HADS, which was designed to specifically exclude symptoms that might arise from somatic aspects of illness such as insomnia and fatigue when measuring depression and anxiety in hospitalized patients with physical health problems (Zigmond & Snaith, 1983). Yet, the HADS is also a well-established instrument for assessing levels of anxiety and depression in pregnant women (e.g., Cederholm et al., 2001; Jomeen & Martin, 2004; Prettyman et al., 1993; Pritchard, 1994; Rowsell et al., 2001; Thapar & Thapar, 1992). This contradiction suggests that further research might be required in order to assess the stability of the HADS factor structure across the period of gestation and to confirm its suitability and reliability to screen for and measure anxiety and depression during pregnancy.

Strengths of the Study

It is clear that the popularity of mindfulness-based approaches is increasing and therefore, that advancing the empirical research of these approaches is important. By definition then, the assessment and evaluation of mindfulness-based approaches for pregnant women is at the pioneering stage. At this initial stage, the assessement and evaluation of MBCT's safety as a novel intervention for the population sample takes priority over rigorous experimental design (Bowling, 2007). Using a mixed-method methodology to design my study lends strength to the exploratory design of the study. Data triangulation and conscientious field note observations are particular strengths of the present study. The 100% completion rate and no dropouts and the finding that participants highly endorsed the acceptability of the program, are two further strengths of the study. As noted earlier, my finding of a high completion rate is in line with other studies. Specifically, a review of RCTs (Fjorback et al., 2011) concluded that most (75–97%) patients randomized to either MBCT or MBSR interventions completed treatment. Thus, my study adds to the growing research on the acceptability of the MBCT program for various populations. Overall, the study provides a reaonable base of support for the safety, acceptability, and effectiveness of MBCT with pregnant multiparous women with a history of postpartum depression and while small, the sample was a community-based sample making transferability of findings more likely.

The study also adds to the theoretical literature supporting the efficacy of MBCT for reducing depression and anxiety in pregnant women who have experienced symptoms of PPD after childbirth. In extending the empirical support for the use of MBCT in this population, my study helps broaden the scope of options available for private practitioners and community-based programs. The study offers several implications for counselling and

provides valuable examples of modifications that were made to meet the population-related needs of participants.

Clinical and Counselling Implications

Because depression can be so severe and extensive, it is important to attend to and prevent its early symptomatology (Horowitz & Garber, 2006). Prevention may be more cost-effective and safe, as well as less distressing, than waiting for early symptoms to develop into clinical depression, and then trying to treat a full depressive episode (Garber et al., 2009). Further, mental health providers can provide MBCT groups for pregnant women in the community.

Overall, I gave participants an opportunity to check-in and connect with other participants in the group. I also broadened Segal and group's (2002) MBCT protocol to cover depression *and* anxiety, to link practices to one or both, and to extend the psychoeducation around depression to include anxiety and stress. The changes made to accomplish this were quite minimal, at least in terms of the mindfulness practices and whiteboard exercises described in the original protocol. The language was elaborated upon in order to describe, not only depression, but also anxiety, stress, and physical discomfort. I would recommend that therapists who conduct such groups would add an extra break; omit the words "dignified posture" from the meditations and use "comfortable position"; include a belly scan during the body scan; encourage participants to lie on their sides or to sit rather than lying down on their backs for meditations; and reduce the time spent in sitting meditations from 40 to 20-30 minutes.

In addition, good practice guidelines for MBCT facilitators include an established and ongoing personal mindfulness meditation practice. As such, training and experience

for mindfulness instructors presents as another practicality: without the requisite experience, mindfulness-based interventions will not be appropriately and effectively facilitated. Consistent with Segal group's (2002) recommendation that MBCT facilitators maintain their own mindfulness practice, it was important that I, as the principal investigator and facilitator of the MBCT group, had a background in mindfulness. My ability to share my honest experiences with meditation was normalizing for the participants, as is evident in this quote from the focus group:

> So it was ok its not just in my head. And I was so inspired. You [Katya, the principal investigator] said that you also feel sleepy. So it was OH! so you can teach this and still struggle. It normalized how I felt or what I did. (Participant 4)

It would have been very difficult for me to respond effectively to participants' questions and comments without my own personal practice. The following participant comment reflects the importance of having my own practice to draw upon and shows how sharing my own mindfulness practice experience with the group helped this participant to develop her own mindfulness skills as well as compassion for herself.

> Well it's funny, I was thinking about that. About the dishes. Doing my dishes mindfully. Because I hate doing my dishes. But I was cleaning the table because the kitchen, the breakfast stuff will sit all day in my house, it will be time to do dinner and that's when we clear the dishes off the table. And sometimes it bugs me. Often times I realize either I do it or I don't do it. It can bug you or you take care of it, or you don't take care of it and choose not to let it bug you. You have some choice here. So I was mindfully cleaning the table and I was thinking of you, Katya. And I was like, "see this is the gift for myself." (Participant 5)

These sentiments speak to good practice guidelines for MBCT facilitators (establishing an ongoing personal mindfulness meditation practice) that are needed for the sustainment of accrued benefits for group participants. This is in line with Segal's group's (2002) adamant demand for program facilitators to have experiential knowledge of mindfulness practice. Overall, the findings from my study are very encouraging and

support the practical delivery of a MBCT therapy program to this population that is safe, acceptable, and apparently, somewhat effective.

Future Areas of Research

Given that rates of depression during pregnancy and the postpartum period are quite high, and that prenatal and postnatal women express strong preferences for nonpharmacological approaches, there is a need for research on nonpharmacological strategies during pregnancy. The findings for MBCT are promising, but future studies require larger samples, longer follow-up periods, and controlled or treatment comparison studies in order to more fully assess its potential benefits as a cost-effective intervention for this population. Further, prenatal MBCT investigation will add to the current knowledge of potentially safe, acceptable, and effective clinical interventions that can improve mother's prenatal, perinatal, and postnatal outcomes.

Further research on the administration of MBCT during pregnancy could contribute to our understanding of how improving the skills needed to cope with difficult mood and decreasing symptoms of depression and anxiety during pregnancy, can influence prenatal, perinatal and postnatal outcomes. As discussed above, future studies can explore whether MBCT training has any effect on the number of stressors as well as their perceived severity.

It is also recommended that future research assess adherence to mindfulness-based techniques as well as the preference for these techniques. I suggest that future researchers adhere to standardized intervention formats with standardized adaptations and standardized measures. This will allow studies to be replicated and meaningful comparisons to be made, which will expand the evidence base. As mentioned above,

further research might be required to assess the stability of the HADS factor structure across the period of gestation, and to confirm its suitability and reliability or to identify and develop a more suitable and reliable measure, to screen for anxiety and depression during pregnancy.

Finally, a stronger inclusion criterion in my study would have described *difficult postpartum mood* as being that which lasted for at least 2 consecutive weeks with an onset during the first year following the delivery of a *healthy* (i.e., not *live)* infant. It is understandable that women who give birth to infants who are compromised in any way (physically, developmentally or other) will be emotionally affected by this. Postpartum mood difficulties of women who give birth to infants with congenital, physical, developmental, or other problems can surely not be purely attributable to postpartum explanations. My participants had all previously given birth to healthy infants meaning (fortunately) that there was no confounder in my findings regarding explanations for previous difficult postpartum mood in my sample. Future studies should consider identifying delivery of a *healthy* infant as part of their inclusion criteria.

Conclusion

The findings from my study clearly suggest that MBCT is a promising intervention for pregnant women with a history of *difficult postpartum mood,* and contribute to and extend both existing nonpharmaceutical, group-based treatments for pregnant women and MBCT literatures. The findings also contribute to the limited literature on preventive approaches for *difficult postpartum mood*, especially in the light of research suggesting low rates of treatment and the negative impact of PMD on women (Beck, 1993; Beeghly et al., 2002; Gabbe et al., 2007; Horowitz & Goodman, 2004;

Horowitz et al., 2001; Josefsson et al., 2001; Josefsson et al., 2002; Stewart, 2005; Zelkowitz, 1996), early mother-infant relationships (Chung et al., 2001; Cogill et al., 1986; Drewett et al., 2004; Fihrer et al., 2009; Goodman, 2007; Gordon et al., 2006; Hellin & Waller, 1992; Hipwell et al., 2000; Murray et al., 1999; Murray, 1992; Pawlby et al., 2008; Stewart, 2005; Wurmser et al., 2006) family (Cogill et al., 1986; Robertson et al., 2004; Stewart, 2005), and society (Weissman et al., 2004).

Given the lack of work done in the evaluation of preventative interventions for multiparous women and of the effectiveness of group interventions for multiparous women, this research begins to address this gap in the literature and contributes to practice options for the prevention and treatment of *difficult postpartum mood* and tentatively, PPD. Finally, given the lack of diagnosis as the major obstacle to the treatment of PPD (Murray et al., 2003; O'Hara & Swain, 1996; Peindl et al., 2004), this research contributes to the limited literature on preventative programs for women who may have experienced *difficult postpartum mood* but who did not meet the DSM-IV diagnostic criteria for major depressive disorder.

While more definitive experimental research in this area is required, my findings do suggest that MBCT should be considered as a possible intervention for this population. The preliminary findings presented in my thesis suggest that MBCT is (a) a safe program for this population; (b) acceptable to pregnant women; and (c) associated with reduced symptoms of depression and anxiety. Now that an initial but reasonable base of support for the safety, acceptability, and effectiveness MBCT for pregnant women with a history of *difficult postpartum mood* has been provided, other researchers can more rigorously gather empirically sound evidence of the efficacy of this intervention.

Table 1: Participants Characteristics

Age (mean, SD)		35.2 (5.2)
Ethnicity	Caucasian	2 (40%)
	Irish	1 (20%)
	Scottish/Irish/Polish	1 (20%)
	English/Norwegian	1 (20%)
First Language	English	5 (100%)
Relationship Status	Married	4 (80%)
	Common Law	1 (20%)
Education	Graduate program training	3 (60%)
	University Degree	2 (40%)
Employment Status	Unemployed	2 (40%)
	Part Time	1 (20%
	Full Time	1 (20%)
	Full-time with medical leave	1 (20%
Number of children	One child	4 (80%)
	Two children	1 (20%)
Religion/spiritual orientation	Christian	2 (40%)
	Roman Catholic	1 (20%)
	Eclectic	1 (20%)
	Vipasanna	1 (20%)
Trimester at the start of the group	1st trimester	1 (20%)
	2nd trimester	2 (40%)
	3rd trimester	2 (40%)
Pregnancy planning	Planned	5 (100%)
Mental Illness History	No	3 (60%)
	Yes	2 (40%)
Previous Mindfulness experience	No	4 (80%)
	Yes	1 (20%)
Mental health help after previous pregnancy	No	3 (60%)
	Yes	2 (40%)
Number (%) of group sessions attended *(M*=6.8; SD=1.1)	7 Sessions	3 (60%)
	8 Sessions	1 (20%)
	5 Sessions	1 (20%)

Table 2
Outcome Rating Scale[1]

	Session 1				Session 8				
	n	Mean	SD	Range	*n*	Mean	SD	Range	Statistics	% Change
Composite Total Score	5	19.5	5.69	13.6-26.6	5	32.00	4.96	23.6-36.4	t (4) = -3.03, p = 0.04*, d =-2.40	31.3% increase
Individual	5	5.18	1.79	3.2-7.6	5	8.1	1.66	6.2-10	t (4) = -2.48, p = 0.07, d =-1.69	29.2% increase
Interpersonal	5	5.10	1.48	3.7-7.1	5	6.96	2.46	2.6-8.5	t (4) = -1.12, p = 0.33, d =-2.46	18.6% increase
Social Wellbeing	5	4.36	1.84	2.6-6.5	5	8.54	0.35	8.2-9.1	t (4) = -4.62, p = 0.01*, d =-3.16	41.8% increase
Overall Wellbeing	5	4.86	1.65	3.3-6.7	5	8.40	1.41	6-9.6	t (4) = -4.78, p = 0.01*, d = -2.31	35.4% increase

* Statistically significant at the p≤.05 level, two tailed
[1] Scores on a visual analog scale for each subscale range from 0 (lowest) to 10 (highest). A composite Total Score was computed for each week by summing scores across the four subscales.

Table 3
Group Session Rating Scale[1]

	Session 1				Session 8				
	n	Mean	SD	Range	*n*	Mean	SD	Range	Statistics	% Change
Composite Total Score	5	36.78	2.76	32.3-39.2	5	37.7	1.75	35.2-40	t (4) = -0.87, p = 0.78, d =0.40	2.3% increase
Relationship	5	9.7	0.16	9.5-9.9	5	9.58	0.33	9.2-10	t (4) = 0.82, p = 0.46, d =0.46	1.2% decrease
Goals and Topics	5	8.6	1.01	7.3-9.9	5	9.24	0.48	8.8-10	t (4) = -1.54, p = 0.20, d =0.81	6.4% increase
Approach and Method	5	9.23	0.83	8.7-9.8	5	9.46	0.54	8.6-10	t (4) = -0.92, p = 0.41, d =0.33	2.3% increase
Overall Experience	5	9.25	0.91	7.7-10	5	9.42	0.66	8.5-10	t (4) = -0.51, p = 0.64, d =0.21	1.7% increase

* Statistically significant at the p≤.05 level, two tailed
[1] Scores on a visual analog scale for each subscale range from 0 (lowest) to 10 (highest). A composite Total Score was computed for each week by summing scores across the four subscales.

Table 4
Themes

Themes	Subthemes	Components
2. Acceptability	2.1. Joining	2.1.1. Program name
		2.1.2. Self-selecting enrolment
		2.1.3. Group make-up
	2.2. Working Structure and Process	2.2.1. Connection/check-in
		2.2.2. Mindfulness practice in group
		2.2.3. Flexibility
	2.3. Reluctant Leave Taking with Benefits	2.3.1. Loss of community and support
		2.3.2. Unexpected take-home benefits for parenting
3. Effectiveness	3.1. Self-caring	
	3.2. Normalizing and Relieving	
	3.3. Feeling Prepared	
	3.4. Embracing Pregnancy	
	3.5. Practical and Portable Coping	

Table 5
Hospital Anxiety and Depression Scale[1]

		Time 1				Time2				
	n	Mean	SD	Range	*n*	Mean	SD	Range	Statistics	% Change
HADS Anxiety	5	11.40	3.91	6-17	5	8.00	2.55	4-10	t (4) = 3.03, p = 0.04*, d =1.03	16.2% decrease
HADS Depression	5	6.00	2.00	3-8	5	4.00	1.41	2-4	t (4) = 2.39, p = 0.08, d =1.17	9.5% decrease

* Statistically significant at the $p \leq .05$ level, two tailed
[1] Items on the HADS are rated on a 4-point Likert scale from 0 (meaning the depressive/anxiety symptoms are not applicable to the respondent) to 4 (meaning the respondent greatly experiences the symptoms outlined), and then summed across the 7 items of the depression and anxiety subscales to give maximum scores of 21 for anxiety and depression. Scores of 7 or less are considered normal, scores of 8 to 10 are borderline cases, and scores of 11 or higher are probable cases (Zigmond & Snaith, 1983).

Table 6
Worry and Coping with Difficult Mood (WC-DM Scale)[1]

		Time 1				Time 2				
	n	Mean	SD	Range	*n*	Mean	SD	Range	Statistics	% Change
Worry about Difficult Mood	5	3.80	0.45	3-4	5	2.80	0.45	2-3	t (4) = 3.16, p = 0.03*, d =2.22	20.0% decrease
Coping with Difficult Mood	5	3.00	.071	2-4	5	3.80	0.45	3-4	t (4) = -2.14, p = 0.10, d =-1.38	16.0% increase

* Statistically significant at the $p \leq .05$ level, two tailed
[1] Items on the WC-DM are rated on a 5-point Likert scale. Worry about difficult mood (W-DM) subscale asks participants to rate the level or degree of their anticipatory worry on a Likert scale ranging from 1 (very little) to 5 (almost overwhelming). Confidence about coping with difficult mood (C-DM) subscale asks participants to rate their confidence to cope with a difficult mood following the birth of their baby; response options range from 1(very little) to 5 (very).

Figure 1. Participant selection and engagement through the study

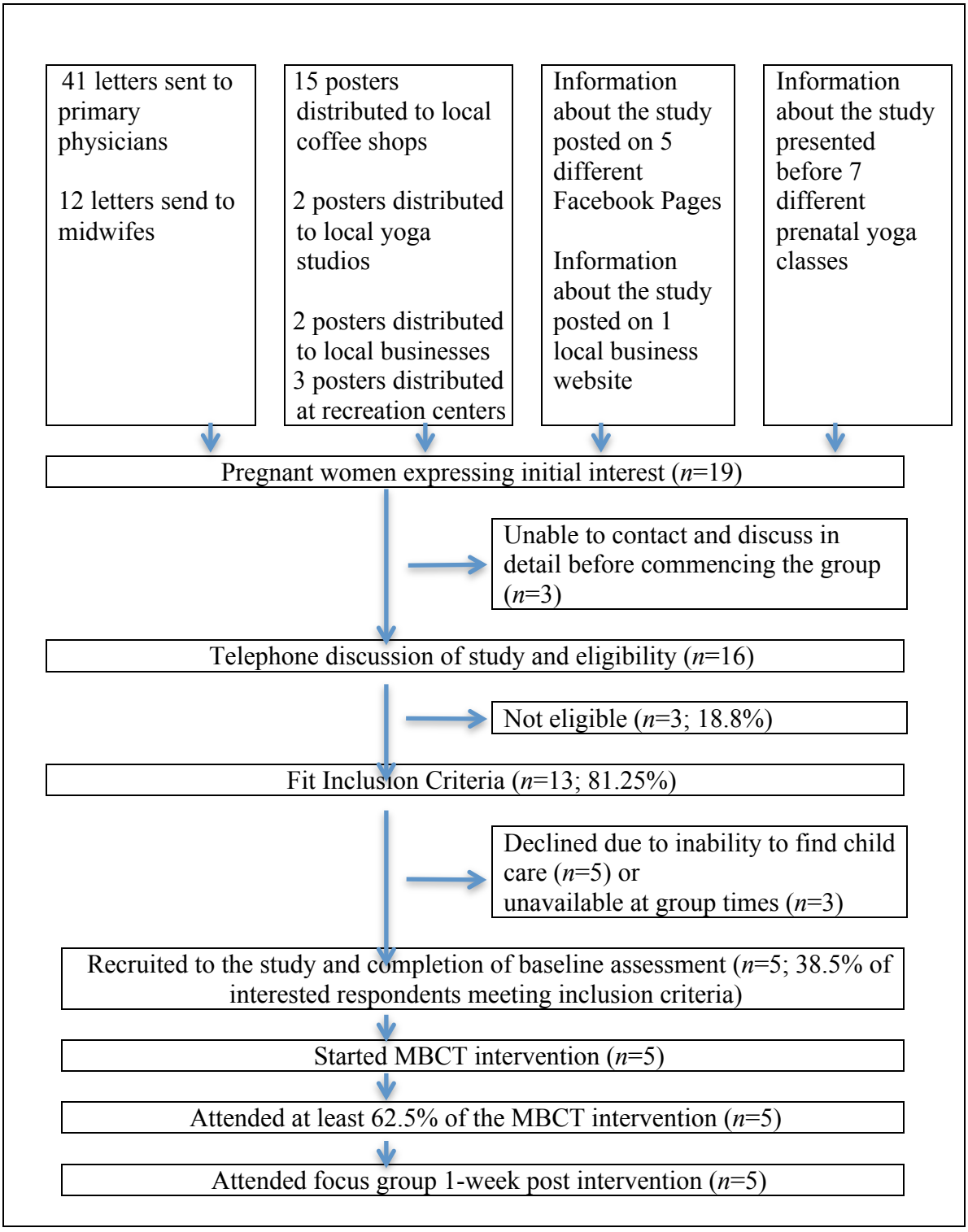


Figure 2a
Outcome Rating Scale: Composite Total Score

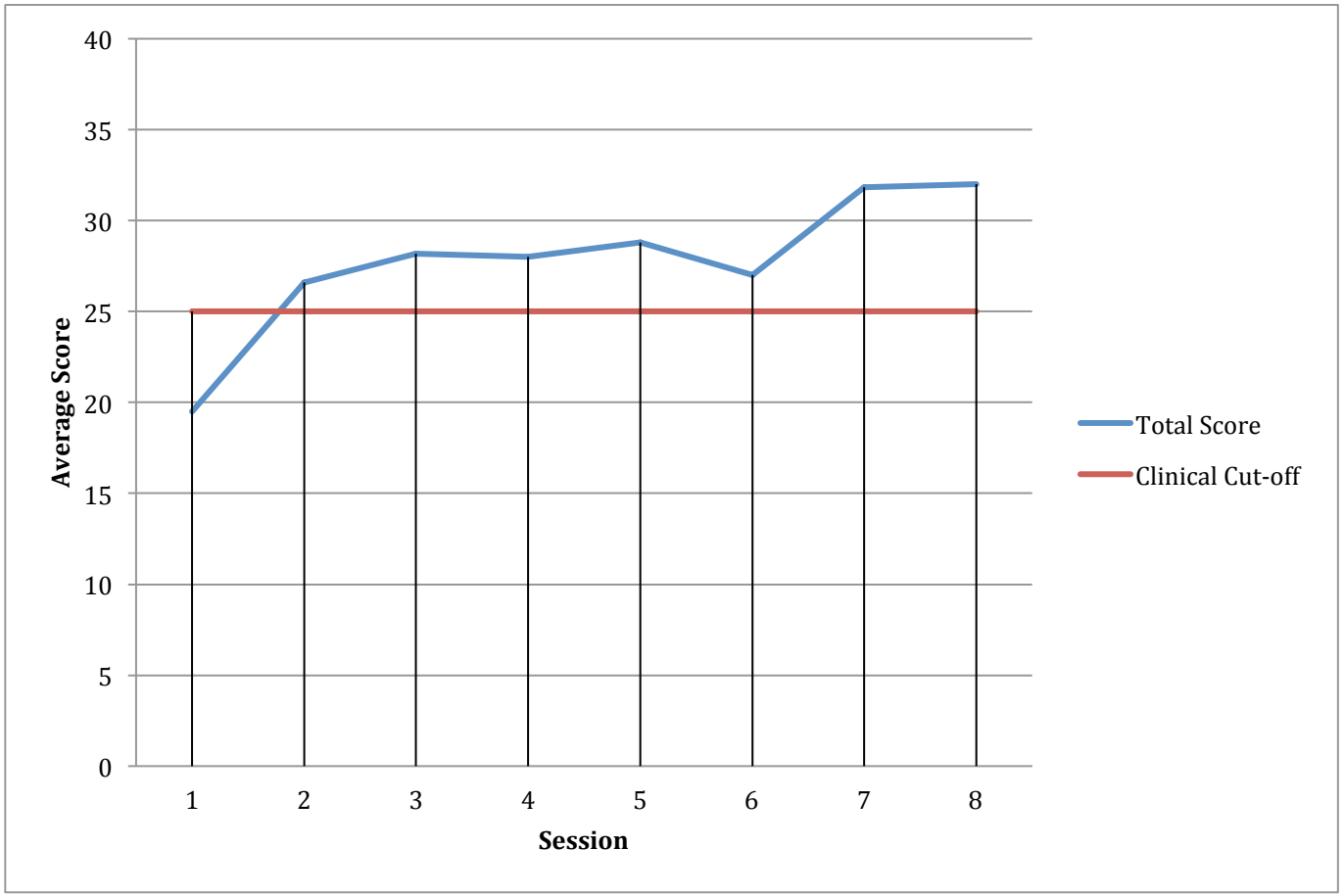


Figure 2b
Outcome Rating Scale: Individual Wellbeing Subscale

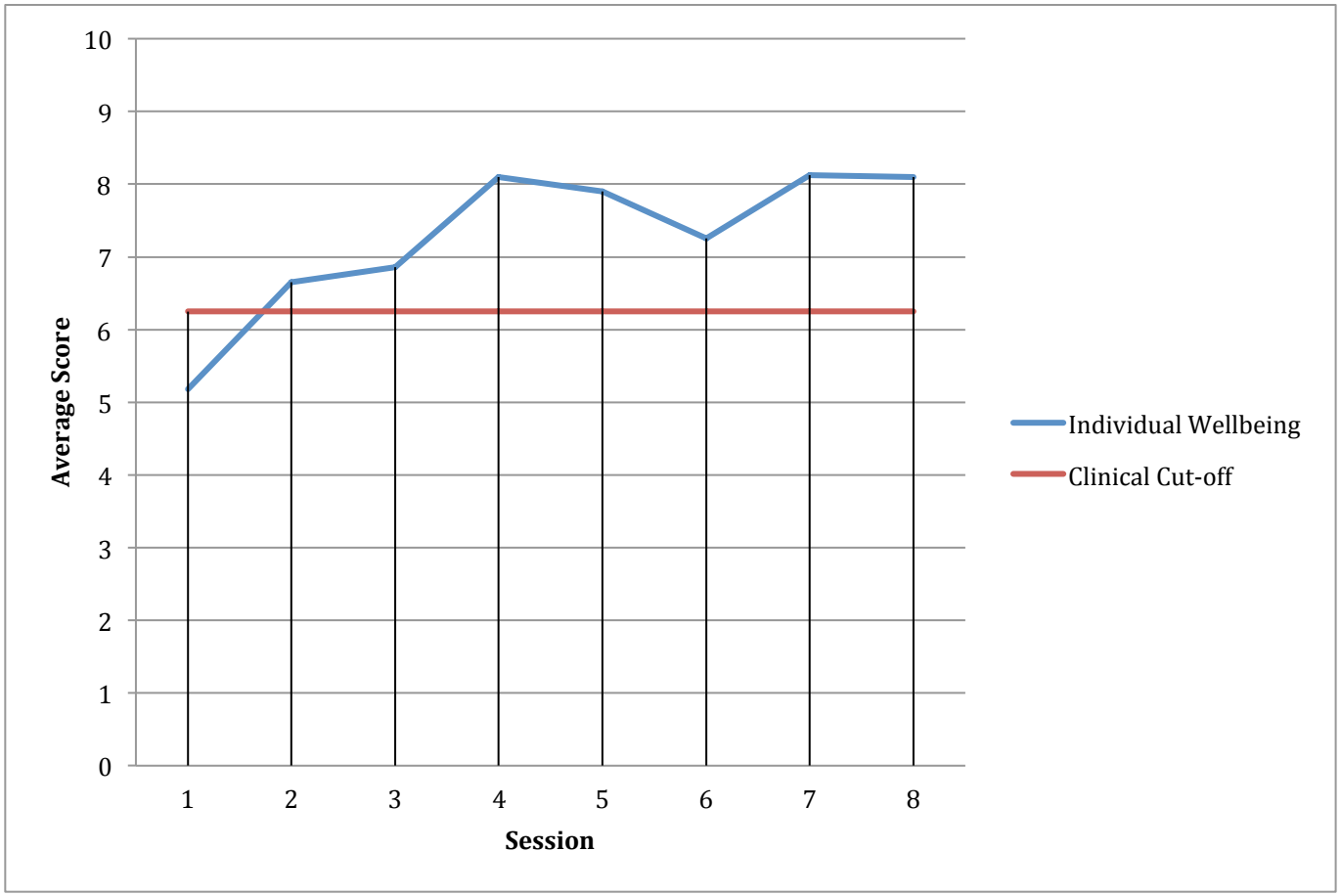


Figure 2c
Outcome Rating Scale: Interpersonal Wellbeing Subscale

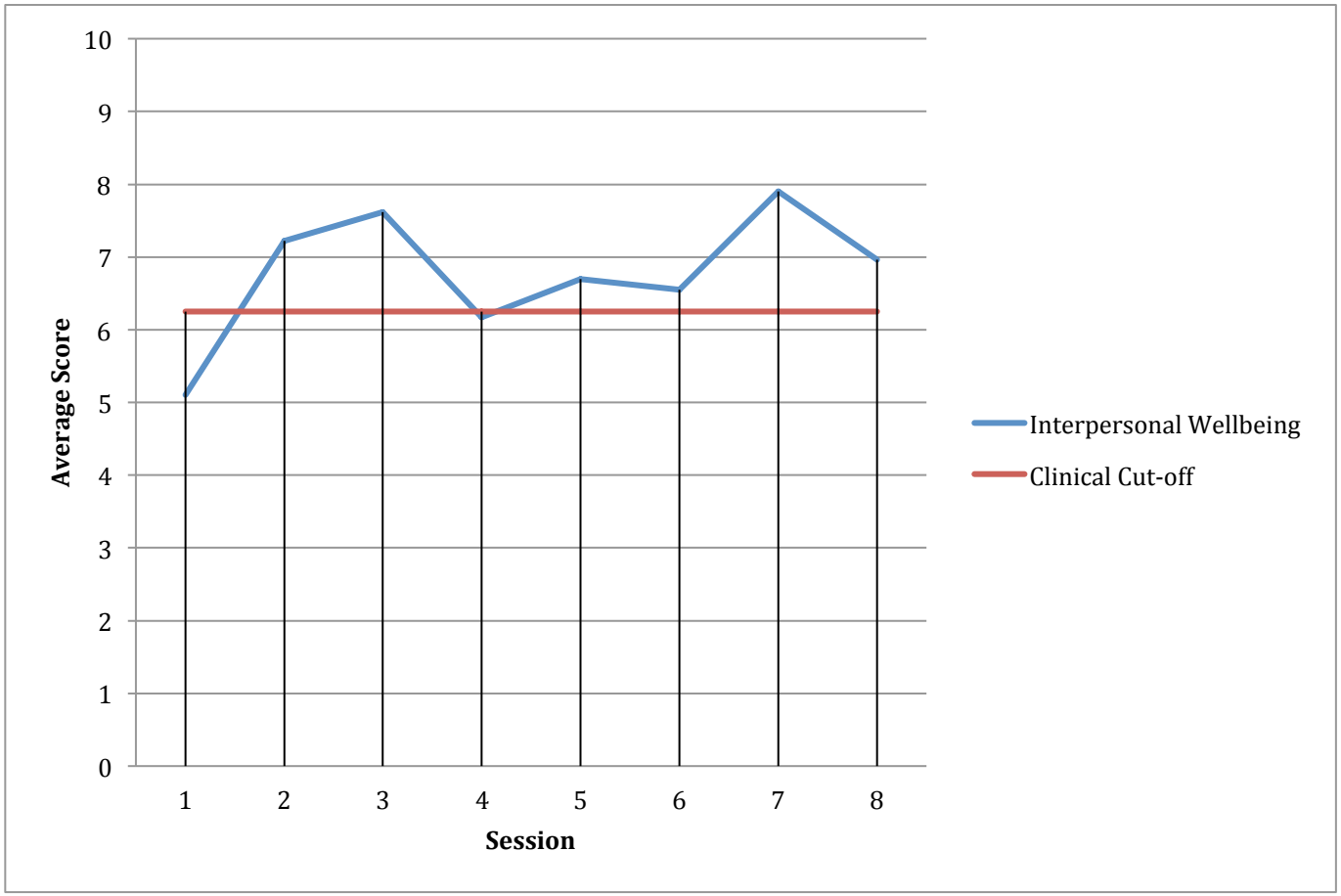


Figure 2d
Outcome Rating Scale: Social Wellbeing Subscale

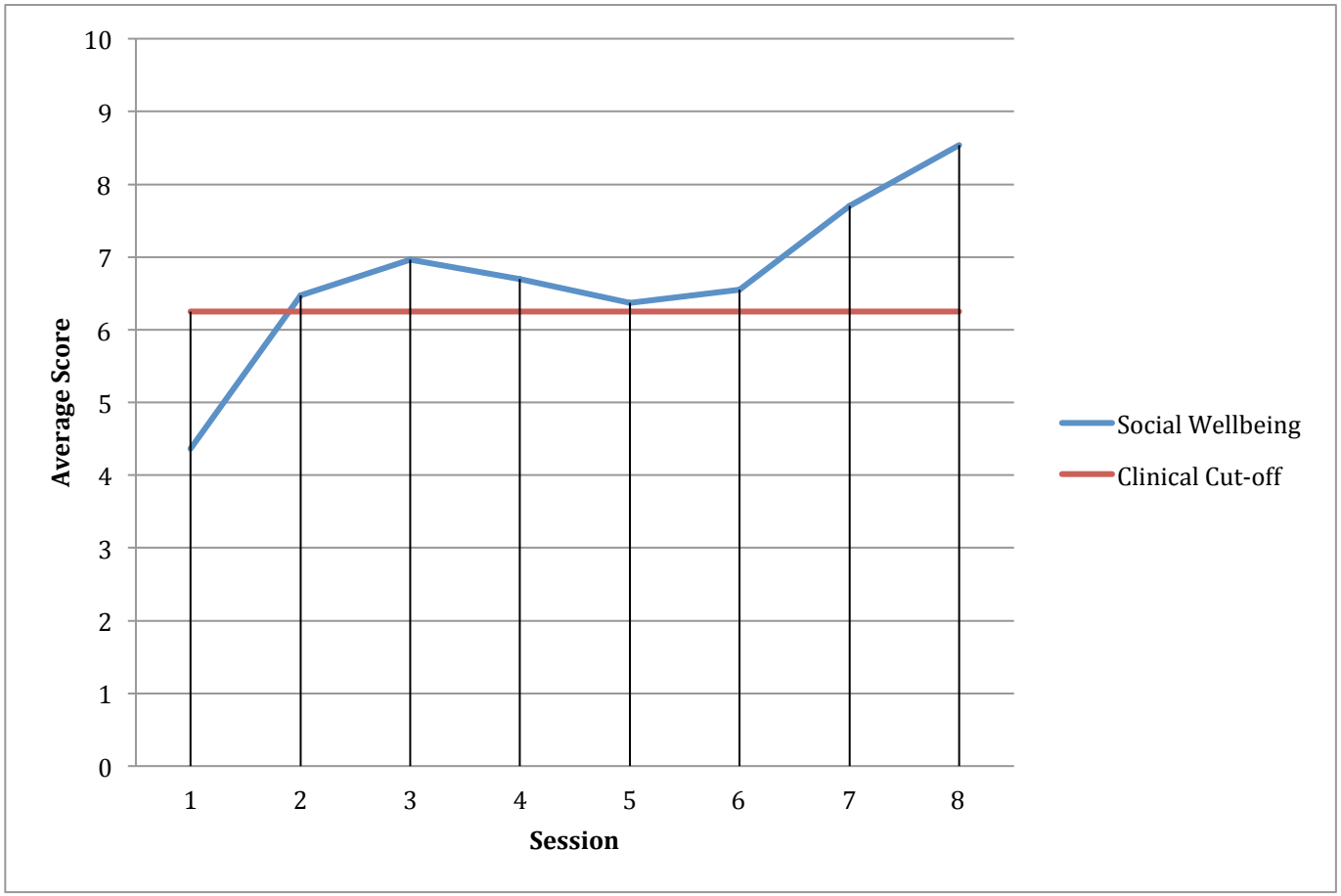


Figure 2e
Outcome Rating Scale: Overall Wellbeing Subscale

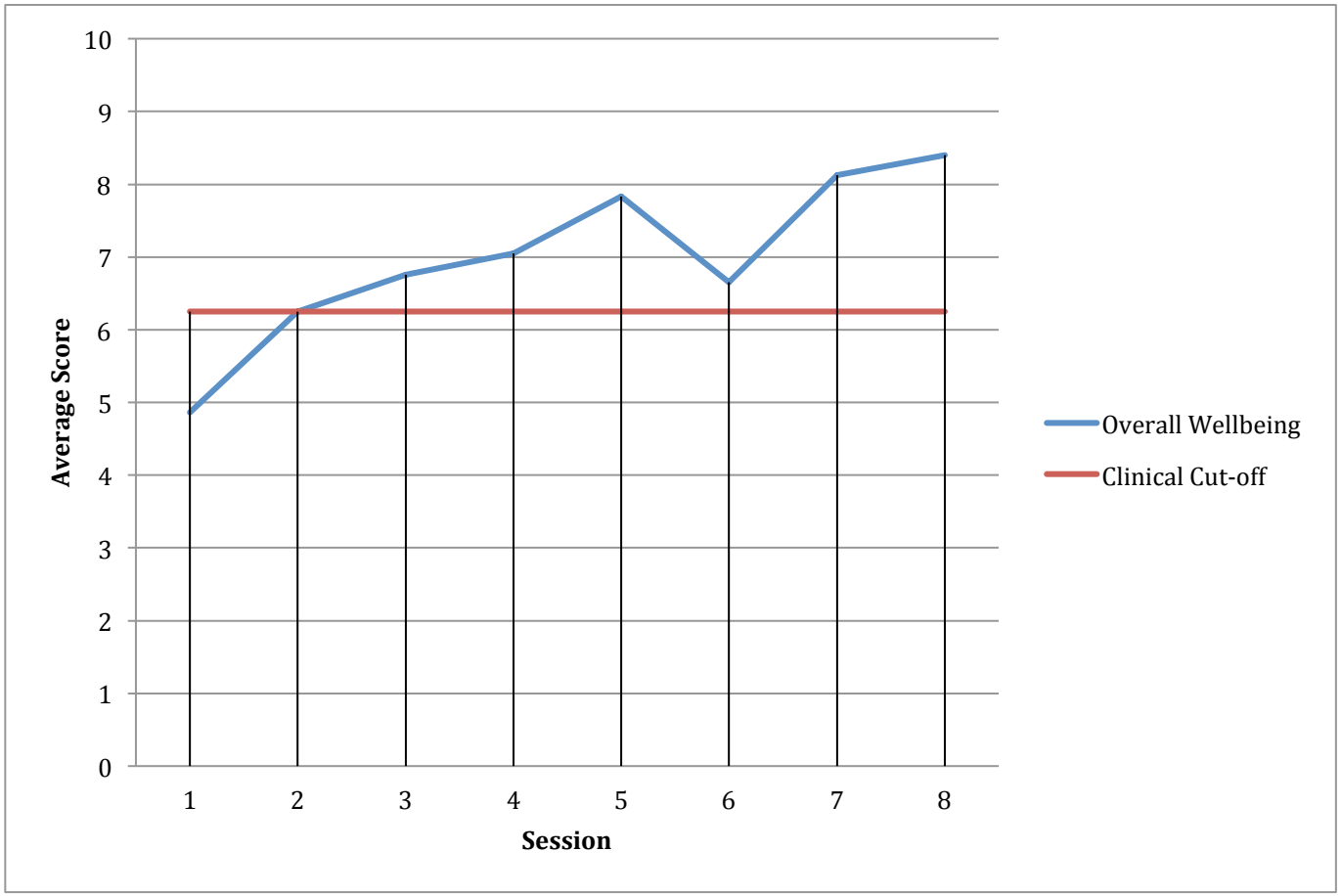


Figure 3a
Group Session Rating Scale: Composite Total Score

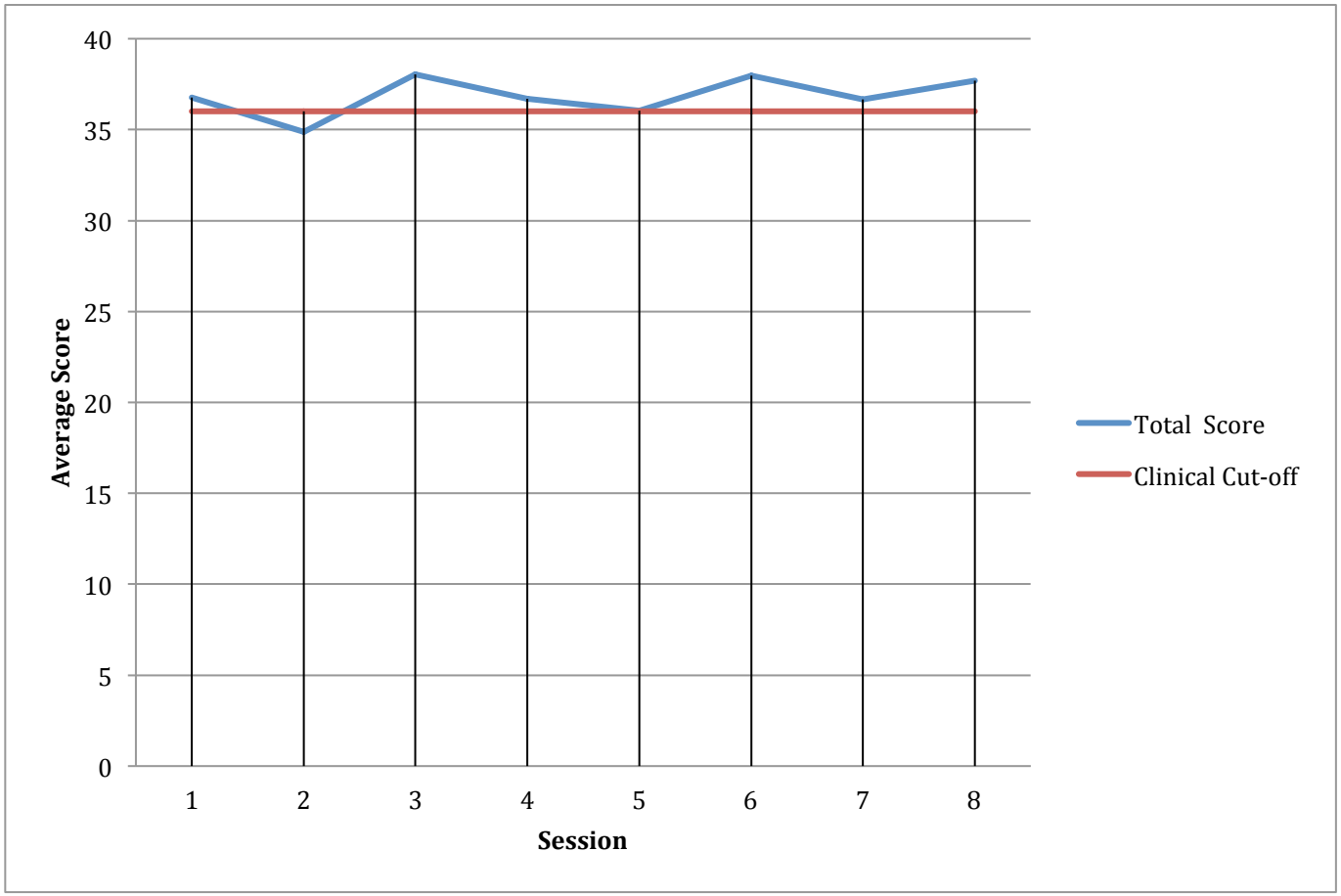


Figure 3b
Group Session Rating Scale: Relationship Subscale

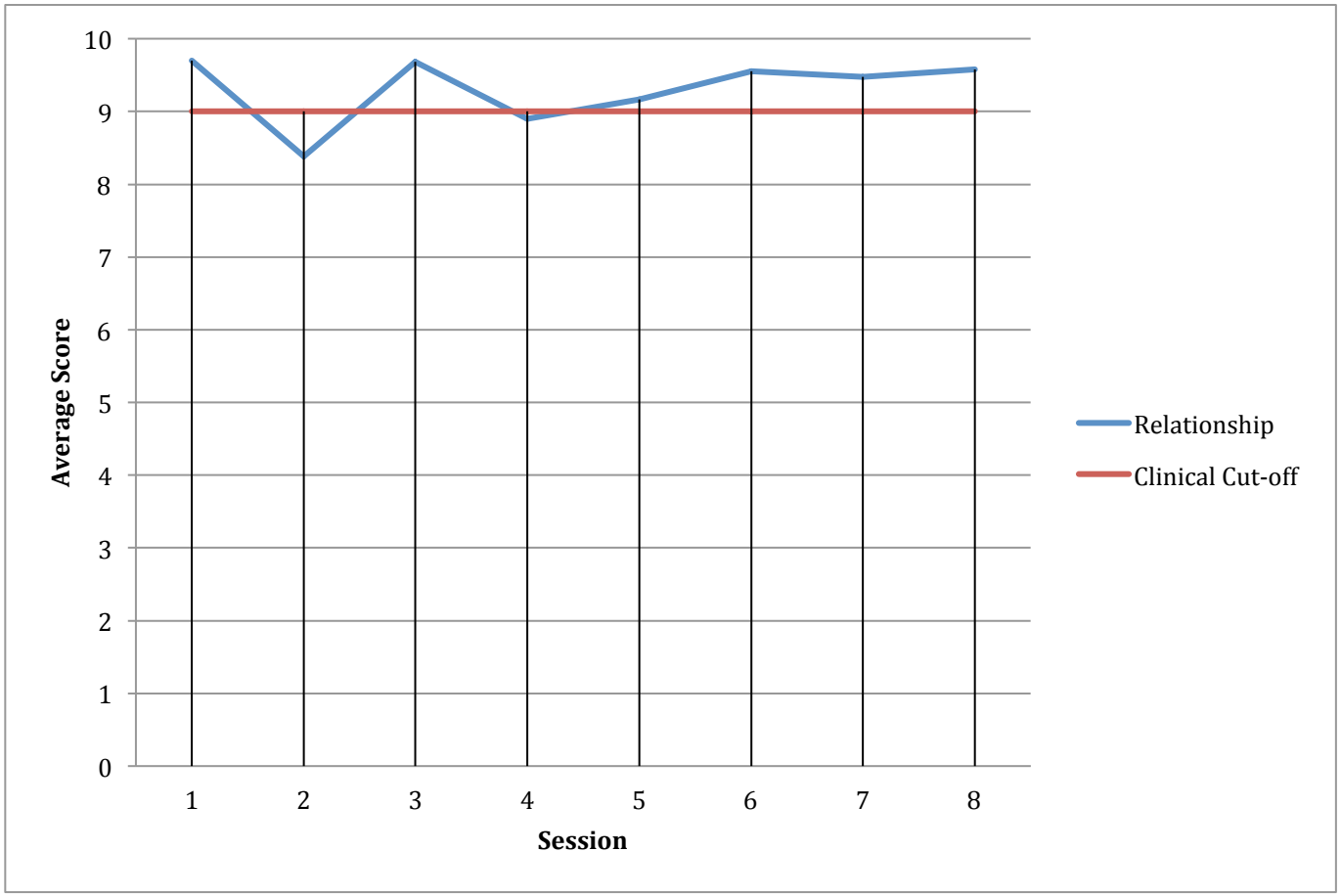


Figure 3c
Group Session Rating Scale: Goals and Topics Subscale

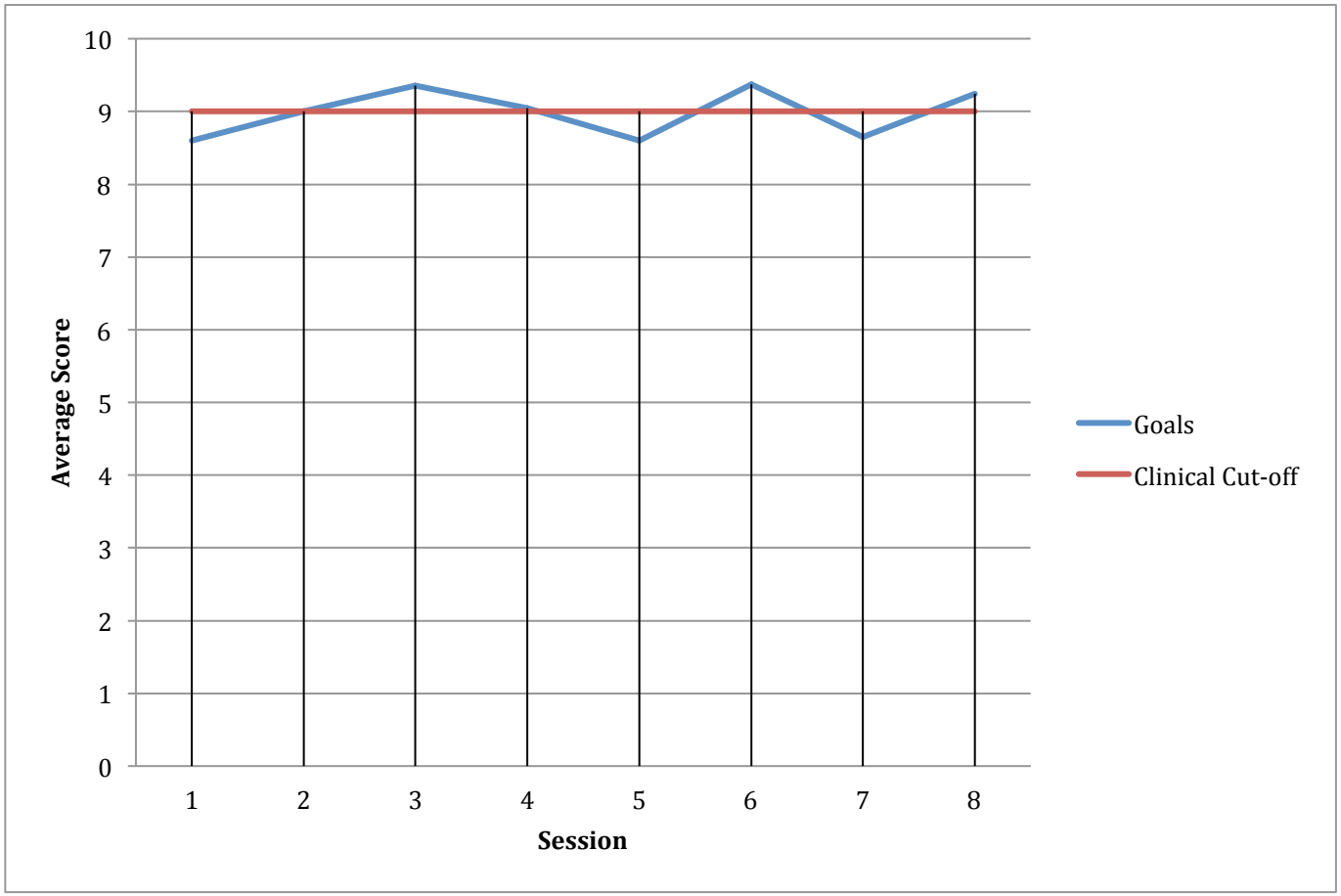


Figure 3d
Group Session Rating Scale: Methods and Approach Subscale

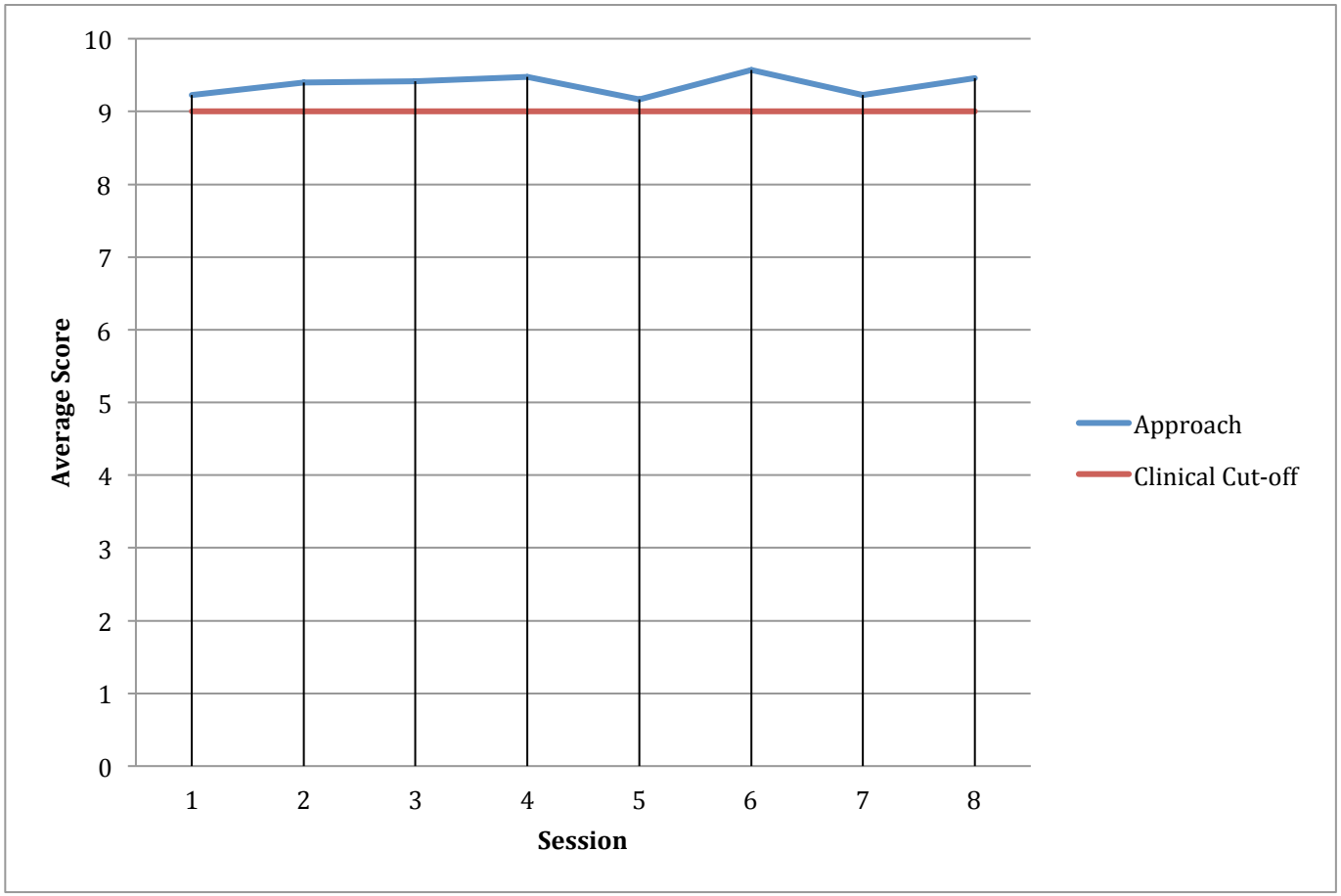
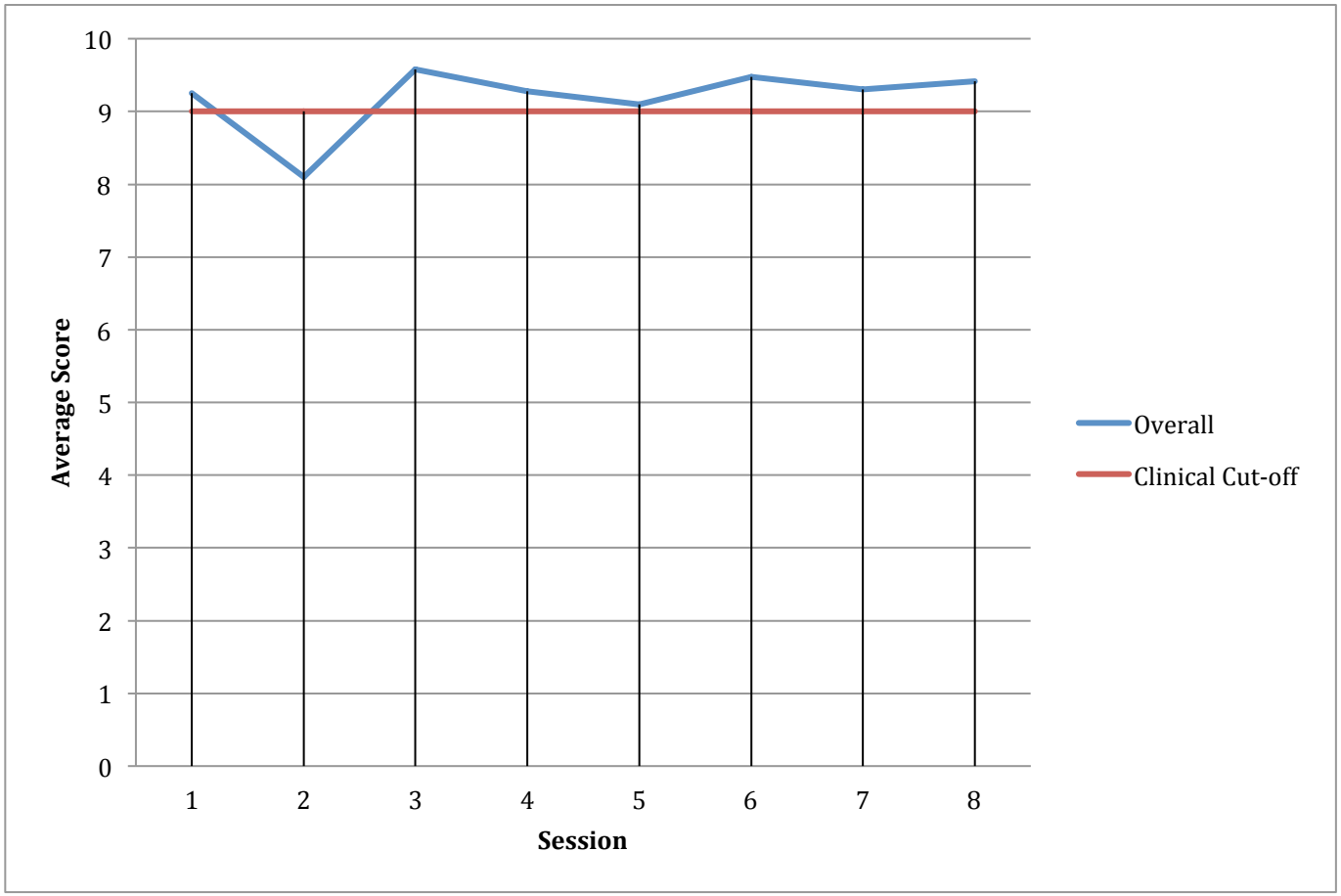


Figure 3e
Group Session Rating Scale: Overall Experience Subscale



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Appendix A

Recruitment Poster

MOMFULNESS
Mindfulness Based Cognitive Therapy Group

Are you over 18 years old?
Are you currently pregnant?
Did you struggle with a difficult mood for at least 2 consecutive weeks in the first year after the birth of a previous baby?

If you answered 'yes' to all three questions, you may be interested in the new **Momfulness** group!

"My name is Katya and I am a graduate student in the Master's of Counselling Psychology Program at the University of Victoria. I would like to invite you to help me in a study I am doing for my Master's thesis. I am interested in exploring the possible benefits of MBCT for pregnant women who have struggled with a difficult mood (e.g., feeling worried, nervous, sad, overwhelmed) for at least 2 consecutive weeks in the first year after the birth of a previous baby. ***Starting soon, I will be running a 9 session Momfulness group.***

What are Momfulness groups? **Momfulness groups are based on Mindfulness Based Cognitive Therapy (MBCT).** MBCT has been a helpful way for many people to manage the difficult mood and stresses of daily life. It is a gentle group approach that includes mindfulness practice, such as meditation and gentle yoga stretches with group discussions where participants learn and practice coping strategies. It will teach you how to stay in touch with the present moment, without having to agonize about the future, or ruminate about the past.

I think the groups will be fun, relaxing, and helpful! Of course while I hope this will be the case for all participants, I can't guarantee this."

Your participation would involve 9 sessions on Sunday early evenings for 9 weeks, and each session is is 2 hours long.
In appreciation for your time, I will provide you with a "Mindful Way Through Depression" book accompanied by a CD of guided meditations and handouts with mindfulness exercises. I will also provide light snacks during each group.

For more information and to register please contact
Katya Legkaia: [redacted] [redacted]

Appendix B

Recruitment Flyer

MOMFULNESS
Mindfulness Based Cognitive Therapy Group

Are you over 18 years old?
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"My name is Katya and I am a graduate student in the Master's of Counselling Psychology Program at the University of Victoria. I would like to invite you to help me in a study I am doing for my Master's thesis. I am interested in exploring the possible benefits of MBCT for pregnant women who have struggled with a difficult mood (e.g., feeling worried, nervous, sad, overwhelmed) for at least 2 consecutive weeks in the first year after the birth of a previous baby.
Starting soon, I will be running a 9 session Momfulness group.

What are Momfulness groups? **Momfulness groups are based on Mindfulness Based Cognitive Therapy (MBCT).** MBCT has been a helpful way for many people to manage the difficult mood and stresses of daily life. It is a gentle group approach that includes mindfulness practice, such as meditation and gentle yoga stretches with group discussions where participants learn and practice coping strategies. It will teach you how to stay in touch with the present moment, without having to agonize about the future, or ruminate about the past.

I think the groups will be fun, relaxing, and helpful! Of course while I hope this will be the case for all participants, I can't guarantee this."

Your participation would involve 9 sessions on Sunday early evenings for 9 weeks, and each session is 2 hours long.
In appreciation for your time, I will provide you with a "Mindful Way Through Depression" book accompanied by a CD of guided meditations and handouts with mindfulness exercises. I will also provide light snacks during each group.

For more information and to register please contact
Katya Legkaia: [redacted]

Appendix C

Letter to Medical Offices, Midwives, Prenatal Instructors

Date:

Dear,

My Name is Katya Legkaia. I am a graduate student in the Master's of Counselling Psychology Program at the University of Victoria. I would like to invite you to help me in a study I am doing for my Master's thesis.

I am exploring the utility of mindfulness-based cognitive therapy (MBCT) for pregnant women who have struggled with a difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed) for at least 2 consecutive weeks within a year of previous delivery of a live infant.

MBCT has been helpful for many people to manage the depression and stress of daily life. However, its usefulness and applicability have not been investigated in pregnant women with a history of full-blown or subclinical PPD.
Within the next couple of months I will be running a 9-week MBCT group called *Momfulness*. The group is open specifically for women who are:

1. 18 years old or older
2. Are currently pregnant
3. Have struggled with a difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed) for at least 2 consecutive weeks within a year of previous delivery of a live infant

I think the groups will be fun, relaxing, and helpful to pregnant women!

I have posters for my study and if you will agree to pin one up in your office or studio or to distribute them to your clients, I will be happy to bring a bunch by your office. A sample of the poster it attached for your information.

If you have any further questions please do not hesitate to contact me. I can be reached by e-mail: [redacted] or by phone: [redacted]

Respectfully,

Katya Legkaia
MA Student, Counselling Psychology Program
University of Victoria

Appendix D

Electronic Letter

Are you over 18 years old?
Are you currently pregnant?
Did you struggle with a difficult mood for at least 2 consecutive weeks in the first year after the birth of a previous baby?

If you answered 'yes' to all three questions, you may be interested in the new **Momfulness** group!

What are Momfulness groups?
Momfulness groups are based on Mindfulness Based Cognitive Therapy (MBCT). MBCT has been a helpful way for many people to manage the difficult mood and stresses of daily life. It is a gentle group approach that includes mindfulness practice, such as meditation and gentle yoga stretches with group discussions where participants learn and practice coping strategies. It will teach you how to stay in touch with the present moment, without having to agonize about the future, or ruminate about the past.

My name is Katya Legkaia and I am graduate student in the Master's of Counselling Psychology Program at the University of Victoria. I am interested in exploring the possible benefits of MBCT for pregnant women who have struggled with a difficult mood (e.g., feeling worried, nervous, sad, overwhelmed) for at least 2 consecutive weeks in the first year after the birth of a previous baby. I would like to invite you to help me in my study I am doing for my Master's thesis. **Starting soon, I will be running a 9 session Momfulness group.**

If you answered YES to the three questions at the top of the page, I would love to have you join my study!

I think the groups will be fun, relaxing and helpful! Of course while I hope this will be the case for all participants, I can't guarantee this.

Your participation would involve 9 sessions, each of which is 2 hours long.
In appreciation for your time, I will provide you with a "Mindful Way through Depression" book accompanied by a CD of guided meditations and handouts with mindfulness exercises. I will also provide light snacks during each group.
For more information and to register: please contact Katya Legkaia: [redacted]
katya@uvic.ca

Thank you for your interest in the study!

Appendix E

Telephone Conversation Script

The following is an example of the script to be used when participants (P) initiate contact with the primary investigator, Katya Legkaia (KL); exact wording and order may change slightly depending on participants' responses:

KL: "Thank you for taking the time to call. We will need 10 to 15 minutes to talk about the study. Do you have the time to talk right now or should I call you back at a different time?"
P: "Yes, we can talk now." ("No, I don't have 15 minutes right now.")

KL: "First, would it be alright if I ask you a few questions?" ("When would be a good time for me to call you back?")
P: "Yes." ("Can you call me in 30 minutes?")

KL: "Are you pregnant right now?"
P: "Yes." ("No.")

→ If YES, continue as follows. If NO, thank woman for her interest and explain that the study is only for currently pregnant women.

KL: "Have you given birth to at least one baby in the past?"
P: "Yes." ("No.")

→ If YES, continue as follows. If NO, thank woman for her interest and explain that the study is only for women who are pregnant for the second or more time.

KL: "Did you struggle with a difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed) for at least 2 consecutive weeks in the first year after the birth of another baby?"
P: "Yes." ("No.")

→: "Yes." ("No.")e as follows. If NO, thank woman for her interest and explain that the study is only for women who are pregnant for the second or more time and who have struggle with a difficult mood for at least 2 consecutive weeks in the first year after the birth of a previous baby.

KL: "Are you over 18 years of age?"
P: "Yes." ("No")

→: "Yes." ("No")ue as follows. If NO, thank woman for her interest and explain that the study is only for women who are 18 years or older.

KL: "Do you think you will be able to provide written approval from your physician to participate in the study?"
P: "Yes." ("No.")

→: "Yes." ("No.")e as follows. If NO, inform the woman that the physician?" written approval is necessary for participation in this study.

KL: "Thanks for sharing with me. I would be happy if you can participate in the group." P: "Sure." ("Actually, no thanks."), ("Oh, okay.")

KL: "I can provide a letter outlining the group and the study for physician. Would you like me to e-mail it to you so that you can take it to your physician? Please be assured that I will only use this e-mail once to send the letter as an attachment for you to print off and to give to your physician. Or alternatively, I can put a copy of the letter into the mail for you. Would you like me to e-mail it to you so that you can take it to your physician?"
P: "Yes. My e-mail is email@email.com." ("No. My address is #100-100 Hundred Street, Victoria, BC. V0A 0J0")

KL: "Thank you! I would like to inform you that your physicians might charge a fee for this service. If this is the case then I will reimburse you, in the first group, at the time when you will provide me with the note and receipt from your physician."
Can I tell you a bit more about the study?"
P: "Yes."

KL: "The study is a 9-week long program where we will meet as a group once a week for 9 weeks. The first 8 weeks will be what I call "Momfulness" group, and in the last and 9th week, we will have a discussion group where we will talk together about our experience of the program – what we liked, what we didn't like, what worked really well, what suggestions for changes we might have, that kind of thing. Let me tell you more about the Momfulness group that we will be doing in the first 8 weeks of the study. Momfulness is an 8-week group program for pregnant women who are over 18 years old who have struggled with a difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed) for at least 2 consecutive weeks in the first year after the birth of another baby.

Momfulness groups are based on Mindfulness Based Cognitive Therapy, which has been a helpful way for many people to manage the difficult mood and stresses of daily life. It is a gentle group approach that includes mindfulness practice, such as meditation and gentle yoga stretches with group discussions where participants learn and practice coping strategies. It will teach you how to stay in touch with the present moment, without having to agonize about the future, or ruminate about the past.

Each session is approximately but no more than 2 hours long and in that time, you will be learning how to be mindful. Together with my research assistant/group co-facilitator, I will teach you mindfulness skills and we will practice these together in the group and then discuss them afterwards. We will also do things like mindfulness meditations, guided relaxation, a little bit of yoga stretches, group discussions, and talk about some practice exercises for homework if you feel like it.

If you choose to participate in the study I will ask you to complete a short questionnaire during the first group that asks you for general information like how old you are, if you're married, how many other children you have, your highest level of education, if you work; that sort of thing. This will take about 5 minutes maximum to finish. Also in the first session and again at the last time we meet in Week 9, there are two very short and very quick-and-easy questionnaires to answer that will take no more than 8 maybe 10 minutes for you to complete. These two questionnaires are designed to help me know how you feel. One questionnaire asks about your mood in the past week and the other asks about worry.

At the beginning and end of each session you will be asked to complete a quick rating scale about how you've been feeling during the week and how you thought the evening's group went, each of these takes no more than two minutes to complete.

The last thing to tell you is that our Focus Group discussion in Week 9 will be video recorded. This is just to help me gather participants' feedback on the group. I need to video it so that I can see whose talking and saying what when I watch it back in my office later. Video recording the Focus Group means that I don't have to write copious notes during the session. It will allow me to focus on what the participants are saying.

How does all this sound to you?"

P: "That sounds okay to me." ("I think that's going to be too much for me to be able to do right now.")

KL: " Great! The group will run on Sundays from 5 to 7 pm for 9 weeks beginning February or March. Do these dates and time work for you?" ("Thanks for letting me know that. I really appreciate the time you took to contact me.")

P: "Yes." ("No.")

KL: "Great." ("I'm sorry this does not work for you. I really appreciate you taking the time to phone me.")

KL: "The group will run at Mothering Touch Centre located at 975 Fort Street. Does this location work for you? "

P: "Yes." ("No.")

KL: “May I write your name and contact details on my list of interested possible participants?” (“I’m sorry this does not work for you. I really appreciate you taking the time to phone me.”)
P: “Yes.” (“No.”)

KL: Would it be ok if I phone you one week before the first session to confirm and remind you of the study?
P: ““Yes.” (“No.”)

KL: “Could you please give me your phone number?”
P: “Yes. My number is 250-250-2502”

KL: Do you have any other questions for me at all?”
P: ““Yes.” (“No, I think I’m fine for now.”)

KL: “If anything comes up between now and when we meet, please feel free to give me a call. My cell phone number is [redacted] (it’s a local Victoria number) and my email is [redacted]. Thank you for taking the time to call and talk with me. I’m looking forward to meeting with you in person. I’ll see you in February or March.”

Appendix F

Hospital Anxiety and Depression Scale

This questionnaire is designed to help the researchers know how you feel. Read each item and put a check mark next to the most correct answer, which comes closest to how you have been feeling **in the past week, including today**. Don't spend too long thinking about each answer; your immediate reaction to each item will probably be more accurate than a long thought out response.
Ignore the numbers and the letter printed on the right of the questionnaire.

I feel tense or 'wound up':		
Most of the time	*3*	*A*
A lot of the time	*2*	
From time to time, occasionally	*1*	
Not at all	*0*	

I still enjoy the things I used to enjoy:		
Definitely as much	*0*	*D*
Not quite so much	*1*	
Only a little	*2*	
Hardly at all	*3*	

I get a sort of frightened feeling as if something awful is about to happen:		
Very definitely and quite badly	*3*	*A*
Yes, but not too badly	*2*	
A little, but it doesn't worry me	*1*	
Not at all	*0*	

I can laugh and see the funny side of things:		
As much as I always could	*0*	*D*
Not quite so much now	*1*	
Definitely not so much now	*2*	
Not at all	*3*	

Worrying thoughts go through my mind:		
A great deal of the time	*3*	*A*
A lot of the time	*2*	
From time to time, but not too often	*1*	
Only occasionally	*0*	

I feel cheerful:		
Not at all	*3*	*D*
Not often	*2*	
Sometimes	*1*	
Most of the time	*0*	

I can sit at ease and feel relaxed:		
Definitely	*0*	*A*
Usually	*1*	
Not Often	*2*	
Not at all	*3*	

I feel as if I am slowed down		
Nearly all the time	*3*	*D*
Very often	*2*	
Sometimes	*1*	
Not at all	*0*	

I get a sort of frightened feeling like 'butterflies' in the stomach:		
Not at all	*0*	*A*
Occasionally	*1*	
Quite Often	*2*	
Very Often	*3*	

I have lost interest in my appearance:		
Definitely	*3*	*D*
I don't take as much care as I should	*2*	
I may not take quite as much care	*1*	
I take just as much care as ever	*0*	

I feel restless as if I have to be on the move:		
Very much indeed	*3*	*A*
Quite a lot	*2*	
Not very much	*1*	
Not at all	*0*	

I look forward with enjoyment to things:		
As much as I ever did	*0*	*D*
Rather less than I used to	*1*	
Definitely less than I used to	*2*	
Hardly at all	*3*	

I get sudden feelings of panic:		
Very often indeed	*3*	*A*
Quite often	*2*	
Not very often	*1*	
Not at all	*0*	

I can enjoy a good book or radio or TV program:		
Often	*0*	*D*
Sometimes	*1*	
Not often	*2*	
Very seldom	*3*	

Appendix G

Worry about Difficult Moods and Coping with Difficult Moods Scale

This questionnaire is designed to help the researchers know more about how you feel.

1. **Are you worried about experiencing difficult moods (e.g., feeling worried, nervous, sad, down, overwhelmed) after the birth of your baby?**

   No Yes

2. **Please explain**

3. **If you responded YES to the first question, how worried are you? Please circle the best response.**

1	2	3	4	5
Very little	A little	Somewhat	A lot	Almost overwhelming

4. **Please tell me more about your rating. For example if you said 3 (somewhat worried), what makes it a 3 and not a 2 (a little worried) or a 4 (worried a lot)?**

5. **If you responded YES to the first question AND you rated your worry as 2 or more on the scale, how confident are you about being able to cope with your worry about difficult moods (e.g., feeling worried, nervous, sad, down, overwhelmed) after the birth of your baby? Please circle the best response.**

1	2	3	4	5
Very little	A little	Somewhat	Mostly	Very

6. **Please tell me more about your rating. For example if your rating is 3 (somewhat confident), what makes it a 3 and not a 2 (a little confident) or a 4 (mostly confident)?**

Appendix H

Outcome Rating Scale

Name _____

Session # ____

Date: _____

_____

Looking back **over the last week including today**, help us understand how you have been feeling by rating how well you have been doing in the following areas of your life, where marks to the left represent low levels and marks to the right indicate high levels.

Individually
(Personal well-being)

I----------I

Interpersonally
(Family, close relationships)

I----------I

Socially
(Work, school, friendships)

I----------I

Overall
(General sense of well-being)

I----------I

Appendix I

Group Session Rating Scale

Name _____

Session # ____

Date: _____

__

Please rate today's group by placing a mark on the line nearest to the description that best fits your experience.

Relationship

I did not feel understood, respected, and/or accepted by the leader and/or the group. ----------I I felt understood, respected, and accepted by the leader and the group.

Goals and Topics

We did *not* work on or talk about what I wanted to work on and talk about. ----------I We worked on and talked about what I wanted to work on and talk about.

Approach or Method

The leader and/or the group's approach are/is not a good fit for me. ----------I The leader and the group's approach are a good fit for me.

Overall

There was something missing in group today—I did not feel like a part of the group. ----------I Overall, today's group was right for me—I felt like a part of the group.

Appendix J
Informed Consent

University of Victoria

Department of Educational Psychology and Leadership Studies
PO Box 3010 STN CSC
Victoria British Columbia V8W 3N4 Canada
Tel 250-721-7799, Fax 250-721-6190

ETHICS AND INFORMED CONSENT

Working Study Title: Mindfulness-Based Cognitive Therapy for Pregnant Women with Previous Difficult Postpartum Mood: A Mixed Methods Exploratory Study

Principal Investigator: Katya Legkaia, M.A. Counselling Student

Email: [redacted]

[redacted]

Thesis Supervisor: Dr. Susan Tasker, Ph.D., CCC

Email: [redacted]

[redacted]

Research Assistant /Group Co-facilitator: Amrita Grewal, M.Ed. Counselling Student

Email: [redacted]

Purpose and Objectives

To evaluate the safety, acceptability and benefits of a mindfulness-based group-based program for pregnant women with a history of mood difficulties for at least 2 consecutive weeks in the first year after the birth of another baby.

Importance of this Research

- PPD is a moderate to severe depression that may occur soon after delivery or up to a year later. Most of the time, PPD symptoms occur within the first 3 months after delivery and include at least 2 consecutive weeks of difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed).
- PPD can have long-lasting effects for women and for their relationships with their baby, partners and other children.

- MCBT was designed as a treatment of depression and research tells us that participation in a MBCT group might help to prevent or at least help women cope with difficult mood in the first year after the birth of a baby.
- Although MBCT has not previously been made available to pregnant women who have experienced difficult mood after giving birth, studies show that it has been helpful in the treatment of depression and anxiety in adults generally, and also in helping pregnant women to cope with depression and stress during pregnancy.
- This study hopes to find a helpful therapeutic approach for pregnant women who have experienced difficult moods after the birth of an earlier baby.

Participant Selection

- You are being asked to participate in this study because you are pregnant, you are over 18 years old, and you experienced difficult mood (e.g., feeling worried, nervous, sad, down, overwhelmed) for at least 2 consecutive weeks in the first year after giving birth to an earlier baby.
- You are able to provide a note of your physician's written approval to participate in the *Momfulness* MBCT group program.
- You heard about the study from posters, word of mouth, or information sent to you.
- You understand that participation in this study is entirely voluntary.

What is involved if you voluntarily participate in this research:

- *Before* starting the Momfulness MBCT group program you will be asked to complete a short questionnaire that asks you for general information like how old you are, if you're married, how many other children you have, your highest level of education, if you work; that sort of thing. This will take about 5 minutes at the most to finish. Also you will be asked to complete two very short and very easy-to-answer questionnaires. They will take no more than 8 to 10 minutes for you to complete. These two questionnaires are designed to help me know how you feel. One questionnaire asks about your mood in the past week and the other asks about worry.
- *During* the group program you will be asked to complete a short questionnaire before and after each group session. Each of these takes no more than two minutes to complete.
- *After completing* the group program you will be asked to complete the two questionnaires on mood and worry again.
- The *Momfulness* MBCT group will meet for 2 hours every week for 9 weeks. The *Momfulness* MBCT group will be held at Mothering Touch Centre, 975 Fort Street, Victoria BC, V8V 3K3.
- In the group, you will be asked to do meditation and relaxation exercises for example, and will be provided with short lessons, and the opportunity for group discussions.
- You will be asked to practice the meditation exercises at home.
- The last meeting in Week 9 will be a focus group discussion about your experience with the program. The focus group will be videotaped only to help me

record and write down the contents of the focus group discussion when I return to my office at UVic. This videotape will not be shared with the findings of the study.
- If you do not want to be videotaped, we will switch the camera off when you talk.

You will be asked to:
- Complete questionnaires today.
- Attend *Momfulness* group sessions once a week for 8 weeks beginning from today.
- Complete a short questionaire at the beginning and end of each group session.
- Participate in a focus group discussion in Week 9 to share your thoughts about the *Momfulness* MBCT group program that you have completed.
- Complete questionnaires in Week 9 before the focus group discussion.

Potential Harms (Injury/Discomforts/Inconvenience)
- You may find completing the questionnaires boring or frustrating.
- You may experience some discomfort, boredom, restlessness, or tiredness during the meditations.
- You may not like doing the meditation exercises as homework.
- You may experience frustration with the practices, such as meditations, especially if you are not used to them.
- You might feel frustrated if you do not experience physical well-being effects associated with MBCT.
- At the beginning of every MBCT group session you will be reminded that if you experience distress during the group you can let the co-facilitators know. Facilitators will be available for individual debriefing at the end of each session.
- You may experience frustration with completing the questionnaires.
- You do not have to answer any questions or participate in any group activities that you feel uncomfortable answering or participating in.
- You are free to withdraw from the study at any time with no obligation.
- You might experience some fatigue during the 2 hour sessions. It is common for participants in MBCT groups to occasionally fall asleep during the meditations. It is very normal. This could be because meditations are relaxing.
- We will inform you about this tendency before such exercises. If you do fall asleep during meditations you will be woken up gently once the group discussion resumes. Relaxation practices will be alternated with more energizing exercises, such as gentle stretches and stimulating exercises, such as group discussion and psychoeducation.
- You might become fatigued from sitting and listening to and participating in the cognitively-based psychoeducational discussion portions of each session.
- If you get too restless or physically uncomfortable from sitting too long or being too still, you can step outside the program area and to move around for a while, or have a refreshing drink or a snack before returning to the group. Drinks such as

juice and tea and snacks consisting of fresh fruits, vegetables, and baked goods will be provided for each group. We will also have a 10 minutes refreshment break in the middle of each session.

- At the end of each group you will fill out a short group evaluation form, which will provide us with feedback about each group and will allow us to make necessary changes to improve your comfort in the group.
- In the unlikely event that you require immediate attention during the group, one of the co-facilitator will be able to offer immediate emotional support. If you will experience physical discomfort of any sort, you will be encouraged to sit or to lie down. In the highly unlikely situation that the you and co-facilitator are concerned for whatever reason (e.g., contractions), co-facilitator will call a family member or an ambulance.
- We are aware that the potential major inconvenience for you of participating in the study is the time commitment. It may be difficult for you to attend all 9 *Momfulness* MBCT group sessions. For example, transportation to and from group meetings or childcare for your other children might be inconvenient for you to arrange.

Risks

- There are no known risks to you by participating in this research (e.g. emotional, social, psychological, economic, etc.)
- Given you pregnant status and because the program includes some gentle yoga stretches and walking meditation it is important that you receive your physician's approval for participation in this study. You have spoken with your primary attending physician and s/he has provided the researcher with written approval for your participation in the *Momfulness* MBCT group program.

Benefits

- By participating in this group, you are helping to find out if this is a good activity for pregnant women who have struggled with difficult moods (e.g., feeling worried, nervous, sad, down, overwhelmed) following childbirth in the past.
- MBCT will provide you with new ways to manage daily stress.
- Participation in the *Momfulness* MBCT group program will provide you with social support from other pregnant mothers.

Compensation

- You will receive a "Mindful Way through Depression" book accompanied by a CD of guided meditations and handouts with mindfulness exercises. The book describes the MBCT approach for dealing with difficult moods and is a good compliment to the information that you will receive during the group. The CD can be used for practicing mindfulness exercises at home outside of the group.
- I will provide light refreshments and snacks during the group break on weekly basis.

Voluntary Participation

- Your participation in this research is completely voluntary and your choice.
- You may withdraw at any time without any obligation, explanation or consequence.
- If you stop participating in the study, your information will be used only if you give your permission. If not, your information will be destroyed.
- If you stop participating in the study, you will be contacted (by phone, email, or mail) to confirm this.

Ongoing Consent

- If you agree to the informed consent, you are agreeing to participate in a study that runs for 9 weeks.
- You will be asked to sign your name on a form at each visit. Here is what the form looks like. (Show Appendix 13 to potential participant.) This will tell me that you agree that your attendance at each group remains voluntary and that your consent to participate in the study is ongoing.

Researchers Relationship with Participants

- The Principle Investigator, Katya Legkaia, and her thesis supervisor, Dr. Susan Tasker, have no knowledge or relationship to you or to other participants that we are aware of.
- The Research Assistant and *Momfulness* co-facilitator, Amrita Grewal, has no knowledge or relationship to you or to other participants that she is aware of.

Anonymity and Confidentiality

- The information you share with the researchers will be kept private, anonymous and confidential.
- For example, no names will be given in the final research report.
- The video recording will only be used later to write down your responses to our questions about your thoughts about the *Momfulness* MBCT program. This will help us to accurately record and remember your responses. The video recordings will not be shared with the findings of the study.
- The principle investigator and group facilitator will speak with the group and explain how it is everyone's responsibility to maintain confidentiality for the group members.
- All information collected will be stored in a locked cabinet in Dr. Tasker's research office in MacLaurin Building at UVic.
  All information will be kept for 5 years maximum and will be destroyed when all data analyses have been completed.

Exceptions to Confidentiality

- The group co-facilitators cannot be responsible for other group members' actions. They can only encourage all members to maintain confidentiality.
- Katya Legkaia, Dr. Susan Tasker, and Amrita Grewal may have access to confidential information and will adhere to ethical standards required by their governing professional body, the Counselling Psychology program, and University of Victoria to maintain confidentiality.

- During the last week of the group, Week 9, you will be asked to participate in a focus group. This session will be video recorded. The video recording will only be used later to write down your responses to our questions about your thoughts about the *Momfulness* MBCT program. This will help us to accurately record and remember your responses. The video recordings will not be shared with the findings of the study. **You have** an **option of being seated off camera.** Not wanting to be video recorded will not affect your participation in the group discussion or the study whatsoever.

Research Findings

- May be shared in professional reports, publications, and conference meetings.
- For example, the report will be presented in a Master's thesis presentation.
- Research participants will be provided with a non-scientific report of the findings.
- The research findings may be presented at Mothering Touch.

Questions or Concerns

If you have any questions or concerns, feel free to contact the Principle Investigator, **Katya Legkaia, , Tel:**
You may also contact Katya Legkaia's thesis supervisor, Dr. Susan Tasker, ,
You may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Human Research Ethics Office, University of Victoria, (250) 472-4545, ethics@uvic.ca

Please see over for INFORMED CONSENT signature pages

University of Victoria

Department of Educational Psychology
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Tel 250-721-7799, Fax 250-721-6190

INFORMED CONSENT SIGNATURE PAGES

Working Study Title: Mindfulness-Based Cognitive Therapy for Pregnant Women with Previous Difficult Postpartum Mood: A Mixed Methods Exploratory Study

Principal Investigator: Katya Legkaia, M.A. Counselling Student

Email:

Tel:

Thesis Supervisor: Dr. Susan Tasker, Ph.D., CCC

Email:

Tel:

Research Assistant/Group Co-facilitator: Amrita Grewal, M.Ed. Counselling Student

Email:

1. CONSENT TO PARTICIPATE

I have read the information package given to me:

1. I understand what the research study is about.
2. I understand that I have the right not to participate in this study.
3. I understand that I have the right to withdraw at any point.
4. I understand that there will not be any consequences for discontinuation of participation.
5. I understand that my confidentiality and anonymity are the researchers' legal and professional responsibilities, and that no information will be disclosed without my permission unless required by law. I also understand that confidentiality is limited by participation in a group program.
6. I understand that I can ask the researchers questions about the study at any point.
7. I understand that I do not have to answer any question if it upsets me.

I have read and understood the information package. I voluntarily consent to participate in the research study *Mindfulness-Based Cognitive Therapy for Pregnant*

Women with Previous Difficult Postpartum Mood: A Mixed Methods Exploratory Study.

Your signature below means that you understand the conditions of participation in this study and that you have had the opportunity to have your questions answered by the researchers.

Name of Participant	*Signature*	*Date*

Telephone Number: _____ E-mail: _____

2. CONSENT FOR USE OF INFORMATION

Part 1:
I give my permission for my information to be used in future data analyses by Katya Legkaia and her supervisor, Dr. Susan Tasker. Future analysis may include using portions of the data collected to help answer a secondary question coming from the study. Or, the existing data may be subjected to additional analyses not conducted for the purposes of the primary investigator's thesis. I understand that my participation in the study does not require me to give permission for my information to be used in future data analyses.
□ YES □ NO

Name of Participant	Signature of Participant	Date

Part 2:
If I choose to stop participating in the study at any point, I give my permission for my information provided up until then to be used for analyzing the data and in future data analyses by Katya Legkaia and her supervisor, Dr. Susan Tasker.
□YES □NO

Name of Participant	Signature of Participant	Date

The next page contains Consent for use of video recording footage. You will be asked to sign this consent at the beginning of the last group.

I have read and understood the information package. I voluntarily consent to participate in the research study *Mindfulness-Based Cognitive Therapy for Pregnant Women with Previous Difficult Postpartum Mood: A Mixed Methods Exploratory Study.*

Your signature below means that you understand the conditions of participation in this study and that you have had the opportunity to have your questions answered by the researchers.

_____	_____	_____
Name of Participant	Signature of Participant	Date

A copy of this consent will be returned to you at next week's session. The original will be kept by the researcher.

3. ONSENT FOR USE OF VIDEO RECORDING FOOTAGE

I agree that the images in the *video recording* of the last group meeting, which I have allowed the research investigators Katya Legkaia and Dr. Susan Tasker access to, can be used anonymously for the purpose of transcribing the discussion from the focus group in Week 9 of the study and of which I will be a participant. If I do not want to be video-recorded, I understand that I have an option of being seated off camera. I understand that not wanting to be video recorded will not affect my participation in the group discussion or the study whatsoever.

□YES □NO

_____	_____	_____
Name of Participant	Signature of Participant	Date

Appendix K

Demographic Questionaire

Date: _____

PARTICIPANT DEMOGRAPHIC INFORMATION

The following questions are required to describe the individuals participating in this study as a group. Only group data will be reported. That is, no individual will be identified in any report of this study.

1. Your age: _____ (years)

2. Your ethnic or cultural background: _____

3. What language do you speak at home? (circle one)
   a) English as first language
   b) Other language as first language; please specify _____

4. Your relationship status: (please circle one)
   a) single
   b) steady relationship
   c) married
   d) common-law
   e) divorced/separated

5. What is the highest level of education that you have completed? (circle one)
   a) less than 7^{th} grade
   b) junior high school (9^{th} grade)
   c) partial high school (10^{th} or 11^{th} grade)
   d) high school graduate
   e) partial college (at least 1 yr. or specialized training)
   f) standard college or university graduate
   g) graduate professional training (MA, MSc, MD, MBA, PhD)

6. Your current employment status: (please circle one)
   a) volunteer
   b) part-time
   c) full-time
   d) unemployed
   e) other:_____

7. Annual income: (please circle one)
   a) $5,000-$9,999
   b) $10,000-$24,999
   c) $25,000-$49,999
   d) $50,000 or more
   e) other:_____

8. How many other children do you have? _____

9. Your religion/spiritual orientation: _____

10. The date of your due date: _____
    (date/month/year)

11. Was this pregnancy planned?
    YES _____ NO _____

12. Are you currently on medication? (Please specify)
    YES _____ NO _____

    Medication:

    _____

    What is your medication for?

    _____

    _____

13. Have you ever suffered from any type of mental illness?
    YES _____ NO ____

    Please explain:

    _____

    _____

14. Are you currently suffering from any type of mental illness?
    YES ____ NO ____

    Please explain:

    _____

    _____

15. Have you ever participated in a *mindfulness* group before?
    YES ____ NO ____

    Please explain:

    _____

    _____

16. Did you seek professional help for the difficult moods (e.g., feeling worried, nervous, sad, down, overwhelmed) you experienced after the birth of your other baby? YES ____ NO ____

    Please explain:

    _____

    _____

Should you wish to do so, please note any other comments in the space provided below: