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A Mindfulness-Based Stress Reduction Psychoeducational Program in Postpartum Support Groups

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Abstract

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MA, Siena Heights University, 2006

BA, Institute of the Sacred Heart, Buenos Aires, Argentina, 1981

Dissertation Submitted in Partial Fulfillment

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Abstract

Postpartum Depression (PPD) affects 15% of women after childbirth. Its etiology includes psychoneuroimmunologic factors with long-lasting postpartum stressors that lead to allostatic overload. Using mindfulness-based stress reduction (MBSR) for PPD has not yet been studied. Addressing this literature gap, the potential benefits of including an 8-week MBSR component based on Beck's theory of PPD at support groups were examined in this phenomenological study based on a sample of 10 women and 2 group facilitators. Purposes of the study included describing the experience of PPD and the MBSR program, identifying the stage of behavioral change of the participants, and describing the population of women attending the PPD support groups. These assessments were carried out using coding and constant comparison, guided by the tenets of the transtheoretical model. Data triangulation safeguarded study validity and rigor. Results pointed to the value of utilizing the MBSR program in PPD support groups. Data analysis concluded in the identification of 9 stages and 5 themes of the PPD experience of which 2 constructs, *unexpected experience* and *feeling dismissed,* emerged as original contributions of the study. Positive impact on social change was evidenced at the individual level by women's report of high satisfaction with the support groups and the MBSR program; improved problem-solving and coping with anxiety, panic, and intrusive thoughts; and by positive behavioral change at Week 8. The updated knowledge about these women's experiences, along with the availability of a new tool for professionals to treat PPD, contribute to positive social change at a societal level by improving mothers' health and children's development.

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Chapter 1: Introduction to the Study

The postpartum period is characterized by challenging adjustments. Consequently, many postpartum women experience depression, which can affect the family wellbeing and expose the children to negative repercussions as demonstrated in the literature. Postpartum depressed women are often reluctant to seek out conventional treatment options (Flynn, O'Mahen, Massey & Marcus, 2006; Knudson-Martin & Silverstein, 2009; McGarry, Kim, Sheng, Egger, & Baksh, 2009; McIntosh, 1993; Sharp et al., 2010).

In the present study, I focused on the experience of postpartum depression (PPD) and of a mindfulness-based stress reduction (MBSR) approach to reducing postpartum stress. The study used a sample of 10 women over 18 years old attending free postpartum support groups in a large metropolitan area of the Midwest of the United States. Group facilitators, trained in the administration of the MBSR psychoeducational program, had the ability to use this technique, as they considered appropriate. It was important to include facilitators' discretion about whether and how to use the psychoeducational program to avoid disrupting the groups' current practice of adjusting the meetings to the needs of the participants.

As I explain further in the upcoming segments, reducing stress with an MBSR program can be an appealing way to improve the lives of postpartum women due to the easiness and low cost of its application as concluded by the group facilitators who participated in this study. In the present study, I describe: (a) the experience of women currently suffering from PPD, (b) the participants' experience of the MBSR program, and

(c) the facilitators' experience implementing the MBSR program. The stress reduction psychoeducational program was well accepted by postpartum women who are known to be reluctant to seeking out treatment (Buist et al., 2007), and could become a safe, inexpensive, and mainstream strategy to address PPD symptoms in contribution to current medical and behavioral treatment options.

The identification of an easy to use, cost-effective program to improve PPD symptoms in a setting well accepted by postpartum women could have a positive impact on social change. The potential impact on social change could result with more women utilizing a nonclinical tool to better cope with stress, and in doing so, reducing the severity, duration and impact of PPD on women and their families as further described in the segment dedicated to the study's significance.

Next, I will provide the background of the study, followed by the statement of the problem and the purpose of the study. A summary of the theoretical framework of the study precedes the research questions and hypotheses followed by the nature of the study. Definitions, assumptions, scope, and delimitations of the study will be then clarified together with the limitations. I end this chapter with a discussion regarding the study's significance.

Background of the Study

In the United States, approximately 615,000 pregnant and postpartum women develop a mood disorder, each year, according to Postpartum Support International (2010a) and the Centers for Disease Control (2008). This number represents 15% of the women from the overall population of pregnant or postpartum women, and as such

represents a significant need for prenatal and postpartum support services. Perinatal mood disorders include depression, anxiety, obsessive-compulsive, posttraumatic stress and bipolar disorders, and psychosis that may occur during pregnancy and the first year of the child's life (Kendall-Tackett, 2005).

As further described in Chapter 2, these disorders are also prevalent in the general population, but acquire specific characteristics when they occur during the perinatal period (Bennett & Indman, 2006). Despite being highly preventable and treatable, perinatal mood disorders can become chronic if they are left unrecognized and untreated. These disorders have been associated with poor parental and children's outcomes including impaired bonding (Barr, 2008; Maxted et al., 2005), attachment issues (Austin, 2010; Feldman et al., 2009; Leigh & Milgrom, 2008), child developmental delays (Stein, Lehtonen, Harvey, Nicol-Haxer, & Craske, 2009), and poor academic performance and behavioral issues, including depression and anxiety during adolescence (Evans et al., 2008; Halligan, Murray, Martins, & Cooper, 2007; Josefsson & Sydsjo, 2007; Pawlby, Sharp, Hay, & Keane, 2008).

Sleep deprivation and fatigue, characteristic of the postpartum period, affect hormones such as oxytocin and prolactin, and activate the hypothalamic-pituitary-adrenal axis by creating a neuroendocrine response (Groer et al., 2005). A feedback loop between fatigue, stress, and increased cytokines (an indication of immune activity against inflammation in the body) could contribute to depression and propensity for infectious illness in new mothers (Groer et al., 2005). The relationship between neuroendocrine activity, stress, and the immune system has been well established in the literature

(Akerstedt & Nilsson, 2003; Capuron et al., 2002; Corwin, 2000; Groer et al., 2005; Leonard, 2001; Pucak & Kaplin, 2005; Wilson & Warise, 2008). This relationship can be used to suggest interventions conducive to reduce stress and improve the immune response during the postpartum period as a nonclinical contribution to the treatment of mood disorders after childbirth (Pucak & Kaplin, 2005). These strategies may be part of a holistic approach including behavioral components to affect sleep, exercise, and nutrition, plus psychotherapy, psychopharmacology when appropriate, education, and social support (Wilson & Warise, 2008).

Given the psychoneuroimmunology (PNI) of women after the delivery of a child, and the effects of stress on PNI (Groer et al., 2005), it is appropriate to consider whether teaching stress reduction techniques at postpartum support groups might reduce symptoms and severity. However, I conducted a literature search specifically for the use of stress management and mindfulness techniques or interventions for postpartum depression and found no results. The present study provided valuable initial information about using a low cost, easily applicable resource to the conventional treatment of PPD.

Problem Statement

Current researchers who specialize on the effects of treatments for PPD have examined: (a) medical treatments (Cuijpers, Branuck, & van Staten, 2008; Forray & Ostroff, 2007; Goodman & Tyler-Viola, 2010; Misri, Reebye, Milis & Shah, 2006; Moses-Kolko, Berga, Kalro, Sit & Wisner, 2009; Usall iRodie, 2003); (b) behavioral treatments (Ammerman et al., 2005; Dennis, 2003 & 2004; Howard, Battle, Pearlstein, & Rosene-Montella, 2006; Pearlstein et al., 2006; Riecher-Rossler & Hoffecker Fallahpour,

2003); (c) physical exercise (Armstrong DipTeach & Edwards, 2004; Norman, Sherburn, Osborne, & Galea, 2010); (d) bright light therapy (Corral, Wardrop, Zhang, Grewal, & Patton, 2007); (e) hypnosis (Yexley, 2007); and (f) a relaxation program with unspecific guided imagery (Dennis, 2004). In their approaches, they have not addressed stress management programs such as relaxation training and specific guided imagery targeting the specific needs of postpartum women as identified in the literature. A psychoeducational program containing these two elements —relaxation and specific guided imagery—could be systematically offered, in addition to medical and behavioral treatment, as a cost effective and empowering way of improving mood during the postpartum period. In addition, research shows that only 15% (Flynn et al., 2006) to 47% (McIntosh, 1993) of postpartum depressed women receive professional help due to their reluctance to seek out treatment (Sharp et al., 2010). For this reason, it is important to identify the stage of behavioral change in which women self-report when they start attending the support groups given that it could affect their chances of improvement (Prochaska et al., 2004).

Purpose of the Study

The purpose of this qualitative, phenomenological study was manifold. The main purpose was to describe and understand the postpartum experience of women attending support groups in a metropolitan area of the Midwestern United States, and to compare their experience with the one identified by Beck (1992, 1993). A second purpose of the study was to understand how the MBSR psychoeducational program offered at the groups might have influenced the participants. I used this qualitative phenomenological approach

to (a) identify the most helpful aspects of the psychoeducational program, and (b) establish whether the themes proposed by Beck's (1993) theory remain representative of the issues that currently affect women with PPD. Although studying whether world events and crises may or not affect PPD was out of the scope of the present study, the consideration that the PPD experience might have changed over time seemed appropriate, as suggested by Ehrlich et al. (2009) who found that, after hurricane Katrina in 2005, PPD was significantly associated with the loss of nontangible resources such as feelings of being valuable, of financial, work and family stability, and of life being purposeful and meaningful.

Theoretical Framework

Three theories served as substantiation for this study: (a) Beck's (1993) theory of PPD was used to inform the thematic content of the MBSR intervention, (b) the allostasis theory of stress (McEwen & Wingfield, 2003) was used to explain the relationship between the physiological events of the postpartum time and their relationship with stress and depression, and (c) the transtheoretical model (TTM) was used to identify the stage of behavioral change (Prochaska, DiClemente, & Norcross, 1992) that may be linked to success in utilizing resources such as the psychoeducational program in this study. These theories, and how they apply to the present study, are described in Chapter two.

Research Questions

With the purpose of understanding: (a) the experience of women suffering from PPD and their experience of group participation, specifically, of the MBSR program; and

(b) the experience of the facilitators in offering the MBSR program, following research questions emerged:

1. Do women who experience PPD perceive themselves as different from those who have not had PPD? If so, how?
2. How do women who suffer from PPD describe their personal experience with the disorder?
3. Has this experience changed with time when compared with the experience of women interviewed by Beck (1993)? If so, how?
4. Were there any elements in the stress management program used in this study perceived as helpful by the women in the study?
5. Looking back at how they felt before and after their group experience, did women notice any difference? If so, what factors did the women think may have contributed to the change? What do they know that women who have not had PPD might not know? What would they tell women who are experiencing PPD?
6. How was the experience of the group facilitators administering the MBSR psychoeducational program?
7. What were the factors that prompted the facilitators to use or not use the program at the support groups?
8. What are the facilitators' impressions about the outcomes of using the MBSR program? And what are the differences with not using it, if any?

9. What were the main issues concerning the women attending the support groups as observed by the facilitators?

Nature of the Study

Beck's (1993) theory of PPD served as the basis for an MBSR psychoeducational program designed to teach women how to reduce stress to improve postpartum depression severity and symptoms in a nonclinical setting. This psychoeducational program was offered at two postpartum adjustment support groups in a metropolitan area of the Midwestern of the U.S. As part of my own efforts to protect human participants, group facilitators decided whether to utilize the MBSR program at their sole discretion at any given meeting. The use of a qualitative, phenomenological methodology was derived from the purposes of the study: (a) to better understand the current experience of PPD; (b) to identify potential deviations from Beck's (1993) theory of PPD; and (c) to identify the most useful aspects of the MBSR program.

I conducted the present study by inviting willing participants of the postpartum adjustments groups to share their experiences and insights about having PPD and about their group participation. Personal interviews with group participants and facilitators were the tools used to obtain data. Interviews with the facilitators focused on their experiences of teaching the MBSR program. I conducted all interviews in person after 8 weeks of group participation using a semistructured interview protocol. I analyzed and coded these data using coding and constant comparison with the assistance of a professional in the field of PPD who is also qualified in phenomenological research for data triangulation.

Definitions

Mindfulness. Mindfulness is a state of mind characterized by focusing on the present situation, and by increasing awareness of the physical sensations and emotions in the here-and-now with acceptance, lack of judgment, and without assigning them meanings or interpreting them (Kabat-Zinn et al., 1992).

Postpartum depression (PPD). PPD is a reproductive disorder (Halbreich, 2010) with onset within a year after the birth of a child (Austin, 2010; Wisner, Moses-Kolko, & Sit, 2010), presenting with the signs of a Major Depressive Episode as defined by the *Diagnostic and Statistical Manual of Mental Disorders Fifth Edition* (American Psychiatric Association, 2013), usually accompanied by anxious feelings and worry, and experienced by women as a feeling of "teetering on the edge" between sanity and insanity (Beck, 1993, p.44).

Psychoneuroimmunology (PNI). PNI studies the relationships between behavior, neuroendocrine processes, and the function of the immune system (Ader, 2007).

Stress. Stress is a state in which the organism experiences an internal or external event or circumstance (stressor) as threatening to its survival or well being (Walker, Green, Greenman, Walker, & Sharp, 2007) resulting in the loss of physiological balance of said organism (McEwen, 2005).

Assumptions

In this study, I assumed that participants were honest in their responses, provided accurate demographic information and candid, genuine responses to the qualitative questions during the interviews. These assumptions were necessary to accept the

subjective and personal information offered by the participants as the foundation to the study's conclusions about the PPD and the MBSR experiences, and about the potential transferability of the findings. It was also assumed that the nonstandardized instruments used as part of the interview protocol to capture information regarding demographics and stages of behavioral change are valid according to the assent provided by colleagues with expertise in the area of PPD.

Scope and Delimitations

The scope of the study consisted of interviewing 10 adult women after 8 continuous weeks of participation in a postpartum adjustment support group where a MBSR psychoeducational program had been offered. The MBSR program is based on Beck's theory of PPD (1993). As I will discuss in Chapter 2, although other theories of PPD exist, the present study findings were compared with Beck's theory alone. In the study, I addressed the possible impact of reducing stress as a means for improving symptoms in the population of postpartum depressed women as well as the identification of issues currently experienced by adult women affected by PPD.

In addition to participants, I also interviewed group facilitators to retrieve information about their own experience utilizing the MBSR program. I used a convenience volunteer sample of 12 participants that I selected from the population of women attending postpartum depression support groups and their facilitators in a metropolitan area of the Midwestern U. S. Although demographic information was retrieved with the purpose of describing the study's sample, its size did not allow for a

reliable comparison with larger populations, such as state, or national; thus affecting the transferability of the study's findings.

Limitations

A limitation of this study was that the results obtained apply to adult, white, mostly college-educated women in a metropolitan area of the Midwestern U. S. and may not be generalizable to the population as a whole. A second limitation was the setting of the study, which were the existing postpartum adjustment support groups. This limitation implies that further application to individual use or self-administration of the psychoeducational program will have to be tested by future research.

Prior to the initiation of this study, I knew one of the two group facilitators, who was known as a member of Postpartum Support International and presented at conferences. I introduced both group facilitators to the psychoeducational program prior to conducting the study. The group facilitators had discretion about whether to use the MBSR psychoeducational program in the groups, option which was stated on the informed consent document (Appendix C).

Significance of the Study

In the present study, I addressed a gap in the existing literature by providing information about adding stress reduction to the conventional treatment of PPD. During the course of the study, demographic information about the women attending postpartum support groups in this metropolitan area was retrieved for the first time. At an individual level of positive social change, the present study directly resulted in the improved well-being of women affected by PPD. At a community level, the potential reduction in

children's exposure to PPD constituted an implication for social change. Families, and specifically, children exposed to mothers who have untreated PPD may have negative physical and behavioral health consequences if untreated PPD in the mother becomes chronic (Austin, 2010; Evans et al., 2008; Feldman et al., 2009; Halligan et al., 2007; Maxted et al., 2005; Pawlby et al., 2008; Stein et al., 2009).

At a societal level, the present research may contribute to positive social change by raising awareness in the health care community about a low cost, easy to implement program, which could reduce the stigma associated with the disorder. The use of the stress management program offered at the support groups in this study could be adapted and expanded to the antenatal and the in-hospital period as a primary prevention strategy additionally contributing to sustained positive social change. Public and professional awareness can be improved by the information outcomes about the current experience of PPD obtained through the phenomenological approach in this study.

Summary

Postpartum depression affects 15% of women after childbirth (Centers for Disease Control, 2008). Even though PPD is a disorder that responds well to timely treatment (Ammerman et al, 2005; Dennis, 2003 & 2004; Howard et al, 2006; Misri et al., 2006; Moses-Kolko, Berga, Kalro, Sit & Wisner, 2009; Pearlstein et al., 2006), women are reluctant to seeking help (Sharp et al., 2010) resulting in only 15% of affected women being treated (Flynn at al., 2006). Public lack of awareness about PPD, cultural expectations related to motherhood, and mental health stigma make it difficult for a woman to decide to take medication or attend psychotherapy (Bilszta, Ericksen, Buist, &

Milgrom, 2007; Leung, Arthur & Martinson, 2005; Sword, Busser, Gannan, McMillan, & Swinton, 2008). Using a mindfulness-based stress reduction strategy as a means for decreasing the symptoms of PPD had not yet been studied, and was therefore an innovative contribution of the present study to the field of PPD.

In Chapter 2 of this dissertation, I will provide an integrated view of the postpartum woman in relation to her physiological and psychosocial adjustments, and discuss how these adjustments together with stressors characteristic of the postpartum period contribute to create an environment conducive to the development of PPD. A description of postpartum mood disorders, and specifically PPD, is provided in Chapter 2 together with information about typical stressors of the postpartum period. The theoretical tenets of this study included Beck's theory of PPD (Beck, 1993), the allostasis theory of stress (McEwen & Wingfield, 2003), and the transtheoretical model of behavioral change (Prochaska et al., 1992). In the chapter, I provide information about how these three theories can be combined to understand how stress may contribute to PPD symptoms, and the reasons for women to be reluctant to seek out treatment.

I conclude Chapter 2 by providing a summary of the types of studies conducted in the field of PPD and an explanation of the qualitative phenomenological approach selected for the present study. The methodology is thoroughly explained in Chapter 3 including the research design and procedure, the instruments used for collecting data, sampling information, and the application of qualitative analyses to the corresponding research questions. In Chapter 4, I present the descriptive and qualitative results that I will discuss in Chapter 5.

Chapter 2: Literature Review

The lack of programs focusing on the specifics of postpartum stress as a means to diminishing the severity and duration of PPD was the problem that I addressed in the present study. This study's purposes were to describe the current PPD experience, and then to compare participants' lived experiences with Beck's theory of PPD (1993), and finally to identify the most helpful aspects of the psychoeducational program offered at the PPD support groups in a large city of the Midwest in the United States. I conducted this literature review with the goal of providing theoretical substantiation for studying the experience of women attending postpartum adjustment support groups in which an MBSR psychoeducational program may be offered. Special focus of the literature review was directed to identifying programs that address the needs of postpartum depressed women as identified by Beck (1993).

PPD is considered the most common complication of childbirth, affecting one in eight women who deliver a child (Postpartum Support International, 2010a). PPD has the characteristics of major depression often accompanied by irritability (Bennett & Indman, 2006) and anxiety (Austin, 2010), and it can appear any time during the first year postpartum (Austin, 2010; Wisner et al., 2010). In this literature review, I present the diagnostic definition of PPD, after which the psychosocial consequences of untreated PPD are presented to justify the relevance of the study in terms of the social impact of the disorder. Next, I provide a discussion about the multiple factors that may contribute to the development of PPD. In this discussion, I include biological and psychosocial considerations that could provide an explanation of the effects of stress on the

development of PPD. Finally, I use a description of the allostatic theory of stress (McEwen & Wingfield, 2003) to explain how the characteristic experiences of women in the postpartum period can contribute to stress, and, through stress, lead to PPD.

Beck (1992, 1993) developed a theory of PPD, termed "teetering on the edge" (p. 44), to describe how women experience PPD internally like a process with specific stages as I describe later in this literature review. Two other theoretical approaches to explain the experience of PPD appear on this review. Edhborg, Friber, Lundh, and Winstrom (2005) described PPD as struggling in the context of the pervasive experience of loss around the redefinition of the woman's relationship to self, her partner, and the child. Knudson-Martin and Silverstein (2009) described the PPD experience as suffering in silence, focusing also on the relational aspect of PPD, the woman's isolation, and the important cultural component related to social expectations around motherhood. Although all three theories of PPD were developed using a grounded theory approach, Beck (1993) based her theory on a preliminary phenomenological study (Beck, 1992), in which she identified 11 main themes that she incorporated into her later theory (Beck, 1993) as I describe later in this chapter. Beck (1993) thoroughly identified the main components of the PPD experience organized in themes and stages which I integrated in the content of the stress management program offered in the support groups as part of the present study.

Later in the chapter, I describe succinctly the transtheoretical background to provide a health psychology perspective to explain the stage of behavioral change in which women attending the support groups may most benefit from participation. The

transtheoretical model (TTM) proposes that sustainable behavioral change occurs in stages, and that effective interventions are well suited to the stage of behavioral change of their recipients (Prochaska et al., 1992). After providing an explanation for the rationale of a stress management program for PPD, I describe the integral parts of a mindfulness-based stress reduction program. Finally, I identify the most prevalent methodological approaches that have been used in PPD research and summarize the theoretical tenets of a phenomenological approach.

I conducted this literature review searching the following databases: Academic Search Premier and Complete, CINAHL, Medline, PsycArticles, PsycInfo, SocIndex, PubMed, and Ovid utilizing the library services of Walden University and Beaumont Health System's medical library. The key words that I used for this literature search were: *postpartum depression, postnatal depression, perinatal mood disorders, effectiveness of group support, effectiveness of group interventions, stress, allostasis, psychoneuroimmunology, prevalence, consequences, risk factors, mindfulness, transtheoretical model, interventions, programs* and *theory* in different combinations. The literature and medical updates sections of MedEd PPD.org—a website devoted to the public and professional awareness and education on perinatal mood disorders—complemented the search. In addition, I used an RS feed on Google, and a subscription to Postpartumprogress.net as a consistent flow of currently published articles on the field of PPD that were then evaluated for scholarly quality prior to being incorporated in this review. There were no limitations in the years searched to perform this literature review, and materials obtained through attendance to conferences in the field were consulted, and

included when appropriate, as were seminal works by current researchers and practitioners.

The literature search for the effectiveness of postpartum support groups produced no results. Broadening the search by omitting the word *effectiveness* helped me to identify one study by Wandersman, Wandersman, and Kahn (1980) who focused on participation in parenting groups and measured participants' levels of well-being, marital interaction and parenting sense of competence. At that time, Wandersman et al. (1980) did not find postpartum parenting group participation to be a predictor of postpartum adjustment.

Another set of researchers identified in this search focused on the effects of social support on depression, attitudes, and behavior in new mothers (Fleming, Klein, & Corter, 1992). These authors found no positive effects in maternal depression after 8-week participation in a social support group but found a negative effect on maternal self-confidence (Fleming et al., 1992). A third study was conducted at the First Steps postpartum support groups facilitated by family medicine residents at a hospital in Rhode Island (Sutter, White, Bora, Morchen, & Magee, 2012). These researchers were not able to conduct quantitative analyses due to irregular participation in the monthly meetings. However, qualitative analyses identified high levels of satisfaction and increased well-being as reported by three regular participants (Sutter et al., 2012). None of the three studies that I have described here mentioned or used a standardized tool to measure the effectiveness of group participation. The groups in those studies were not specifically dedicated to postpartum depression but to a social, a parenting, and a more general

postpartum support group that addressed medical, nutritional, and developmental issues among others including postpartum depression (Fleming et al., 1992; Sutter et al., 2012; Wandersman et al., 1980).

Goodman and Santangelo (2011) conducted a meta-analysis including 11 studies designed to determine the effectiveness of group treatment for PPD. In their analysis, these authors found that the heterogeneity among studies in regards to type of group intervention, design, sample size, type of measurements used, and timing made it difficult to arrive to conclusions about the effectiveness of PPD treatment and support groups. For this reason, these researchers identified the effectiveness of PPD support groups as a gap in the literature and recommended that future studies focus on this issue. They also recommended assessing whether effectiveness might be affected by life partners attending the groups and by psychiatric comorbidities (Goodman & Santangelo, 2011). On Table 1, I summarized the studies found in the literature search that focused on the effectiveness of group treatments for PPD.

Table 1

Summary of Studies on the Effectiveness of Group Treatments and Support for PPD

Studies	Group type	Findings	Comments
Honey, Bennett & Morgan (2002), UK. Ugarriza (2004), US.	Psychoeducational combined with CBT therapy and relaxation.	8-10 week participation significantly reduced EPDS scores	Therapeutic/ psychoeducational mix may confound results.
Clark, Tluczek, & Brown (2008), US. Clark, Tluczek, & Wenzel (2003), US. Highet & Drummond (2004), Australia. Meager & Milgrom (1996), Australia. Milgrom, Negri, Gemmil, McNeil, & Martin (2005), Australia. Mulcahy, Reay, Wilkinson, & Owen (2010), Australia. Puckering, McIntosh, Hickey, & Longford (2010), UK.	Therapy groups using CBT, IPT, counseling, and family-centered relational therapy.	Significant reduction of PPD symptoms. Mixed results regarding superiority of individual vs. group therapy.	Do not address psychoeducational support groups for PPD.
Wandersman et al. (1980), US	Parenting Support group for first time parents	Group participation did not predict postpartum adjustment.	Parenting, marital, and network support without specifically addressing PPD.
Chen, Tseng, Chou & Wang (2000). Taiwan. N=60 (30, intervention; 30, control) recruited at hospital postpartum units. BDI and PSS (stress)	Support groups facilitated by a nurse. Semistructured.	4-week participation resulted in significant decrease in depression and stress in the intervention group. No effect found on self-esteem.	Closed groups with 5-6 mothers at 6-10 weeks postpartum and their infants.
Fleming, et al. (1992). Canada. N=142 (44, support group; 15, support by mail; 83, no intervention), not single, primiparous, with full-term vaginal deliveries, recruited at postpartum unit in a suburban hospital.	Support groups facilitated by 2 psychologists. Semistructured with discussions, lecturing and exercises.	8-week participation yielded no significant difference between support group and no intervention. However, 90% of group participants found the group to be helpful and enjoyable.	Closed groups with 6-8 mothers at 6-8 weeks postpartum with their infants.
Sutter et al. (2012). US. N=12. Exploratory study with low income participants recruited by their physicians	Support group facilitated by residents and medical students. Unstructured.	Mothers reported improved knowledge of community resources, infant feeding and safety, and feeling supported.	No quantitative determination of group support efficacy for improving maternal wellbeing.

The Spectrum of Postpartum Mood Disorders

PPD belongs to the group of perinatal mood disorders, of which it is the best known (Postpartum Support International, 2010a). The term *postpartum depression* is commonly applied to the different mood disorders and emotional reactions after childbirth (Beck, 2006; Kleinman, 2009). The word *perinatal* means around birth and includes pregnancy and the period that extends up to 1 year after delivery, also called *postpartum* (Austin, 2010). The terms *prenatal or antenatal depression* refer to depression during pregnancy and postnatal or postpartum depression refer to depression with onset after birth. The term *perinatal depression* comprises both antenatal depression and postnatal depression (Austin, 2010). Likewise, the time-of-onset qualifiers *prenatal* and *postnatal* can be used to describe different mood disorders, which can all be grouped under the term *perinatal mood disorders* (Postpartum Support International, 2010a). It is important to differentiate between these disorders to provide appropriate treatment (Beck, 2006; Kleinman, 2009). Next, I provide a description of the other postpartum mood disorders to distinguish between these definitions and the diagnostic definition and prevalence of PPD.

The spectrum of postpartum mood disorders includes PPD, postpartum panic disorder, postpartum obsessive-compulsive disorder, postpartum bipolar II disorder, postpartum posttraumatic stress disorder, and postpartum psychosis (Beck, 2006). Although all of these disorders have a postpartum onset, they differ in prevalence and symptoms and often in risk factors as well. It is important to distinguish between these postpartum mood disorders to provide an accurate diagnosis and treatment (Beck, 2006).

Postpartum Panic Disorder

This disorder is characterized by episodes of fear with physical symptoms such as palpitations, shortness of breath, sweating, dizziness, chest pains, numbness, feelings of impending death or of losing control that the woman experiences for the first time in her life (Beck, 2006). Wenzel, Gorman, O'Hara, and Stuart (2001) surveyed 788 postpartum dysphoric women and found a prevalence of 11% who reported panic symptoms. Main risk factors are a personal or family history of panic disorder, and thyroid dysfunction (Bennett & Indman, 2006).

Postpartum Obsessive-Compulsive Disorder (PP-OCD)

Main symptoms associated with PP-OCD include intrusive, egodystonic thoughts often related to voluntary or involuntary harm befalling the infant (Fairbrother & Abramowitz, 2006; Fonseca Zambaldi et al., 2009). Compulsive behaviors such as changing the baby when not needed (Beck, 2006) are meant to avoid the intrusive thoughts or their consequences (Fairbrother & Abramowitz, 2006). For this reason, these obsessions are not associated with a heightened risk of harming the baby or self (Fairbrother & Abramowitz, 2006). Fonseca Zambaldi et al. (2009) found a prevalence of 2.3% of OCD with postpartum onset, although Bennet and Indman (2006) reported a prevalence of 3%-5%. A personal or family history of OCD and other psychiatric disorders, physical illness, obstetric complications, and taking care of more than one child are considered risk factors (Fonseca Zambaldi et al., 2009).

Postpartum Bipolar II disorder

Women with bipolar disorder often have their first depressive episode after childbirth, which may result in a misdiagnosis as PPD (Cullen-Drill, Smith, & Morris, 2008; Sharma, Burt, & Ritchie, 2009). In bipolar disorder, the severity of the manic symptoms is one of the factors that helps distinguish bipolar I—with most severe mania—from bipolar II with a less severe hypomania (American Psychiatric Association, 2000). A period of hypomania with onset on the first postpartum day is common in over 9% of women, and although not severely impairing, it is clinically significant for the development of later postpartum bipolar disorder (Sharma et al., 2009).

Heron, Haque, Oyebode, Craddock, and Jones (2009) found a significant increase in hypomanic symptoms in 11.7% of women during the first postpartum week with progressive decrease to 4.9% by 8 weeks postpartum. Postpartum bipolar II disorder is characterized by hypomanic episodes with elevated and often irritable mood, increased talking, sleeplessness, racing thoughts, increased goal orientation, and inflated self-esteem for periods longer than four days usually followed by a major depression episode (Beck, 2006). The prevalence of bipolar disorder with postpartum onset has not been statistically established so far, and a family or personal history of bipolar with onset in the prenatal period constitutes main risk factors to developing the disorder after childbirth (Cullen-Drill et al., 2008; Sharma et al., 2009).

Postpartum Posttraumatic Stress Disorder (PP-PTSD)

PP- PTSD may be triggered by traumatic events occurring around childbirth (Ayers, McKenzie-McHarg, & Eagle, 2007; Beck, 2004 & 2006), or by the elicitation by

childbirth of past traumatic events such as sexual abuse (Bennett & Indman, 2006). According to Beck (2006), the traumatic events may range from life threatening situations for mother or baby to interactions with the health care team perceived by the woman in a negative way such as being ignored or feeling powerless (Ayers et al., 2007). Common symptoms are terrifying nightmares, flashbacks of the traumatic childbirth events, hyperarousal, anger, panic, lack of concentration, and avoidance of situations that remind her of the traumatic events (Beck, 2004, 2006). With the exception of forceps assisted delivery, it is the perception of the events around birth as being traumatic rather than the specific obstetric interventions which are associated with subsequent postpartum PTSD symptoms (Ford, Ayers, & Bradley, 2010). According to Bennett and Indman (2006), postpartum PTSD has an incidence of 6%, which coincides with the 1% to 6 % reported by Postpartum Support International (2010b). Ford et al. (2010) reported that 7% of the women who had experienced a traumatic childbirth experience would likely develop PP-PTSD symptoms.

Postpartum Psychosis

Postpartum psychosis is the most severe of the mood disorders affecting postpartum women. A Swedish study, the largest to date, reported a prevalence of 1.2 in 1,000 women (Valdimarsdottir, Hultman, Harlow, Snattingius, & Sparen, 2009). Postpartum Support International (2010c) provided a 1 to 2 per thousand rate of prevalence for postpartum psychosis or 0.1%. Valdimarsdottir et al. (2009) found a significant correlation between postpartum psychosis, maternal age older than 35 years, and low infant birth weight. Hallucinations and delusions usually related to the infant are

experienced as egosyntonic; that is, as consistent with the mother's delusions (Fairbrother & Abramowitz, 2006), and contribute to an overall 5% suicide and 4% infanticide rates attributed to this disorder (Bennett & Indman, 20006). Other common symptoms include extreme agitation, sleeplessness, confusion, anorexia, exhilaration and rapid mood swings (Beck, 2006). Postpartum psychosis typically has an early onset with more than 90% of the hospitalizations occurring within the first 14 days postpartum (Valdimarsdottir et al., 2009), and it always constitutes a psychiatric emergency with indication of hospitalization, or around the clock supervision by another adult (Beck, 2006).

Postpartum Depression (PPD)

PPD is a disorder characterized by symptoms of major depression often presenting with additional anxiety, irritability, worry, and feelings of uneasiness around the baby (Bennett & Indman, 2006). Although the *Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5)* includes PPD as a Major Depressive Episode with peripartum onset within four weeks postpartum (American Psychiatric Association, 2013), experts in the field suggested that PPD can occur at any time during the first year after childbirth (Austin, 2010; Wisner et al., 2010), and often includes symptoms of anxiety (Austin, 2010), such as excessive worry and fear of being alone with the child (Brockington, 2004) or losing control (Beck, 1993). Contrary to the proposed revisions to *DSM-IV-TR* (APA, 2010) to extend the postpartum onset specifier to 6 months postpartum, *DSM-5* kept the 4 week postpartum specifier but noted that major depressive episodes may appear "months following delivery" (American Psychiatric Association, 2013, p. 186). According to the *DSM-5*, the criteria for a Major Depressive Episode

include either depressed mood and/ or loss of interest or pleasure in things one used to enjoy, plus at least four of the following symptoms present during two consecutive weeks: (a) significant unexplained weight change, (b) insomnia or hypersomnia, (c) psychomotor retardation or agitation as observed by others, (d) fatigue or loss of energy, (e) feeling worthless or guilty, (f) reduced concentration or difficulty making decisions, and (g) thoughts of death, suicidal ideation, plans, or attempts (APA, 2013). When compared with depression in nonpostpartum women, some symptoms seem to be significantly more prevalent in PPD such as agitation and fogginess that affects concentration and the ability of making decisions (Bernstein et al., 2008). Schanie, Pinto-Foltz, and Logsdon (2008) analyzed the content of popular literature on PPD from 1998 to 2006, and found inconsistent and often misleading information about the disorder in general, and specifically about its prevalence.

Prevalence. The prevalence of PPD has been found at 12-14% (Center for Disease Control and Prevention, 2008; Paulson, Dauber & Leiferman, 2006; Segre, O'Hara, Arndt & Stuart, 2007). However, Postpartum Support International (2010a) provided a range of prevalence from 15% to 20%, which is consistent with Mancini, Carlson, and Albers (2007) who found a prevalence of 16% at 6 weeks postpartum. An Australian study by Austin et al. (2010) with 1,549 middle class women over 18 years of age found a rate of 26.1% of depression between the second and the eighth months postpartum. The differences may be explained by the sampling used since PPD seems to be more prevalent in low income women, women with an education level lower than college, single, young, and multiparous mothers (Gavin et al., 2005; Segre et al., 2007).

The issue of the prevalence of PPD is often controversial. The results of a national survey about psychiatric disorders in pregnant and postpartum women showed a significantly higher prevalence of major depression in postpartum women than in the general population (Vesga- Lopez et al., 2008). The federal Agency for Healthcare Research and Quality in collaboration with several offices within the U.S. Department of Health and Human Services ordered a large systematic review of the research on perinatal depression (Gavin et al., 2005). The results of the review showed a prevalence of 19.2% of PPD during the first three months after delivery including mild to major depression with 7.1% having major depression. The highest prevalence was found in the third month postpartum at 12.9%. Incidence, defined as depression that started during a specific time period, was 14.5 % with major depression at 6.5% (Gavin et al., 2005).

The challenges of the diagnostic definition of PPD. Differences in the definition of PPD used may explain the differences in the reported prevalence. According to Rowe, Fisher, and Loh (2008), patients diagnosed with PPD had other disorders such as anxiety and phobias. These authors warned about the need to identify PPD as a unique diagnosis to provide adequate treatment. According to Rowe et al. (2008), the instrument most widely used to detect PPD is the Edinburgh Postnatal Depression Scale (EPDS) that detects anxiety symptoms but does not distinguish between postpartum depression and postpartum anxiety. Rowe et al. found that 73% of women who experienced PPD also had anxiety symptoms, which was interpreted as a sign of the complexity of what they called *postpartum distress*. Rowe et al. concluded that different aspects of postpartum distress may be included under the PPD rubric possibly disregarding significant

comorbidities, and they cautioned that no agreement exists whether anxiety features should be considered symptoms of PPD or should be considered as a separate diagnosis of postpartum anxiety (Rowe et al., 2008).

Halbreich (2010) discussed reproductive periods in women's lives when they need to adjust to hormonal changes, and classified PPD as a reproductive related disorder (RRD) because its onset is linked to childbirth. Women who suffer from PPD seem to show a genetic vulnerability to the disorder that increases with the age of the mother and with subsequent births. This characteristic of increased propensity with age and recurrence is present in other RRDs such as premenstrual dysphoric disorder (Halbreich, 2010). Halbreich (2010) acknowledged the wide range of reported prevalence as the consequence of socio-cultural factors originated in the broad, diverse population in which PPD is present. This author referred to conceptual variability as the differences in the definition and diagnostic criteria applied to the disorder by different researchers, which consequently created the variability of prevalence reported by different studies due to a lack of consistency in the definition of the constructs being measured each time (Halbreich, 2010). For the purposes of the present study, PPD has been operationally defined as stated in Chapter one.

Psychosocial consequences of untreated PPD. The psychosocial repercussions of not treating PPD affect exposed children as well as their mothers. In this section, I summarize the literature related to those consequences.

In the child. A large, continuing, longitudinal study in England showed that the negative impact of maternal depression on the mother-baby relationship reveals itself in

insecure attachment of the infant with a negative impact on the mental health outcome of the child as measured at 5 years of age (Austin, 2010; Murray et al., 1999, 2010). At 5 years old, children of women who had suffered from PPD tended to display diminished self-agency and increased self-negation independently from age, gender and negative events occurred during these years (Murray et al., 1999). The continuation of this study revealed that exposure to postnatal maternal depression correlates with higher incidence of anxiety in the child at 13 years old (Halligan et al., 2007). At 16 years old, male children of postnatally depressed mothers had significantly lesser results in a cognitive test for secondary education performance. These results were linked to the quality of maternal interactions and early childhood IQ (Murray et al., 2010).

In a study including 93 women and their infants attending a colic-and-crying clinic, Maxted et al. (2005) found a positive correlation between the severity of maternal depression symptoms and difficult infant temperament, parental stress, and family functioning problems. Pawlby et al. (2008) found a significant correlation between PPD and psychiatric disorders in 11 years old children. Evans et al. (2008) found that six to seven year old children of women who had suffered from PPD tended to display more emotional symptoms when faced with stressors, independently of their genetic predisposition.

A more recent study about the impact of maternal depressive symptoms on the infant's social-emotional development revealed that depressed mothers displayed less sensitivity to respond accurately to the baby's cues, which had a negative impact on the baby's social engagement (Feldman et al., 2009). Maternal sensitivity was shown in the

responses to the child's behavior such as gaze, affect, voice, and touch that appeared attuned to the baby's social cues, and that seemed to be disrupted by the characteristic withdrawal of depressive mothers. These results suggest that lower maternal sensitivity also negatively affects the reaction of the infant to stress as measured by cortisol levels at nine months postpartum (Feldman et al., 2009). The characteristic preoccupation of postpartum depressed women that manifests as recurrent negative thinking seems to affect maternal sensitivity and responsiveness to infant cues, which results in decreased infants' learning, attention span, social referencing, and emotional regulation (Stein et al., 2009).

In the mother. Mothers with PPD were likely to have further depressive episodes (Halbreich, 2010), and continued use of antidepressants and daily medications at a four year follow-up (Josefsson & Sydsjo, 2007), which could possibly affect the family's psychosocial environment (Halligan et al., 2007). It is the exposure to these subsequent depressive episodes in the mother that correlates with depression in the adolescent offspring (Halligan et al., 2007). In women with a history of severe mood disorders such as bipolar or major depressive episode, the risk of committing suicide during the first year postpartum increases by 70 times (Appleby, Mortensen, & Faragher, 1998).

According to Leigh and Milgrom (2008), postpartum depressed women's attachment to the infant 3 months after delivery may be decreased due to difficult interactions based on the perception of the child as having a difficult temperament. Although Maxted et al. (2005) found no correlation between colic symptoms and the severity of the maternal depression, intense crying together with severe depressive

symptoms resulted in higher maternal stress and reduced maternal self-esteem in regards to the mother's parental sense of competence and parenting skills (Paulson et al., 2006). Women with PPD reported a delayed adaptation to the maternal role which was mediated by indecisiveness and impaired ability to plan and complete tasks (Barr, 2008). The depressed mothers in Barr's (2008) study interacted little with their infants and reported caring for their babies in a mechanical way.

Women who suffered from PPD had poorer physical health as reported in a Canadian study by Da Costa, Dritsa, Rippen, Lowensteyn, and Khalife (2006). These researchers found that depressed mood during the postpartum period correlated with decreased physical wellbeing and functioning, increased pain, reduced vitality, a more negative general health perception, lower social functioning, and higher role limitations due to emotional issues. Da Costa el al. (2006) found no significant correlation between these health outcomes and the severity of the depressed mood with even mildly depressed mothers showing significant detriments to their health in all of the before mentioned areas. Gutke, Josefsson, and Oberg (2007) found that women who suffered from PPD reported 3 times more low back pain than nondepressed postpartum women did. These findings underscore the importance of treating even the mildest depression in postpartum women (Da Costa el al., 2006).

In summary, exposure to PPD has several detrimental effects. It negatively affects the attachment in both mother and child (Austin, 2010; Leigh & Milgrom, 2008). In children, PPD exposure creates an increased risk for behavioral problems and mental illness later in life (Evans et al., 2008; Feldman et al., 2009; Halligan et al, 2007;

Josefsson & Sydsjo, 2007; Murray et al., 1999, 2010). PPD decreases the physical (Da Costa et al., 2006; Gutke et al., 2007) and mental health of the mother (Appleby et al., 1998; Austin, 2010; Da Costa et al., 2006; Halbreich, 2010; Halligan et al., 2007; Maxted et al., 2005) as well as her parental sense of competence (Paulson et al., 2006). The perinatal period is characterized by specific circumstances that involve dramatic physiological changes originated during pregnancy and childbirth, processes that also initiate a fundamental change in lifestyle as I discuss in the following sections.

Biological and Environmental Characteristics of the Postpartum Period

The perinatal period, including pregnancy and the time after childbirth, is characterized by intense hormonal changes, accompanied by changes in the immune system present in the woman to protect her from the hazards created by childbirth (Neumann, 2003). In the present segment of this literature review, I will discuss these changes, and their effect on postpartum women undergoing sleep deprivation and the extreme psychological adjustments that accompany the transition to motherhood. The biological characteristics of the postpartum period include psychoneuroimmunologic changes integrated by the hormonal and immune changes occurring after childbirth, and the effects of fatigue and sleep deprivation. Environmental factors that affect the postpartum period include the psychosocial changes that occur because of the new lifestyle created by the transition to motherhood and the stress generated by such fundamental transition.

Biological Characteristics of the Postpartum Period

Psychoneuroimmunology (PNI) of the postpartum woman. PNI studies the interaction between neuroendocrine, immunologic, and psychosocial factors (Ader, 2007). According to Ader (2007), the neuroendocrine factors are mediators of the effects of psychosocial factors on the immune system. In the following segments, I will describe the neuroendocrine and immunologic characteristics of the postpartum period.

The hypothalamic-pituitary-adrenal (HPA) axis. According to a theoretical review of animal studies by Neumann (2003), the hypothalamic-pituitary-adrenal (HPA) axis that is normally activated as a response to stress is deactivated in new mothers diminishing their perception of stress. According to Newmann (2003), during the postpartum period, the decreased activity of the HPA axis acts on the brain's limbic areas to mediate a decreased reaction to emotional and physical stress which may affect the perception and the meaning attributed to the stressors. The downside of this muted perception of stressors could be women paying less attention to signs of exertion, and failing to rest and reduce activity appropriately.

Kammerer, Taylor, and Glover (2006) hypothesized that the difference in the activity of the HPA axis during pregnancy and postnatally could determine whether a woman becomes depressed prenatally or postpartum. During pregnancy, the HPA axis activity is elevated, and consequently, so are corticotrophin releasing hormone (CRH) and cortisol (Lommatzsch et al., 2006), both progressively increasing during the last 6 to 8 weeks of pregnancy (Kammerer et al., 2006). Increased CRH during pregnancy blunts the stress response and the responsivity of blood pressure to stress (DiPietro, Costigan, &

Gurewitsch, 2003). Cortisol levels normally peak 30 minutes after awakening in the morning and in the evening (Kammerer et al., 2006). However, stress caused by life events was associated only with the evening cortisol peak at 30 weeks gestational age measured in saliva in a study by Obel et al. (2005) with 603 pregnant women. After delivery, the HPA axis activity decreases with a consequent progressive reduction in cortisol which reaches normal levels of 294 nmol/ lserum (Lommatzsch et al., 2006) after several weeks postpartum (Kammerer et al., 2006). According to Kammerer et al. (2006), the activity of the HPA axis is elevated in melancholic depression and reduced in atypical depression. This finding lead these authors to suggest that prenatal depression would tend to be more of the melancholic type with anxiety, sleep deprivation, morning worsening, and high cortisol levels. In contrast, postnatal depression would tend to be more atypical with hypoarousal and apathy, sensitivity to social rejection, evening worsening, low cortisol secretion, and a strong association with bipolar II disorder (Kammerer et al., 2006).

Other important hormones in the perinatal period. Estrogen, estradiol, and progesterone are elevated during pregnancy (Kammerer et al., 2006) and sink right after delivery to reach their lowest level on the fifth postpartum day (Kammerer et al., 2006), a time associated with strong symptoms of postpartum blues (Harris et al., 1994). After delivery, elevated levels of oxytocin and prolactin contribute to lactation and the development of maternal behavior towards the infant (Neumann, 2003). These hormonal changes in addition to the deactivation of the HPA axis are part of the adaptive neuroendocrine changes that take place to contribute to fetal development, the survival of

the newborn infant, and to protect the mother against the effects of her extreme hormonal changes around the processes of labor and delivery (Newmann, 2003). In other words, the hormonal changes described above have the important function of protecting the maternal organism against the extreme changes that occur during pregnancy and elicit nurturing and defensive behaviors in the mother that protect the offspring, and support lactation (Newmann, 2003).

The hormones present during the perinatal period have specific functions related to pregnancy and birth, and affect maternal mood (Kammerer et al. 2006). Estrogen and progesterone activate the raphe and the locus coereleus of the brain, areas that are associated with mood regulation (Kammerer et al., 2006). Based on research showing that estrogen stimulates the synthesis of serotonin and norepinephrine, and it also activates brain-derived neurotrophic factor (BDNF), a protein with a function in the growth, differentiation, synapses, and repair of neurons, Payne (2003) concluded that stress may constitute a possible mediator of depression by reducing the expression of BDNF in the hippocampus. Low estrogen level, characteristic of the postpartum period, causes low levels of BDNF with a potential increase in depressive symptoms in vulnerable women (Payne, 2003). In other words, BDNF has an important role in the maintenance and good functioning of neurons. Low levels of BDNF as during stress have an impact on mood. The relationship between low estrogen and low BDNF could explain the role of estrogen on the synthesis of serotonin, and hence estrogen's antidepressant effect in predisposed women with PPD (Payne, 2003).

Contrary to Payne's (2003) suggestion, Lommatzsch et al. (2006) could not find a significant correlation between altered levels of estrogen and decreased BDNF. However, they found significantly decreased levels of serum BDNF during the last trimester of pregnancy and until 8 weeks postpartum independently of depressive symptoms (Lommatzch et al., 2006). These authors acknowledged the relationship between low BDNF and depressive symptoms and traits in the general population, and found a strong positive association between 5-HT, a serotonin precursor, and BDNF levels in the subgroup of women 20 to 40 years old independently of their gestational status (Lommatzsch et al., 2006).

Postpartum thyroiditis is an autoimmune disease that produces an inflammation of the thyroid gland because of the prenatally increased tolerance that is necessary to protect the fetus against the mother's immune system (Muller, Drexhage, & Berghout, 2001). According to Muller et al., (2001), postpartum thyroiditis occurs in 5-to7 % of women during the first year after childbirth and is highly associated with depression. Depression is the most prevalent symptom of postpartum thyroiditis during its hypothyroid phase, possibly due to hypothyroidism negatively affecting the neurotransmission of 5-HTP, a serotonin precursor. However, Muller et al. (2001) pointed out that the association between postpartum thyroiditis and PPD has been so far inconclusive.

Inflammatory processes. Inflammation is the immune response of the body to trauma, infection, or illness (Rabin, 2007). According to Rabin, inflammatory responses are usually localized and targeted towards an infection's agent or a wound, and they are characterized by redness, swelling, elevated temperature of the wound site, and pain.

Inflammatory processes are usually accompanied by fatigue, sleepiness, feeling of being sick, and often fever (Rabin, 2007). Trauma, fatigue, stress, pain, and inflammation, which are characteristic of the postpartum period, can also be found in depression (Wilson & Warise, 2008). There is a connection between stress such as after a traumatic birth experience, pain like during persistent breast soreness in lactating women, and higher rates of depression (Kendall-Tackett, 2005). In the immune system, white blood cells secrete peptides called cytokines that regulate the inflammatory response in the presence of illness or trauma by binding to receptors in target cells to change the function of those cells (Corwin, 2000; Segerstrom & Miller, 2004). A relationship exists between depression and immune system activity related to inflammatory processes regulated by cytokine activity as suggested by a study of the emotional effects of cytokine therapy in cancer patients (Capuron et al., 2002). Capuron et al. (2002) found that depressive symptoms of loss of appetite, negative thoughts, suicidal ideation, and lack of concentration increased as cytokine therapy progressed, and levels of tryptophan (TRP), an aminoacid needed to produce serotonin, decreased. Corwin (2000) found that cytokines' circulation in blood increases with stress, illness, and trauma. However, a large meta-analysis by Segerstrom and Miller (2004) which included over 300 empirical articles distinguished between the immune responses to acute and chronic stressors. According to these authors, the immune system's activity increases in the presence of acute, short-lived stressors, as an adaptive mechanism of the organism; however, exposure to chronic stressors results in an immuno-depressive response (Segerstrom & Miller, 2004).

The similarities between illness behavior and some symptoms of depression such as pain, loss of appetite, and social withdrawal prompted researchers to investigate the possible relationship between depression and cytokine activity. The interest in studying the relationship between cytokine activity and depression is based on the facts that: (a) cytokine activity was reduced after the administration of antidepressants in patients with autoimmune disease comorbid with depression, (b) depressed patients show elevated cytokine levels, (c) depressive symptoms can be produced by the inoculation of cytokines in nondepressive patients, (d) cytokines seem to affect the activity of brain areas associated with depression, and (e) cytokine activity is affected by stress (Pucak & Kaplin, 2005).

Two types of cytokines—interleukins (IL) and interferons (INF)—seem to have an influence on depression (Wilson & Warise, 2008). IL-1 and IL-6 are proinflammatory cytokines that act on the hypothalamus in response to illness or wounds, and are associated with fever, fatigue, sleepiness, muscular pain, decreased appetite, and depression, the latter possibly being a consequence of IL-1's obstruction of serotonin (Corwin, 2000), norepinephrine, and dopamine (Wilson & Warise, 2008). According to Corwin (2000), IL-6 inhibits IL-1 to maintain control over its proinflammatory response. IL-6 was found to inhibit neurogenesis in the hippocampus, which could be related with the smaller hippocampus size found in chronically depressed patients (Pucak & Kaplin, 2005). However, Corwin, Johnston, and Pugh (2008) found no relationship between IL-6 and depression during the postpartum period in women with no history of chronic depression, and therefore, they concluded that IL-6 cannot be considered as a predictor of

PPD (Corwin, Johnston & Pugh, 2008). IL-2 seems to be strongly related with depressive symptoms of sadness, tension, inability to sleep, anorexia, low energy, low concentration, anhedonia, and suicidal ideation (Capuron et al., 2002). Interferons play an important role in the organism's fight against viruses by interfering with their replication in healthy cells (Corwin, 2000). Interferon-α is responsible for illness behavior related with fever, chills, fatigue, myalgia (Corwin, 2000), and depression (Capuron et al., 2002; Wilson & Warise, 2008).

Leonard (2001) explained the relationship between depression and stress as mediated by elevated corticotrophin-releasing factor (CRF) which stimulates the production of glucocorticoids. In depressive patients, failing glucocorticoids' receptors contribute to increased cytokine activity and to an exacerbated proinflammatory response (Leonard, 2001). Leonard summarized the findings that link CRF with norepinephrine (NE) availability. NE is a neurotransmitter involved in depression. In the presence of stress, CRF stimulates the secretion of tyrosine hydroxylase (TH), and TH induces NE synthesis. Cytokines also produce NE, and for this reason, the decrease of NE activates cytokine activity (Leonard, 2001).

Cytokines are naturally high after delivery of a child to prevent infection, and as a response to inflammation (Corwin, Bozoky, Pugh, & Johnston, 2003). IL-1β is high during the first month postpartum which correlates with fatigue during that time (Corwin et al., 2003) and could constitute its connection with PPD (Corwin et al., 2008; Kendall-Tackett, 2006). Women who had elevated levels of IL-1β at 7 days postpartum had also elevated scores in the Centers for Epidemiologic Studies Depression Scale (CES-D) at 28

days postpartum (Corwin et al., 2008) which Corwin et al. explained by the stimulation of the HPA axis by the elevated cytokines and the consequently higher secretion of cortisol (Corwin et al., 2008). According to Kendall-Tackett (2006), high cortisol levels are present during the first postpartum days in women who endured their infants' severe illness or death. This concept is supported by the results of a meta-analysis by Segerstrom and Miller's (2004) that linked high cortisol levels to loss as a stressor. Cytokines IL-1, IL-6, and IFN-γ are involved in the inflammation that causes postpartum thyroiditis (Muller et al., 2001).

Wilson and Warise (2008) suggested that focusing on reducing or preventing inflammation processes in the body could positively affect the incidence of depression, and they recommended a holistic approach to prevent the effects of stress on immune activity. However, Corwin et al. (2008) cautioned against changing postpartum standards of care to include anti-inflammatory medication as a means to prevent PPD before larger studies could replicate their own findings of a significant correlation between IL-1β and PPD. These researchers recommended investigating the difference in cytokine and cortisol levels between women who have been clinically diagnosed with PPD and those who have not (Corwin et al., 2008).

Fatigue in new mothers seems to be an adaptive response present in different species to contribute to the mother's recovery after childbirth, prevent infection, and promote closeness between the mother and the child (Corwin et al., 2003; Corwin & Arbour, 2007; Neumann, 2003). Postpartum fatigue could be mediated by high levels of proinflammatory cytokines IL-6 and IL-1β acting in a feedback loop with stress (Groer et

al., 2005). Groer et al. (2005) found a relationship between postpartum fatigue, caesarian section, sleep deprivation, and illness of the mother and the child. These researchers also found a correlation between those factors, perceived stress, and maternal depression and suggested that these factors interact and reinforce each other (Groer et al., 2005).

Sleep deprivation. Sleep is a metabolic state characterized by the interplay of neuroendocrine and electrophysiological components and has been associated with apathy, drowsiness, hallucinations and sympathetic overactivity (Akerstedt & Nilsson, 2003). Akerstedt and Nilsson (2003) summarized the effects of sleeping only 4 out of 24 hours for 6 consecutive days as glucose intolerance, higher cortisol levels late in the day—when cortisol is expected to be low—, high sympatho-vagal balance, irregular production of growth hormone, low levels of leptin accompanied by excessive hunger, lower immune function with increased proinflammatory cytokine presence, and psychomotor impairment with a higher probability of accidents. These authors reported that the disruption in higher functioning created by sleep deprivation resulted in impaired handling of novelty and planning, impaired working memory and attention, and ineffective language communication (Akerstedt & Nilsson, 2003). These impairments could negatively affect the adjustment during the postpartum period characterized by the lack of a predicted schedule, the unknown characteristics of the newborn, the need for constant adaptations in regular life, and the enhanced need of effective communication between partners and other support persons (Akerstedt & Nilsson, 2003). According to Kendall-Tackett (2009), sleep is a vulnerable state that requires trust in the social network of support in that one will be safe in spite of letting go of alertness and vigilance. This

way, compromised interpersonal relationships, common in the postpartum period (Howell, Mora, DiBonaventura, & Leventhal, 2009) may contribute to sleeplessness. Impaired sleep increases inflammatory processes in the body and, vice-versa, inflammation negatively affects sleep (Kendall-Tackett, 2009).

During the first weeks postpartum, the mean amplitude of mothers' circadian cycles decreased to 2 to 5 hours from late pregnancy levels, at the same time that waking time after sleep onset increased, and sleep efficiency diminished as measured by the combination of a wrist device and subjective sleep log keeping (Matsumoto, Shinkoda, Kang, & Seo, 2003). Matsumoto et al. (2003)found a discrepancy between the objective and the subjective sleep behavior measurements what lead them to conclude that new mothers may tend to overestimate their total sleep time, and to underestimate the total time they did not sleep while awakening after having fallen asleep, negatively affecting their coping ability related to sleep deprivation and fatigue. This subjective misperception of fatigue level and individual sleep needs may be mediated by the HPA axis function of reducing stress reaction in the perinatal period found by Newman (2003). During the perinatal period, chronic sleep deprivation lowers oxytocin and prolactin production, which correlates with depression (Groer et al., 2005). Lack of sleep creates fatigue which, in turn, produces stress, the latter activating the HPA-axis (Groer et al. 2005; Kendall-Tackett, 2009). Groer et al. (2005) failed to find a significant relationship between prolactin levels, cortisol, and fatigue. Nevertheless, these authors concluded that stress, fatigue, and depression may be linked to low prolactin and high melatonin levels as found in the morning breast milk of sleep deprived nursing mothers. In figure 1, I show an

integration of the PNI characteristics of the perinatal period according to the above reviewed literature.

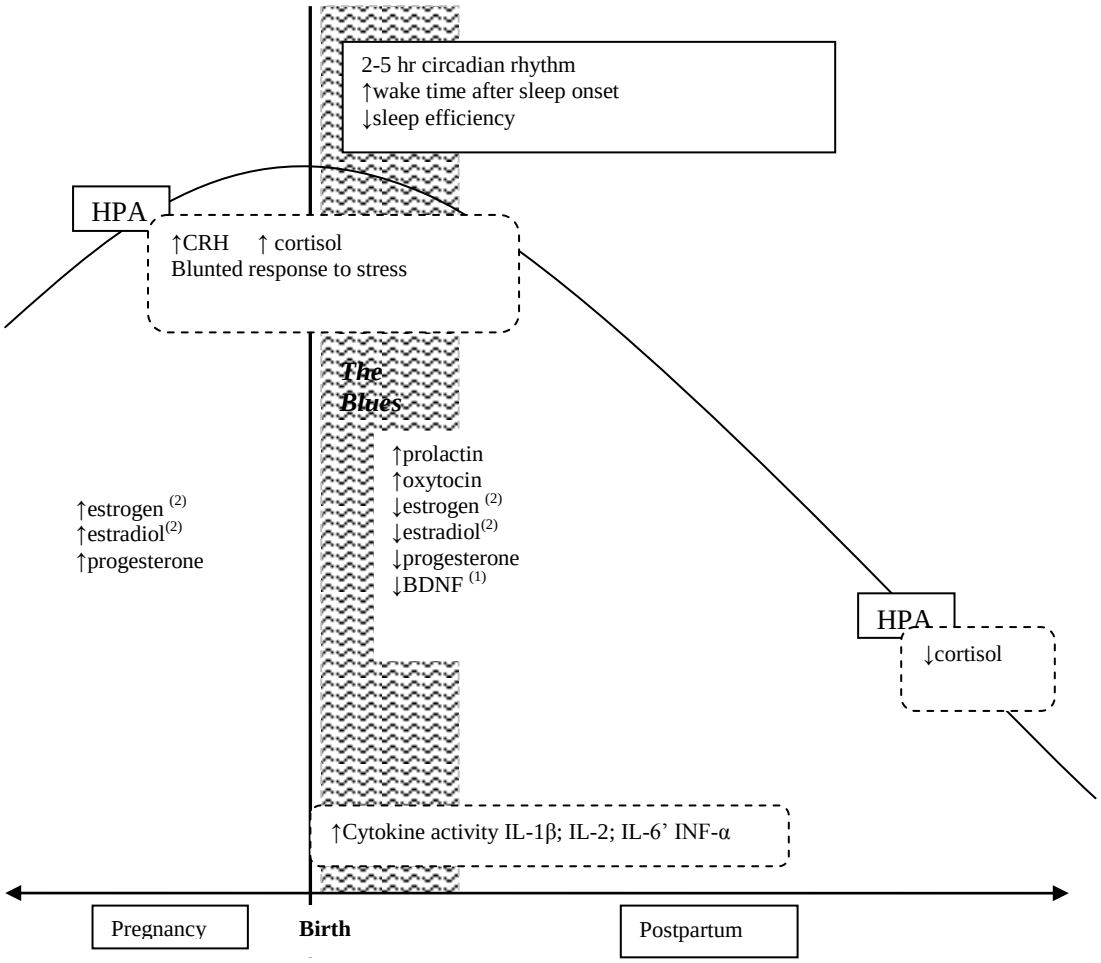

Figure 1. An integration of the PNI characteristics of the perinatal period. The hypothalamic-pituitary-adrenal axis activity peaks at the end of pregnancy as do cortisol levels. Pregnancy hormones abruptly decrease immediately after birth. Proinflammatory cytokines are elevated after birth. Sleep deprivation contributes to maternal fatigue.1 = BDNF maintains neuronal function. Its decrease is associated with depression in vulnerable women. 2 = Estrogen and estradiol play a role in the synthesis of serotonin. HPA = Hypothalamic-pituitary-adrenal axis. CRH= Corticotrophin releasing hormone. BDNF= brain-derived neurotrophic factor

PPD Precipitating Psychosocial Factors

In the mother. In a meta-analysis Beck (2001) showed prenatal depression and anxiety, maternity blues, a personal history of depression, and low self-esteem as some of the main predictors of PPD. An unsatisfactory body image during pregnancy and postpartum significantly correlates with symptoms of depression in late pregnancy and the postpartum period (Symons Downs, 2008). Personality traits that contribute to a better postpartum adjustment seem to be related with connectedness and an understanding of self as being communal and embedded in a context of interpersonal relationships (Reich, Silbert-Mazzarella, Spence, & Siegel, 2005).

Reich et al. (2005) differentiated between *communal* women who seemed to be able to accept help from their support networks as a natural occurrence when becoming mothers and *agentic* women who had assertive personality traits and strived to master their environment. Agentic women believed in their ability to cope effectively with the typical stressors of their new maternal role and were more susceptible to depression even in the presence of large social networks of support (Reich et al., 2005). These findings were similar for primiparous and multiparous women (Vliegen, Luyten, Meurs, & Cluckers, 2006). In a study with 209 first-time mothers, women with self-criticism as a preponderant personality trait were more vulnerable to depression under stressful circumstances; whereas also primiparous women with dependency as a personality trait had significantly less depression when confronted with challenging, stressful situations (Besser, Priel, Flett, & Wiznitzer, 2007). Besser et al. utilized a mixed design, which featured the Beck Depression Inventory (BDI) to measure dejection during the last

trimester of pregnancy and at 2 to 3 months postpartum, a short mother role stress questionnaire, and audiotaped personal interviews related to the problems the new mothers encountered after delivery. These authors also found that dependency moderated the effects of self-criticism on PPD. However, these researchers utilized a general measure for depression, the BDI (Besser et al., 2007), rather than a more specific one like the EPDS. These findings support Reich et al.'s (2005) differentiation between agentic and communal personality traits as playing a role in the vulnerability to developing PPD in the presence of stress. According to Reich et al.'s classification, the agentic category in which women assert themselves more and are less inclined to accept help would correspond to what Besser et al. (2007) call self-criticism. The communal category in which women naturally accept help from their support networks (Reich et al., 2005) would correspond to Besser et al.'s (2007) dependency.

In the environment. Other predictors of PPD include childcare stress, life stressors, lack of social support, marital relationship stress, infant temperament, single marital status, low socioeconomic status, and unplanned or unwanted pregnancy (Beck, 2001). Later, a qualitative study by Kanotra et al. (2007) conducted with 3,417 women in 10 different states, and based on data provided by the Pregnancy Risk Assessment Monitoring System (PRAMS), identified five prevalent themes that women face at 2 to 9 months postpartum other than PPD: (a) perceived need for social support after discharge from the hospital, (b) breastfeeding concerns, (c) newborn care, (d) perceived need for an extended in-hospital care, and (e) health insurance. Dennis and Letourneau (2007) found emotional support by the partner to be an important mediator of depressive symptoms in

general. Other researchers supported this finding especially after negative childbirth experiences with poor psychological adjustment, avoidance, and intrusive thoughts negatively correlating with the partner's emotional support (Howell et al., 2009; Lemola, Stadlmayr, & Grob, 2007). Illness of the infant requiring hospitalization or stay in the neonatal intensive care unit (NICU) with possible concomitant isolation of the mother was significantly associated with postpartum depression (Yurdakul et al., 2009).

A radical lifestyle change. The general concept of struggling with life appeared as the core concept of a grounded theory study on postpartum depression conducted in Sweden where postpartum women revealed the need for redefining their identity and their relationship with their partner (Edhborg et al., 2005). The time consumed in taking care of the infant together with emotional feelings of being overwhelmed, lonely, and tied by the child conflicted with the women's image of being a "good mother" (Edhborg et al., 2005, p. 264). This discrepancy between expectations and reality seems to be at the core of the issues experienced by postpartum depressed mothers (Bilszta et al., 2007) and their partners, both striving to deal with the demands of new parenthood without reaching out for help—perceived as a weakness— and presenting a happy face to the world (Bilszta et al., 2007; Tammentie, Paavilainen, Aestedt-Kurki, & Tarkka, 2004).

In a study with 209 postpartum primiparous women, Besser et al. (2007) found a significant correlation between high stress and PPD. Later, Leigh and Milgrom (2008) identified PPD as the strongest predictor of parenting stress affecting the parent-child system as measured by the Parenting Stress Index. Leigh and Milgrom's study was part of a national postnatal depression program in Australia, and included 161 women who

responded to questionnaires at 10-12 weeks postpartum. These researchers pointed out the importance of developing interventions to decrease postnatal depression as a means to reduce parenting stress (Leigh & Milgrom, 2008).

Stress in the Postpartum Woman

When the organism is under stress of any kind, a process called *allostasis* helps the body maintain stability and energy to continue functioning in spite of being exposed to the stressor (McEwen & Norton Lasley, 2007). The allostatic response can manifest as a raise in blood pressure, increased immune activity, and elevated HPA axis activity (McEwen & Norton Lasley, 2007). When the exposure to stress is constant or chronic it can turn into allostatic load where the same responses which were meant to help stabilize the organism during a single stress situation persist creating a higher risk for the organism such as chronic hypertension, immune exhaustion with higher vulnerability to illness, or prolonged elevated cortisol levels (McEwen & Norton Lasley, 2007). Tending to a newborn around the clock while exposed to fatigue and sleep deprivation are important factors that may contribute to the allostatic load during the postpartum period. Cortisol levels rise during pregnancy, and towards the end, its levels are comparable with the ones found in depressive patients (Kammerer et al., 2006). Activated by cortisol, the placenta secretes corticotrophin releasing hormone (CRH) whose levels reach 100 times their normal by the third trimester of pregnancy which results in a diminished or blunted physiological response to stressors such as blood pressure and heart rate (Kammerer et al., 2006).

In a qualitative study with 60 first time mothers, McIntosh (1993) identified the following stressors: (a) demands of infant care, (b) loss of freedom, (c) responsibility, (d) loneliness, (e) isolation, (f) lack of support, (g) lack of time for self, and (h) financial concerns. Increased cortisol levels in the mother correlated with elevated cortisol output in the fetus as measured in paired maternal and fetal venous samples during the 2 last trimesters of pregnancy (Gitau, Cameron, Fisk, & Glover, 1998), and amniotic fluid (Sarkar, Bergman, Fisk, O'Connor, & Glover, 2007). Both groups of researchers concluded that the positive linear correlation found in their studies might explain the effects of maternal prenatal stress on the fetus. Diego et al. (2004) compared cortisol levels of women who were depressed prenatally, pre-and postnatally and postnatally with the cortisol levels of nondepressed women. This study included a depression assessment together with urine tests for the pregnant women and women and their newborn infants during the first 2weeks postpartum. Diego et al. found that women who were depressed prenatally, postnatally or both had significantly higher levels of cortisol than did nondepressed women. Infants' urine measurements correlated with their mothers. Based on Gitau et al.'s (1998) findings, Diego et al. (2004) concluded that prenatal maternal cortisol levels predicted cortisol levels in the newborn.

Stress affects the relationship between the mother and the infant, and correlates with less sensitive maternal caring during the first year postpartum (Austin, 2010; Leigh & Milgrom, 2008) and with child's behavioral problems later in life (Evans et al., 2008; Feldman et al., 2009; Halligan et al, 2007; Josefsson & Sydsjo, 2007; Murray et al., 1999, 2010). Evans et al. (2008) included 8,511 children aged 6 to 7 years old whose parents

responded to a questionnaire on their children's emotional symptoms and adverse life events. Children of mothers who had experienced depression at 8 weeks or 8 months postpartum experienced more emotional symptoms at age 6 to 7 years old with the strongest associations found in children who had experienced stressful life events.

Feldman et al. (2009) included 971 mothers assessed for depression and anxiety on their second postpartum day, and reassessed at 6 and 9 months postpartum. The methodology used in this study utilized an extreme-case design by which at the second measurement, questionnaires on depression, anxiety, and parenting were mailed only to the 180 top and 180 bottom depression scores at 2 days postpartum. At 9 months postpartum, time of the third assessment, mothers and their infants received two home visits when mothers were clinically diagnosed using the Structured Clinical Interview for *DSM-IV* axis I disorders, and a self-report measure. During the second home visit, mother-infant interactions were videotaped, infants' emotion regulation tested, and saliva samples from both mother and infant were taken to measure cortisol levels in the evening. At the 6-month measurement, mothers' depression and anxiety symptoms correlated with higher levels of parenting stress and a lower sense of social support. Infants of depressed mothers had more difficulty regulating affect, and mother and infant cortisol levels correlated (Feldman et al., 2009). A possible limitation of this study could be the first measurement taking place at 2 days postpartum, a time when the female body is still at a hormonal upheaval and possibly experiencing *the blues* as discussed in previous sections, which could have altered the women's baseline for depression and anxiety.

Intrusive thoughts of harm occurring to the infant were highly prevalent in mothers who experienced parenting stress related to how these mothers perceived the quality of their relationship with the baby and with lack of social support (Fairbrother & Woody, 2008). Thorp, Krause, Cukrowicz, and Lynch (2004) found that a sense of being powerless and a reduced ability for decision making contributed to an enhanced perception of stress by postpartum women. According to Thorp et al. (2004), women tended to engage in demand-withdrawal exchanges with their partners, a communication pattern characterized by the woman initiating a request for change, or help followed by the man's defensiveness or lack of response, which resulted in less help by the partners and higher perceived stress by the mothers. Page and Wilhelm (2007) found that the depth of the relationship, that is, the significance attributed to the interpersonal relationship, correlated with the severity of the depressive symptoms rather than the practical help received.

Singer et al. (1999) reported that mothers of preterm, specifically low birth weight infants experienced high stress. Graham, Lobel, & Stein DeLuca (2002) found that prematurity and other childbirth events such as pain perceived as threatening with lack of control and accountability generated frustration, which translated into anger in 35% of women at 6 weeks postpartum. Graham et al. (2002) found a positive, moderate to high correlation between anger and maternal age and childcare stress. These authors pointed out that anger can have an adaptive purpose as long as it is expressed in a constructive way to produce a relief of stressful situations (Graham et al., 2002). The number of events appraised as daily childcare stressors by new mothers correlated strongly with

depressive symptoms (Honey & Morgan, 2003). Honey and Morgan (2003) found that postpartum depressed women tended to use avoidance and emotional coping to deal with stressors. Milgrom and Beatrice (2003) found that women tended to use somatization as the main coping mechanism from 3 to 24 months postpartum, even though this coping style seemed ineffective in addressing a woman's need to express her feelings and only focused on the physical discomfort of stress. Stadlmayr et al. (2007) found that acute stress reactions during the first 3 weeks postpartum were usually accompanied by avoidance as a coping mechanism, which made it more difficult for the women to work through possible traumatic aspects of childbirth.

In addition to the above mentioned stress factors present after childbirth, Thorp et al. (2004) found that the transition to parenthood and the relationship changes within the family contributed to the feelings of ambivalence, conflict, and loss of self experienced by women. This concept was supported by a meta-analysis of nine qualitative studies conducted in England, Hong Kong, India, and the United States that identified the connection to others as the determinant factor for a woman to develop PPD across cultures (Knudson-Martin & Silverstein, 2009). The inability to meet the expectations of what constitutes a good mother in the specific culture generated feelings of shame, anxiety, and distress (Bilszta et al., 2007; Knudson-Martin & Silverstein, 2009; Leung et al., 2005). These findings are congruent with Beck's (2001) explanation of PPD being the result of a woman's loss of self and her relationships during the transition to motherhood, which brings feelings of guilt, anxiety, and anger. A recent qualitative study in the United States found that for low-income mothers, the PPD experience was characterized by

feelings of being overwhelmed by the demands of mothering an infant under poverty circumstances (Abrams & Curran, 2009). According to Abrams and Curran (2009), single mothers faced the specific stressors of caregiving overload having to juggle between work and mothering needs, and worries about finances and the future of the child.

Knudson-Martin and Silverstein (2009) found that, regardless of ethnical or socioeconomic background, there was a social expectation of happiness surrounding the birth of a child that was not conducive to women's open expression of their struggles with the stressors of new motherhood. The consequence was often isolation from the important people in the women's lives including their support network — contributing to fatigue—, and their children—contributing to a sense of parental incompetence (Knudson-Martin & Silverstein, 2009). The perception of self as not being a good enough mother appears to be an important contributor to stress in the postpartum period resulting in role restriction, poor attachment, and low sense of parental competence (Misri et al., 2006). Demands for fairness, as well as a need for comfort, achievement, and approval, while putting oneself down were outlined by Milgrom and Beatrice (2003). At 3-24 months postpartum, depressed women reported feeling lack of control over their own lives (Milgrom & Beatrice, 2003). This evidence of external locus of control together with the belief that stressors will continue for a long time constitute PPD characteristics (Milgrom & Beatrice, 2003).

Stress during the perinatal period may be aggravated in immigrant women by the cultural differences between the woman's country of origin and the United States in regards to childbirth, child care, traditions, and the roles of the family members (Leung et

al., 2005). For example, the distribution of work within the household represented a major stressor for Chinese women living in the United States who needed to work outside the home contradicting the Chinese tradition of women being in charge of the internal affairs of the family, and men of the external ones such as working outside to provide an income (Leung et al., 2005). These mothers experienced feelings of loneliness and helplessness for having to trust the care of their child to a stranger with exacerbated worries about safety, hygiene, and child health. Intercultural clash with older family members was also reported as an important stressor when mothers opted for childrearing styles conflicting with family traditions (Leung et al., 2005).

The effects of stress on the immune system have been linked to general depression (Pucak & Kaplin, 2005). According to Leigh and Milgrom (2008), parenting stress results from the difficulties of adjusting to the new parent role, the coping skills used by new parents, and how parents perceive the child's temperament, which all together affects the family system, in particular, the parent-child interaction. Although stress is a common occurrence in the postpartum period, common treatment options for PPD have not purposely targeted it.

More recently, Matthey (2009) identified seven domains of stressors as perceived by Australian women as the causes of their postnatal distress. These categories represented a clear compilation based on the women's direct input: cognitive, personal, behavioral, attachment, baby care, life stresses, and adjustment to role-changes. In Matthey's study, 62% of women identified exhaustion as their main cause of stress, followed by difficulty giving enough attention to all their children (35.4%), financial

concerns (33.1%), and baby sleep issues and crying (35.4%). Women reported difficulty coping with baby care (54%), extreme tiredness (53%), their own self-expectations (36%), and having practical difficulties (33%) as the most frequent reasons for struggling.

Summarizing, every postpartum woman is exposed to dramatic hormonal changes (DiPietro et al., 2003; Harris et al., 1994; Kammerer et al., 2006; Lommatszch et al., 2006; Muller et al., 2001; Neumann, 2003; Obel et al., 2005; Payne, 2003), and to an immune reaction in response to labor, childbirth (Corwin, 2000; Corwin et al., 2003, 2008; Kendall-Tackett, 2006), and lactation (Kendall-Tackett, 2005). After delivery, women in general are exposed to fatigue (Corwin et al., 2003; Groer et al., 2005) and sleep deprivation (Groer et al., 2005; Kendall-Tackett, 2009; Matsumoto et al., 2003) which leads to exhaustion (Matthey, 2009). Women in the postpartum period are confronted with a radical lifestyle change (Beck, 2001; Bilszta et al., 2007; Kanotra et al., 2007) with great demands related to infant care and exhaustion, the whole accompanied by social isolation and increased need for social and emotional support (Dennis & Letourneau, 2007; Edhborg et al., 2005; Fairbrother & Woody, 2008; Howell et al., 2009; Lemola et al., 2009; Misri et al., 2006; Singer et al., 1999; Yurdakul, 2009). In Figure 2, I summarize the main psychosocial factors that, according to the reviewed literature, contribute to stress after childbirth. These factors together with inappropriate expectations about the parenting role from the mother and her environment (Bilszta et al., 2007; Graham et al., 2002; Knudson-Martin & Silverstein, 2009; Page & Wilhelm, 2007; Tammentie et al., 2004; Thorp et al., 2004), financial concerns (Matthey, 2009; McIntosh, 1993), and in many cases intercultural differences between the country of

origin of either parent or their families and what is customary in the United States (Leung et al., 2005) contribute to the elevated stress characteristic of the postpartum period (Besser et al., 2007; Leigh & Milgrom, 2008; Milgrom & Beatrice, 2003; Stadlmayr et al., 2007; Thorp et al., 2004).

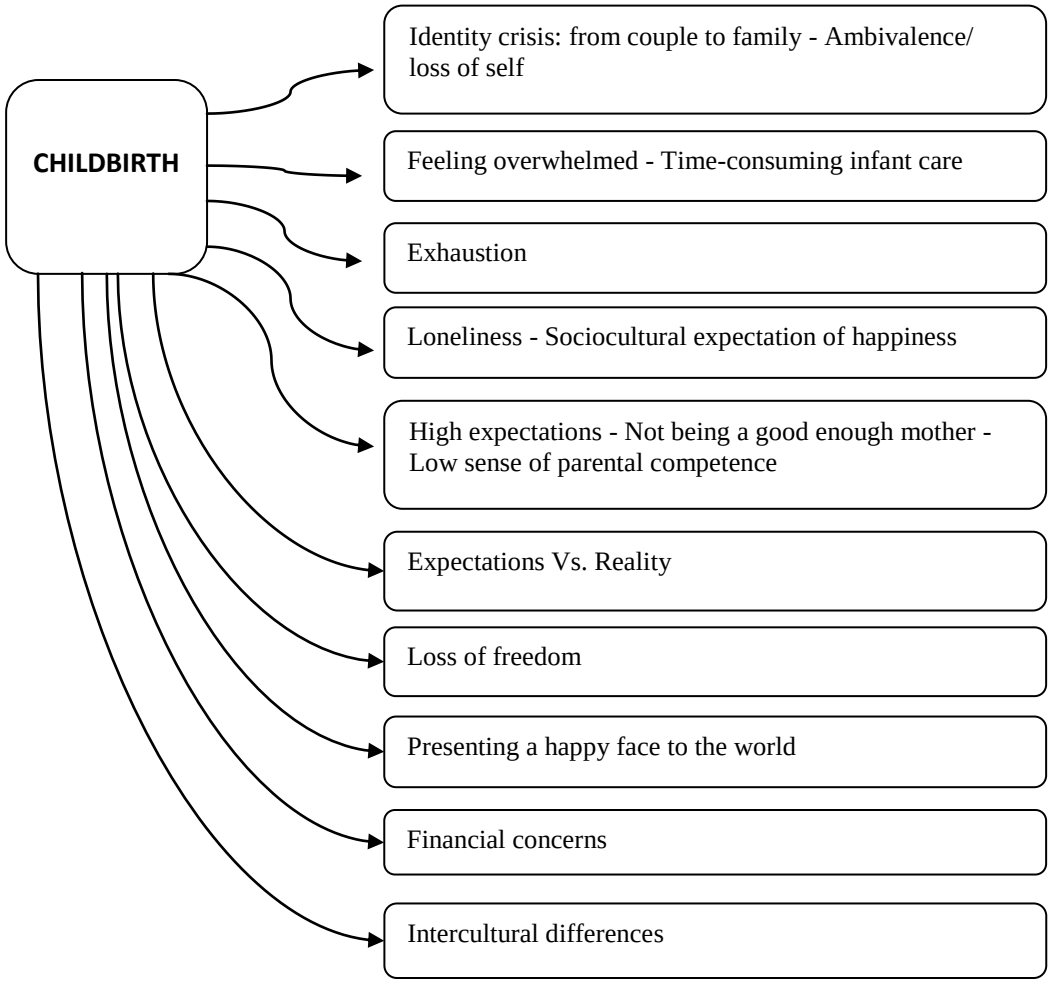

Figure 2. Psychosocial factors that contribute to stress after childbirth.

Theories

Beck's Theory of PPD

Beck's theory represents a holistic approach to understanding the experience of PPD in the context of a person-health environment given that the literature is nonconclusive about the physiology or biological components of PPD as sole explanations of its occurrence. Using a phenomenological approach, Beck (1992) identified 11 themes that characterize the experience of women suffering from PPD, and later organized them in a grounded theory where she additionally identified four stages, each with three characteristic phases (Beck, 1993). Beck's theory, *teetering on the edge*, was named to reflect a sense of walking a fine line between sanity and insanity as repeatedly reported by women experiencing PPD (Beck, 1993). Beck (1993) identified four stages in the course of PPD, each with characteristic aspects. I provide a summary of Beck's theory in Table 2.

The first stage, *encountering terror,* appears suddenly and unexpectedly any time within the first weeks to 6 months postpartum. During this initial stage, women experienced horrifying anxiety attacks, which they described as feelings of losing their minds, relentless obsessive thinking related to being insane, or being a bad mother and a bad person for having negative thoughts about the baby. Women described an enveloping fogginess characterized by lack of concentration, and often diminished motor skills (Beck, 1993).

The second stage is *dying of self* because of the symptoms experienced during the previous phase (Beck, 1993). This stage is comprised by alarming unrealness where women seemed to not recognize themselves, perception shared by their partners, and to not feel any caring emotions, just robotically going through the moves of daily house chores and infant care. Fearing to be "a horrible person, a horrible mother" (Beck, 1993, p.45), women felt alienated from their support system which lead to isolating themselves. This isolation was often extended to the infants from whom the mothers tended to distance themselves. Another important aspect of this stage is contemplating and attempting self-destruction based on the woman's perception of her failure as a mother and guilt about thoughts of harming the baby (Beck, 1993).

The third stage is *struggling to survive* during which women developed strategies to cope with the symptoms present during the first two stages. At this point, women started dealing with the medical system to find appropriate treatment (Beck, 1993). According to Beck, women in her study were faced with disappointment and humiliation because of the lack of support and understanding by the health professionals they consulted. Praying for relief was a reoccurring coping mechanism used to survive by the women in Beck's study. The third component of this phase is seeking solace in a support group, which benefitted the women by revealing that other women who had suffered from similar symptoms had in fact recovered (Beck, 1993).

The last stage in the PPD progress is *regaining control* which starts happening as unpredictable transitioning, characterized by occasional good days slowly gaining ground in an "erratic transition" (Beck, 1993, p. 47). When women started to feel better, they

started mourning lost time with their babies. Even when women started feeling better after regaining control, they feared the threat of an impending set back in a state of guarded recovery. In Table 2, I present a summary of the stages and themes characteristic of PPD according to Beck's theory (Beck, 1993).

Table 2

Beck's Theory of PPD: Teetering on the Edge (Beck, 1993)

Themes	Stages	Phases
-Unbearable loneliness that manifests in feeling uncomfortable among other people and believing that nobody else can understand what she is experiencing. - Obsessive thinking with suffocating fear and guilt at the thought of harming the infant. - Insecurities respect of being a bad mother and the need to be mothered herself. - Uncontrollable anxiety that leads to feelings of insanity, and of being on the edge. - Loss of control of emotions that are difficult to accept. - Guilt. - Mental fogginess and reduced ability to concentrate. - Irretrievable normalcy with grieving her loss of self. - Life is empty of all previous interests and goals. - Lack of all positive emotions with a robotic stance, deprived of feelings in what she describes as going through the motions. - Contemplation of death as providing a glimmer of hope about stopping feeling the way they feel.	1.Encountering terror 2. Dying of self 3.Struggling to survive 4.Regaining Control	Horrifying anxiety attacks Relenting obsessive thinking Enveloping fogginess Alarming unrealness Isolating oneself Contemplating/Attempting self-destruction Battling the system Praying for relief Seeking solace at support groups Unpredictable Transitioning Mourning lost time Guarded Recovery

The Allostasis Theory of Stress

McEwen and Wingfield (2003) developed the concept of allostasis to describe the process of an organism reestablishing balance and new adaptation (McEwen, 2005) after facing a stressor. The process of allostasis protects the organism by allowing it to adapt to expected or unexpected environmental changes. The process of allostasis is meant to be transient (McEwen, 2005). An *allostatic state* occurs when the organism reacts by altering levels of mediators such as hormones of the HPA axis—catecholamines, norepinephrine, epinephrine and dopamine—and cytokines to respond to a change in the environment while allowing the organism to continue functioning (Kendall-Tackett, 2009). Examples of allostatic states include bears overeating to store fat before hibernation (McEwen & Wingfield, 2003), a rise in blood pressure in humans right before awakening to prevent dizziness while changing to a vertical position (McEwen, 2005), or for an unexpected event, the increased immune activity to respond to a wound or an infection (McEwen & Wingfield, 2003). An allostatic state has a protective effect as long as it is short-lived and ceases after a stressor or a life change event is over; however, an allostatic state has a damaging effect on the organism when it persists over time due to repeated exposure to stressors. McEwen and Wingfield (2003) defined "allostatic load" (p. 4) as the cost to the organism in terms of the energy required to regain balance after exposure to a stressful event.

Allostatic load occurs when additional energy or resources required by the organism to maintain balance during a stressful event can be acquired from the environment. The higher the energy required to obtain those resources, the higher the

allostatic load. When the energy and resources required by the organism to regain balance exceed what is available *allostatic overload* occurs (McEwen & Wingfield, 2003).

McEwen and Wingfield (2003) described two types of allostatic overload. Type 1 allostatic overload occurs in the presence of acute stressors, one time threatening, or extremely demanding events that trigger a sudden activation of the HPA axis hormones within minutes or hours of the event, in turn triggering behavioral changes to cope with the stressful situation. An example of allostatic overload type 1 could be a natural disaster such as a flood or a tornado, which requires extraordinary energy and resources from the individual. In such a case, the environment cannot provide for resources, forcing the individual to enter a sort of emergency mode with behaviors that would allow him or her to regain energetic balance under the circumstances, for example proactively seeking shelter or rationing water and food (Mc Ewen & Wingfield, 2003).

The second type, allostatic overload type 2, refers to a chronic state of imbalance and resource depletion when the energy and resources available to regain balance are consistently not reached resulting in a continuous allostatic state with higher vulnerability to disease due to the suppression of the immune system (McEwen, 1998) and depression (McEwen & Wingfield, 2003). McEwen and Wingfield (2003) considered the complex social structure of modern Western society as a source of type 2 allostatic overload due to the overwhelming availability of choices in personal matters, morality, politics, and even access to recreation that differs according to socioeconomic status, and promote a sense of lack of control and helplessness that affect individuals in different ways according to their perception of the stressful situation (McEwen, 1998). McEwen (1998 & 2005)

recommended paying attention to the allostatic overload that accompanies chronic mood disorders, and warned that its impact involves the immune and neuroendocrine systems and areas of the brain associated with cognitive function, memory, and arousal such as the hippocampus, the amygdala, and the prefrontal cortex. McEwen (1998) recommended the consideration of isolation and lack of control as sources of allostatic load in treatment interventions by including increasing social support and coping skills.

A third type, distant stressors, consist of past traumatic experiences that continue affecting the person emotionally, cognitively or physiologically in the present as shown, for example, by the increased risk of developing rheumatoid arthritis, an autoimmune disease, by patients who were exposed to childhood trauma (Geenen, Van Middendorp & Bijlsma, 2006). The long-term effect of a past stressor seems to be mediated by individual differences in the perception and interpretation of the stressor, and not just by its intensity and duration (Baum et al., 1993). Baum et al. suggested that flashback images and memories of the traumatic event, as in posttraumatic stress disorder, may be accompanied by behavioral and physiological responses similar to the ones elicited by the actual event for years after the occurrence. Distant stressors were found to be a predictor of a heightened stress response in 50% of women suffering from metastatic breast cancer, responses which surprisingly were not affected by the level of emotional and social support received by these women (Butler, Koopman, Classen, & Spiegel, 1999). In a longitudinal study by Esterling, Kiecolt-Glaser, Bodnar, and Glaser (1994), 31 caregivers of Alzheimer's patients were compared to 31 controls in regards to infectious disease incidence and cytokine responsiveness after controlling for general health, medication

use, and health behaviors. These researchers found that subjects with five years of caregiving who were still providing care for a relative and bereaved caregivers who had lost their ill relative within the last 2 years had significantly higher number of medical visits, lower cytokine response, and higher depression and perceived stress than controls, suggesting that the psychoneuroimmunological response may be similar for chronic and distant stressors (Esterling et al., 1994). Supporting these findings, Blackburn and Epel (2012) summarized the results of their research on the effects of prolonged exposure to stress and depression on DNA telomere length. Telomeres are protective structures located at the end of chromosomes. Normally, telomeres decrease in length with DNA replication as the organism ages. During prolonged stress, consistently increased cortisol levels reduce telomerase activity, which, in turn, results in shorter telomeres. This is how Blackburn and Epel (2012) explained the relationship between stress, inflammation, and disease.

Following a review of the literature including qualitative and quantitative data focusing on psychoneuroimmunologic responses to stress in women during the perinatal period, Shannon, King, and Powell Kennedy (2007) concluded that the theory of allostasis could at least partially explain perinatal complications, including depression, in women without other identified risk factors. Shannon et al. (2007) suggested the use of the allostasis theory to provide a background for the development of clinical interventions geared to reducing stress and its impact during the perinatal period as well as psychoeducational interventions to provide women with information about stress, coping skills, stress reduction, and health promoting behaviors. These authors also recommended

the use of the allostasis theory as a framework for researching the impact of stress in childbearing women (Shannon et al., 2007).

The Transtheoretical Model of Behavioral Change (TTM)

The TTM (Prochaska et al., 1992) provides a frame of reference for determining whether a woman experiencing PPD may be ready to implement behavioral changes conducive to the reduction of symptoms such as participating in a support group and, more specifically, applying a stress management approach as offered by the support groups researched in this study. The TTM identifies effective ways of changing behavior to reach a certain goal according to five progressive stages (Evers et al., 2006) that Prochaska et al. (1992) had defined as (a) precontemplation, (b) contemplation, (c) preparation, (d) action, and (e) maintenance.

Prochaska et al. (1992) described the characteristics of the different stages. In the *pre-contemplation* stage, there is no intention of behavioral change or awareness of the problem or need. The *contemplation* stage brings awareness of the existence of a need or problem; however, at this stage, individuals are not ready yet to start changing their behavior. The *preparation* stage brings small changes or attempts prior to start taking action. Behavioral change starts actually during the *action s*tage characterized by time, resources, and energy investment on the part of the participants. This is usually the phase where individuals start treatment (Prochaska et al., 1992). In this stage, developing a sense of self-efficacy and confidence in their own ability to change may have an impact on success (Irvine & Ritvo, 1998). According to the TTM, the last stage is the *maintenance* stage where individuals continue the changes they started producing during

the action stage, and those behavioral changes become stable (Prochaska et al., 1992). A good and consistent maintenance stage is crucial to prevent relapse (Prochaska et al., 1992). Prochaska et al. (2004) cautioned about the importance for the success of a program of identifying in which stage of change a person is before starting an intervention.

The TTM can provide a framework for understanding the impact that the stage of behavioral change of group participants may have on the potential benefits of the postpartum support groups. Applied to PPD, during the precontemplation stage, McQueen, Montgomery, Lappan-Gracon, Evans, and Hunter (2008) recommended the regular use of the EPDS throughout the first year postpartum, which women can do by themselves. The results of the EPDS can be used to identify areas that need to be addressed and the level of support that the woman needs. During the contemplation stage, women may still be reluctant to seeking help in big part due to the stigma related to PPD (Bilszta et al., 2007; Buist et al., 2007; Flynn et al., 2006). For this reason, at the contemplation stage, psychoeducational interventions and a systematic follow-up protocol including referral to treatment are essential (Flynn et al., 2007).

Barriers to seeking treatment after having a high score on the EPDS were identified by Sword et al. (2008) at the individual, social, and system levels. At the individual level, women may have difficulty talking about their emotions related to their adjustment to motherhood, and may experience fear of being considered a bad mother. At the social level, family members and friends may also discount women's symptoms and lack information about how to help the women. At the health system level, Sword et al.

(2008) pointed out a disconnect between care pathways, long waiting times for specialists to see the affected women, and a lack of communication between the different members of the health care team together with the lack of resources such as prolonged hospital stays after delivery and specialized support groups. McGarry et al. (2009) identified a lack of financial resources or health insurance coverage as common barriers to access to treatment by women affected by PPD. In general, a decreased ability to obtain care explains the lesser utilization of services by women with PPD (Vesga-Lopez et al., 2008).

During the preparation stage, women seem to be reluctant to consider medication (Buist et al., 2007). It seems to be easier for women to start taking action towards obtaining help for PPD by attending weekly psychoeducational postpartum adjustment groups, where they are consistently assessed, and obtain nondirective counseling to help the women explore their own situation in a safe environment (McQueen et al., 2008). When women have previously received treatment for a mood disorder and their current symptoms are severe, they are more prone to start taking action and seek out treatment (Flynn et al., 2006).

In the action stage of a treatment intervention for women with PPD, it is important to address sleep deprivation, specifically difficulty falling asleep, waking earlier, and sleepiness during the day (Goyal, Gay, & Lee, 2007). In addition, Ammerman et al. (2005) recommend addressing irrational beliefs about motherhood, parenting, attachment, and interpersonal relationships. Kanotra et al. (2007) suggest considering the social network of support, whether the woman is breastfeeding, issues of infant care, and referrals to treatment including bereavement counseling in cases of infant

illness or loss. During the action stage, individuals start practicing stress management techniques daily such as relaxation, physical exercise, social interaction with others and social activities (Evers et al., 2006). Evers et al. (2006) had a significant success in helping 60% of the participants in the treatment group practice stress management techniques over 40% in the control group. The goal of the stress management intervention was to limit the amount of stressors and their effect while allowing flexibility and individual choices (Evers et al., 2006).

The daytime hospital in Rhode Island (Howard et al., 2006) is an example of an intervention for PPD taking place during the action stage from a TTM perspective. With consistent assessment to evaluate progress using the EPDS and other instruments, women participate in a cohort of up to eight members. Over a period of 7 days, women attend morning and afternoon psychotherapy groups where they have the opportunity to review their goals and monitor their daily progress. In addition, women attend individual therapy, medication management by a psychiatrist, relaxation training, and infant massage instruction and practice (Howard et al., 2006). The afternoon group that marks the end of the day is dedicated to communication skills building and anger management (Howard et al., 2006).

The maintenance stage of an intervention for PPD may be characterized by follow-up plans that could include optional attendance to a psychotherapy group or a support group (Howard et al., 2006), and community home visitation programs (Kanotra et al., 2007). Ammerman et al. (2005) recommend scheduling booster sessions after discharge to (a) assess individual needs for follow-up, (b) devise a reoccurrence plan in

case symptoms reappear, (c) summarize therapy and work done, and (d) identify attained goals. To prevent participants' guilt, shame or the development of hopelessness regarding their ability to change, Prochaska et al. (1992) suggest addressing the issue of relapse at every stage since relapse is common in all stages of change. It is important to identify whether a woman is in the preparation or action stage before offering her to participate in a program to increase her chances of consistent participation and successful results. Women affected by PPD may be more prone to participate in a treatment program once barriers to treatment have been identified and addressed at the personal, support network, and health system levels (Bilszta et al., 2007; Sword et al., 2008), and psychoeducational interventions have provided the information the woman needs to identify her symptoms and make a decision towards initiating treatment (Flynn et al., 2007).

Integration of Theoretical Considerations for the Present Study

Beck's theory of PPD (1993) provided information about how women experience the disorder. This information contributed to the identification of stressors characteristic of the postpartum period (Bilszta et al., 2007; Edhborg et al., 2005; McIntosh, 1993; Tammentie et al., 2004), and the understanding of the role of those stressors in postpartum distress (Abrams & Curran, 2009; Besser et al., 2007; Fairbrother & Woody, 2008; Graham et al., 2002; Honey & Morgan, 2003; Knudson-Martin & Silverstein, 2009; Leigh & Milgrom, 2008; Leung et al., 2005; Milgrom & Beatrice, 2003; Misri et al., 2006; Matthey, 2009; Thorp et al., 2004). The allostasis theory of stress (Mc Ewen & Wingfield, 2003) was used to explain how the chronic stressors present in the postpartum period can accumulate to create a state of allostatic load (McEwen & Norton Lasley,

2007) with chronically elevated cortisol levels (DiPietro et al., 2003; Kammerer et al., 2006; Kendall- Tackett, 2009; Lommatzsch et al., 2006; Obel et al., 2005), and elevated proinflammatory cytokine activity (Corwin et al., 2003, 2008; Groer et al., 2005; Kendall-Tackett, 2005, 2006, 2009; Muller et al., 2004). The stress reduction program offered at the studied support groups was meant to have a positive effect in reducing symptoms of PPD by utilizing the tenets of Beck's (1993) theory to target the specific postpartum stressors, and by educating the participants in how to use stress management techniques to cope with those specific stressors (Affonso, Anindya, Korenbrot & Mayberry, 1999). The TTM (Prochaska et al., 1992) provided information about the most effective time for postpartum women to participate in the support groups (Bilszta et al., 2007; Buist et al., 2007; Evers et al., 2008; Flynn et al., 2006; McQueen et al., 2008; Sword et al., 2008) to increase their chances of success (Prochaska et al., 2004).

Treatment Options for PPD

Conventional Treatment Approaches for PPD

Medications and hormones. Common treatment options for PPD include medication in the form of antidepressants such as selective serotonin reuptake inhibitors (SSRIs), selective norepinephrine reuptake inhibitors (SNRIs), and anxiolytics, usually prescribed by the obstetrician or the primary care physician (Goodman & Tyler-Viola, 2010). In some cases, women suffering from PPD have been prescribed estrogen in combination with psychotropic medication (Usall iRodie, 2003). Estradiol is a hormone produced by the ovaries that decreases one hundred times between the end of pregnancy and the second postpartum day (Moses-Kolko et al., 2009). In clinical trials,

transdermally administered estradiol correlated with the resolution of the depression after 6 months of treatment in postpartum depressed women (Moses-Kolko et al., 2009).

Behavioral treatments. Commonly used behavioral approaches to treating PPD are ambulatory individual and group therapy, and in-home and hospital programs.

Psychotherapy. According to Dennis (2004), behavioral treatments such as interpersonal psychotherapy (IPT), cognitive-behavioral therapy (CBT), and psychological debriefing done prior to hospital discharge proved to be useful for the prevention of PPD. In a previous study, Dennis (2003) found a significant reduction on EPDS scores in postpartum women receiving peer telephone support versus a control group. However, no significant differences were found in self-esteem, childcare stress, and loneliness (Dennis, 2003). Riecher-Rossler and Hofecker Fallahpour (2003) found significantly positive results in decreasing depressive symptoms with a group psychotherapy intervention for young depressed mothers of children under 4 years old. The intervention consisted of 12 group sessions and one couples' session centered on typical stress situations of new motherhood, and included help-seeking behaviors, relaxation, and personal relationships with partners and infants among other topics characteristic of the postpartum period (Riechler-Rossler & Hofecker Falahpour, 2003).

In-home and hospital programs. First time mothers with PPD may benefit from in-home visitation through community programs in addition to CBT targeting irrational cognitions about motherhood in general, parenting issues, attachment, and interpersonal relationships (Ammerman et al., 2005). Another intervention used successfully in Rhode Island is the implementation of a day hospital for women with severe PPD symptoms that

substantially affect their ability to function in everyday life (Howard et al., 2006). Women are self-referred or referred to the day hospital by different providers including pediatricians, obstetricians, psychotherapists, and general practitioners (Howard et al., 2006). The day hospital provides a nursery for the infants to stay while their mothers are attending the different activities that include a combination of therapy, medication monitoring if needed, relaxation training, infant massage, as well as communication and anger management training, all provided in individual and group settings using CBT and interpersonal therapy (IPT) approaches (Howard et al., 2006).

Electroconvulsive therapy (ECT). Electroconvulsive therapy consists in producing controlled, clinically adequate seizures for 20 seconds by administering electric stimulation on the brain under anesthesia (Forray & Ostroff, 2007). Forray and Ostroff (2007) found that a series of ECT treatments over 6 months adjusting the frequency and intensity of each session to the individual needs of a woman were effective in the treatment of severe, refractory PPD. A meta-analysis conducted by Cuijpers et al., (2008) to compare the effectiveness of treatments used for PPD between 1996 and 2006 revealed that psychological treatments for PPD—including CBT, IPT, counseling, and social support groups—had only short term, moderate effects with smaller effect sizes than pharmacological treatments and electroconvulsive therapy (ECT). For this reason, Cuijpers et al. cautioned that psychological intervention may not be the first line of treatment for PPD.

Combination therapy. Postpartum depressed women with a previous history of PPD seem to prefer psychopharmacological treatment to psychotherapy or a combination of both, whereas women experiencing PPD for the first time or breastfeeding women tend to choose IPT over medication (Pearlstein et al., 2006). Perlstein et al. found all three modalities of treatment efficacious to reduce significantly symptoms of depression. However, due to the small sample size, these authors were not able to establish significant differences between modalities (Pearlstein et al., 2006). Misri et al. (2006) found that a combination of CBT and antidepressants decreased the feeling of parenting stress for women who reported themselves to be lacking in the maternal areas concerning attachment and aptitude, which supports the importance of conducting routine assessments of a mother's sense of competence when treating PPD.

Unconventional Treatment Options for PPD

An 8-week physical exercise program for mothers was tested in a randomized control trial with 62 women starting at 6 to 10 weeks postpartum resulting in a significant decrease in depressive symptoms (Norman et al., 2010). These results were enhanced when the level of physical exercise was high and when it was accompanied by psychoeducation (Norman et al., 2010). These findings are consistent with a previous Australian controlled study on the effectiveness of pram-walking—moderate walking adjusting to desired heart rate maintenance —to reduce PPD symptoms on 6 weeks to 18 months postpartum depressed women as determined by scoring above 12 on the EPDS (Armstrong DipTeach & Edwards, 2004). These researchers found that postpartum women who walked for 40 minutes at moderate intensity as measured by walkers' heart

rate significantly reduced depressive symptomatology as compared with a 12 weeks participation in an unstructured social support group (Armstrong DipTeach & Edwards, 2004).

A small pilot study by Corral et al. (2007) with 15 postpartum depressed women tested the results of using bright light therapy versus placebo during 6 weeks. Although participants' symptoms improved, Corral et al. found no significant differences between the results of bright light therapy and placebo. In some of the women, depressive symptoms worsened after stopping treatment with the bright light (Corral et al., 2007).

A 4-week relaxation program with guided imagery that women practiced for 15 minutes every day at home seemed to be effective in reducing depressive symptoms at 4 weeks postpartum (Dennis, 2004). A hypnotic intervention was used by Yexley (2007) in a single case study with a 27-year-old mother of twins who was depressed and resistant to medication treatment. The hypnotic intervention specifically targeted responses to infant crying and adaptive responses to grief used to counteract intrusive thoughts of harming the infant. These symptoms disappeared after the second hypnotic session (Yexley, 2007).

In summary, women were offered medication treatment (Goodman & Tyler-Viola, 2010), individual psychotherapy using CBT and IPT (Ammerman et al., 2005; Dennis, 2004), groups (Riecher-Rossler & Hofecker Fallahpour, 2003), a combination of medication and psychotherapy (Misri et al., 2006; Pearlstein et al., 2006), hormonal therapy (Usall iRodie, 2003), in home nurse visitation (Ammerman et al., 2005), ambulatory hospital treatment (Howard et al., 2006), and some unconventional

approaches including physical exercise (Armstrong DipTeach & Edwards, 2004; Norman et al., 2010), light therapy (Corral et al., 2007), hypnosis (Yexley, 2007), and relaxation with nonspecific guided imagery (Dennis, 2004), none of which included a comprehensive MBSR approach as offered in the support groups in the present study. A literature search for postpartum depression and stress management and postpartum depression and mindfulness yielded no results.

The Rationale for a Stress Management Program for PPD

The physiological and psychological events around the birth of a child constitute major stressors that could contribute to a woman developing PPD (Riecher-Rossler & Hofecker Fallapour, 2003). Riecher-Rossler and Hofecker Fallapour (2003) used a vulnerability-stress model to explain that in genetically and otherwise predisposed women giving birth may be a major stressor that triggers PPD, and recommend the consideration of stressors in any therapy directed to treating PPD. As previously recommended by Groer et al. (2005), interventions geared to treat fatigue in new mothers, and psychoeducation about conflicts and interactions typical of new parenthood (Thorp et al., 2004) could be included in a stress reduction model for PPD.

Grote and Bledsoe (2007) stated the importance of including coping mechanisms that address optimism in a treatment intervention for PPD. According to Grote and Bledsoe, optimism-based coping skills seem to predict lower levels of PPD at 6 and 12 months postpartum even in the presence of other stressors such as financial hardship, interpersonal conflict, and physical discomfort. Milgrom and Beatrice (2003) identified postpartum stressors and women's coping styles that could be used to inform treatment

strategies, and to advance the early detection of women at risk of PPD. According to Milgrom and Beatrice (2003), women strived for fairness in their relationships with their partners and for a sense of control over their lives. However, these women were using ineffective coping mechanisms based on an external locus of control and somatization. Women who suffer from PPD have a characteristic coping style that includes isolation and silence to prevent other people important in their lives from dismissing their feelings (Knudson-Martin & Silverstein, 2009). According to Misri et al. (2006), the perception of not being a good mother is characteristic of stress in new mothers. This perception leads to a negative self-evaluation, in turn, resulting in role restriction, poor attachment, and low sense of parental competence (Misri et al., 2006).

A study by Guse, Wissing, and Hartman (2006) with 46 first-time pregnant women with high scores on the EPDS focused on the women's strengths and inner resources through a hypnotherapeutic intervention of six individual sessions specifically geared to the needs of pregnancy, childbirth, early motherhood and psychological wellbeing. The intervention seemed to have positive impact in those women's postpartum experience resulting in more positive feelings towards the baby, good attachment, and a sense of parental competence at 2 months postpartum (Guse et al., 2006). At that time, these authors found fewer symptoms of depression, higher life satisfaction, and an increased sense of coherence based on the women's belief in their effectiveness to cope with the stressors of new motherhood (Guse et al., 2006).

Thorp et al. (2004) suggested including decision-making support and problem-solving communication to counteract maternal stress by developing practical and

emotional support, and defining and negotiating shared household chores and leisure activities. Other strategies effective in reducing stress during pregnancy are yoga, relaxation training, meditation, and massage which reduces cortisol and norepinephrine levels (Vieten & Astin, 2008). Vieten and Astin developed an 8-week mindfulness program geared to anxious, pregnant women in the second and third trimesters, targeting thoughts, feelings, body sensations, acceptance, and coping with stress. The program used weekly reading materials and mindfulness exercises that took place in 2-hour long weekly sessions. Participants experienced a significant decrease in symptoms compared to the control group (Vieten & Astin, 2008).

Reducing stress may be a cost effective and easily teachable way of reducing depression in postpartum women considering the positive effects of managing stress on depression in general. Typical coping styles used by women suffering of PPD include avoidance of the stressors of childcare, which often translates in disengaging from the infant and emotion-focused coping such as venting, and self-blame (Honey & Morgan, 2003). In Figure 3, I depict the relationship between stress and depression as it may affect women in the postpartum period.

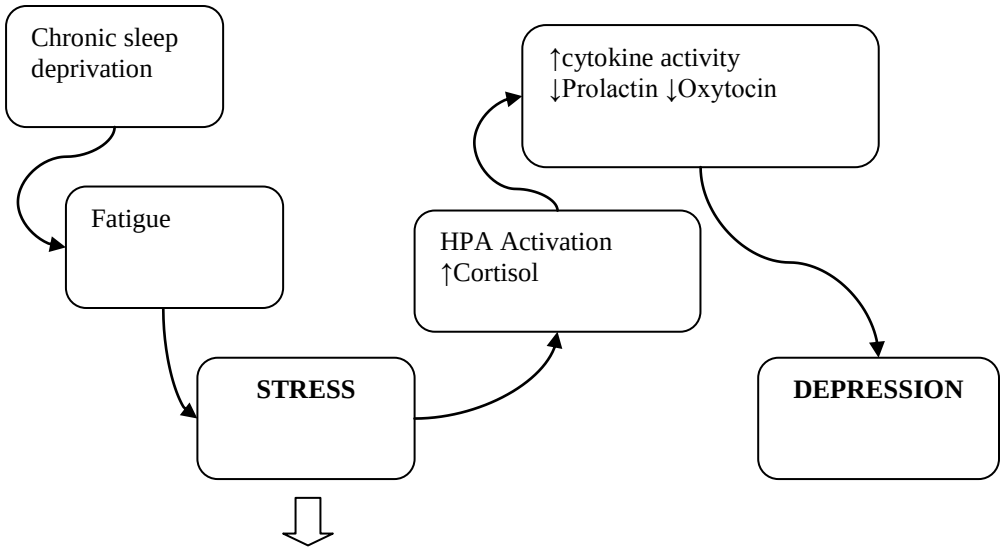

Figure 3. From stress to depression in the postpartum period.

Effects of Stress Reduction on Depression

Meditation, relaxation, and biofeedback are effective in reducing physical and psychological symptoms of anxiety (Kabat-Zinn et al., 1992). Mindfulness meditation trains the person to change the mental focus towards the present situation by increasing awareness of the here-and-now, and it can be applied effectively as part of a stress reduction program (Kabat-Zinn et al., 1992). Within a mindfulness approach, thoughts and sensations are noted without judging them or assigning them a meaning. Practicing individuals receive guidance to accept their thoughts as thoughts, and to reduce emotional coping to contribute to the individual's increasing sense of control (Kabat-Zinn et al.,

1992; Kostanski & Hassed, 2008). A meditation strategy is appropriate for support groups since it is not a medical or a psychotherapeutic intervention (Kabat-Zinn et al., 1992). Week after week, participants increase the length of their meditation resulting in less anxiety or panic symptoms for progressively longer periods of time (Kabat-Zinn et al., 1992). In a pilot study with a repeated measures design to test a treatment intervention using MBSR, Kabat-Zinn et al. (1992) assessed 22 patients with anxiety or panic using multiple anxiety and depression scales such as the Beck Depression and Anxiety inventories, and the Hamilton Depression Rating Scale. The study found that participants had significantly reduced symptoms of anxiety and depression at the end of the intervention, although practice at home was not necessarily related with positive outcomes (Kabat-Zinn et al., 1992).

In a review on the effects of hypnosis, relaxation and guided imagery, Gruzelier (2002) reported that progressive muscle relaxation appears to have a positive impact on mood, and immune function. After 3 weeks of consistent practice, progressive muscle relaxation together with guided imagery improved immune function, self-esteem, coping ability and it reduced anxiety (Gruzelier, 2002). According to Gruzelier (2002), the addition of guided imagery to muscle relaxation training provides for an active cognitive engagement that may have a positive effect on mood as compared with relaxation training alone. Gruzelier (2002) reported that guided imagery had a positive impact on quality of life, including social support and general functioning, perceived social support, the use of appropriate coping skills, acceptance of the stressors, improved immune function, and less fatigue and anxiety after 6 weeks of treatment. Cytokines IL-1—

usually elevated after birth—were reduced after three weeks of practice (Gruzelier, 2002). There is an association between elevated cytokines IL-1 and PPD (Corwin et al., 2003). Gruzelier (2002) warned about individual differences in hypnotic susceptibility which make some people more open to suggestion than others, and consequently, more able to obtain positive results from a guided imagery approach.

An MBSR program usually includes: (a) a "body scan" (p. 593) characterized by progressively paying attention to different parts of the body while performing rhythmic breathing, (b) a sitting meditation that focuses on the breathing and the acceptance of any thoughts or sensations that may be present, and (c) hatha yoga which combines breathing, stretches and postures to achieve physical relaxation (Chiesa & Serretti, 2009). Some of the results of a regular mindfulness practice include the reduction in rumination and anxiety symptoms and an increase in empathy and self-compassion (Chiesa & Serretti, 2009). According to Finucane and Mercer (2006), participants of an 8-week mindfulness, based cognitive therapy program had improved mood, self-awareness, and self-worth, slept better, and were able to use effective coping mechanisms against negative thoughts and emotions. Participants in that study were also able to disengage of thoughts of worry and self-criticism and increased their social network of support (Finucane & Mercer, 2006). These outcomes support Kostanski and Hassed's (2008) tenet of mindfulness meditation's contribution to a greater sense of autonomy.

The literature reviewed provided a foundation for the intention of reducing depression in postpartum women by affecting their levels of stress. Arming postpartum depressed women with effective coping mechanisms that they can use to improve their

everyday lives may have an empowering effect. Increasing awareness and acceptance of the anger generated by frustration and accumulated stressors in the postpartum time through mindfulness training may lead to the adaptive and constructive expression of those feelings, and result in improvement (Graham et al., 2002).

Prevalent Methodology in PPD Studies

Quantitative Studies

Quantitative studies have focused on the effects of social support on PPD (Dennis, 2003; Dennis & Letourneau, 2007; Lemola et al., 2007; Thorp et al., 2004; Vliegen et al., 2006), on the physiological effects of maternal depression (Capuron et al, 2002; Corwin et al., 2003, 2008; Harris et al.,1994; Lommatzch et al., 2006) and its relationship with stress (Graham et al., 2002; Honey & Morgan, 2003; Matthey, 2009; Muller et al., 2006; Singer et al., 1999), sleep deprivation (Goyal et al., 2007; Matsumoto et al., 2003), and fatigue (Groer et al., 2005). Quantitative studies have also addressed PPD's effects on the fetus (DiPietro et al., 2003), the newborn (Feldman et al., 2009; Halligan et al, 2007), and the mother-infant relationship (Affonso et al., 1999; Maxted et al., 2005; Milgrom & Beatrice, 2003; Misri et al., 2006). Other quantitative studies focused on stress in pregnancy (Obel et al., 2005), and the effectiveness of treatment options for PPD such as conventional psychotherapies (Ammerman et al., 2005; Misri et al., 2006), and unconventional interventions in the form of hypnosis (Guse et al, 2006), light therapy (Corral et al, 2007), and relaxation (Riecher-Rossler & Hofecker Fallahpour, 2003). One quantitative study addressed the effects on prenatal mood of a mindfulness-based intervention (Vieten & Astin, 2008).

Qualitative Studies

Qualitative studies related to the experience of postpartum depression have focused on the adaptation to the maternal role (Barr, 2008), the challenges of the postpartum period (Edhborg et al, 2005; Kanotra et al, 2007) including the differences between expectations and reality (Tammentie et al., 2004). Some studies have focused on the relationship between PPD and stress (Abrams & Curran, 2009; Fairbrother & Woody, 2008; Leung et al., 2004), and barriers to help-seeking behavior in postpartum women (McIntosh, 1993; Sword et al, 2008). Other qualitative studies have attempted to explain the experience of PPD through the development of theories using a grounded theory approach (Abrams & Curran, 2009; Beck, 1993; Knudson-Martin & Silverstein, 2009).

Mixed Methods Design Studies

Burke Johnson and Onwuegbuzie (2004) used a pragmatic paradigm to justify the use of a mixed methods research approach when it serves as the most adequate way to answer the research questions. One of the qualities of a mixed methodology according to these authors is its complementarity, which means that each phase, quantitative and qualitative, aims to provide a type of information that the other does not. In the research area that interests the present study, McCain et al. (2005) used a mixed-methods design to explore the relationship between PNI, stress, and depression. Reich et al. (2006) used a mixed methodology to measure the effect of personality traits on stress and depression in the postpartum period. Although the studies presented in this literature review discussed the stressors that characterize the postpartum period, as well as the relationship between stress and depression in the postpartum time, none had focused on understanding the

potential effects on PPD of a psychoeducational program geared to reducing postpartum stress, a gap addressed by the present study.

Qualitative Analyses Considerations

Qualitative researchers utilize different categories for analysis based on the type of source for the data such as talk, observations, graphic materials, videos, and documents (Leech & Onwuegbuzie, 2008). Leech and Onwuegbuzie (2008) presented different qualitative data analysis techniques. Of the different techniques described by these authors, one that seemed appropriate to the present study was narrative analysis that considers the stories that give meanings to the participants' lives (Leech & Onwuegbuzie, 2008). With narrative analysis, data are summarized according to a main plot and then coded (Leech & Onwuegbuzie, 2008). Another analysis method that fit this study was qualitative comparative analysis that systematically analyzes the similarities and differences between the different participants (Leech & Onwuegbuzie, 2008). Qualitative comparative analysis is useful to compare findings with an existing theory because it allows the researcher to connect with preexisting categories in the theory and to develop new ones. It consists of several levels of sequential analysis providing different perspectives on the cases, and allowing the researcher to conclude new ideas about how the different cases relate. Qualitative comparative analysis helps the researcher find different categories by providing an idea of the extent of their disparity or similarity. Unnecessary variables are eliminated, and this comparative analysis is repeated until there are no more possible reductions, finalizing with a statement of the unique

characteristics of each specific category. It is a case oriented approach useful when analyzing data originated in talk (Leech & Onwuegbuzie, 2008).

Constant comparison analysis is another technique based on coding useful to generate a theory, and it is preferred when using a grounded theory research design. It is appropriate for data collected through narrative or talk. Constant comparison analysis helps build a theory by providing understanding into the meanings that can be extracted from the data. It is a systematic process, as well as a creative process with three main stages: (a) open coding where the researcher groups the data that can be identified under a single code; (b) axial coding where the codes are grouped into categories; and (c) selective coding where the researcher integrates and refines the theory (Leech & Onwuegbuzie, 2008). Classical content analysis is another qualitative technique that can be used with data provided by a narrative where the frequency of each code is counted sometimes using descriptive and inferential statistics. Microinterlocutor analysis helps the researcher analyze data obtained with a focus group. Its limitation is that the voices of all group members may be not represented equally in the development of a theme (Leech & Onwuegbuzie, 2008).

The above-mentioned qualitative approaches to processing and analyzing data share characteristics with the phenomenological approach selected for the present study. According to Moustakas (1994), the methodological steps that are appropriate for a phenomenological study include: (a) *epoche*, a Greek word meaning to abstain or refrain, which refers to the researcher's stance of freeing herself from preconceived ideas about the topic preparing her for accepting the experience of the participants as it is conveyed

by the participants in the course of the research (Garza, 2007); (b) phenomenological reduction of the data which includes the consistent and repetitive consideration of the descriptions of the participants' experiences to arrive to thematic clusters and their possible interrelations; (c) imaginative variation which consist in deriving possible meanings assigned to the studied phenomenon; and (d) synthesis of meanings and essences which is an integration attempting to explain the phenomenon as a whole (Moustakas, 1994).

Empirical Phenomenological Research

Phenomenology refers to the philosophical point of view defined by Husserl (Abbagnano, 1973; Patton, 2002) as the science of describing experience by its immediate, conscious perception by the experiencing individual. A phenomenon is what appears, and is consciously perceived by an individual. In phenomenology, this personal, conscious perception is called intentionality to express that once a phenomenon is experienced it is changed by the meaning conveyed to it by the person experiencing it (Garza, 2007). This difference is expressed by phenomenologists as *noema* or the phenomenon as perceived, and *noesis* that is the interpretation of what the phenomenon means for the individual person. Intuition and reflection are the basis of knowledge from a phenomenological perspective (Moustakas, 1994; Garza, 2007).

Based on the original narrative of the experience of the participants, empirical phenomenological research attempts to discover the meanings that the individual experiences have for the participants in the particular situation that is being researched (Moustakas, 1994; Pringle, Drummond, McLafferty, & Hendry, 2011). Through

reflective analysis (Garza, 2007) and interpretation (Patton, 2002), the researcher‘s goal is to arrive to universal concepts that can be derived from the individual accounts of the experience, and to identify relationships between those concepts (Moustakas, 1994; Patton, 2002). To contribute to reliability and validity, O'Connor, Netting, and Thomas (2008) suggested a series of steps from using an interrater, triangulation of data sources and the use of multiple researchers and methods (Pringle et al., 2011) together with theoretical justifications for sample selection and concept relations, thorough description of categories, and clear identification of exceptions. A phenomenological approach appeared to be the methodology that best suited the purposes of identifying current issues in PPD and the most helpful aspects of the postpartum adjustment support groups and the MBSR program as identified by the participants in this study.

Conclusion

Women with PPD may be faced with treatment barriers that originate in their own difficulty reaching out and seeking help (Sword et al., 2008; Tammentie et al., 2004), and once they do, they are mainly offered psychopharmacological treatment (Goodman & Tyler-Viola, 2010; Misri et al. 2006; Usall iRodie, 2003) and in some cases are referred for psychotherapy (Dennis, 2003; Misri et al. 2006). Women who have been diagnosed with PPD tend to be reluctant to accept these standard treatment options (Buist et al., 2007). Postpartum adjustment support groups seem to be an appropriate, less intimidating resource for women who are being confronted with their need for help (Buist et al., 2007; Howard et al., 2006; McQueen et al., 2008).

Given that high stress has been significantly correlated with PPD (Besser et al., 2007), an MBSR program taught at postpartum support groups could appropriately address the needs of women suffering from PPD. The techniques seemed easy to use first in the postpartum support groups (Howard et al., 2006), and then in an everyday life context (Dennis, 2004) to alleviate the symptoms of PPD, and promote a better adjustment (Guse et al., 2006). As noted in the literature, the postnatal period is characterized by stressors of physical (Corwin et al., 2003; Goyal et al., 2007; Groer et al., 2005; Kammerer et al., 2006; Kendall-Tackett, 2005) and psychosocial origin (Kanotra et al., 2007) which can negatively affect the quality of the women's interpersonal relationships (Ammerman et al. 2005; Lemola et al., 2007; Reich et al., 2005), their self-esteem (Besser et al., 2007; Edhborg et al., 2005; Symons Downs, 2008), and their attachment to their children (Honey & Morgan, 2003; Leigh & Milgrom, 2008). No literature could be found regarding the use of an MBSR approach for PPD, an identified gap in the literature that the present research addressed.

In the following chapter, I describe the methodology I used to address the qualitative research questions presented in Chapter 1. In Chapter 3, I present the research design of the study to: (a) establish whether the stage of change of behavioral health at Week 1 influences the impact of group participation; (b) describe demographically the population of women attending the support groups; (c) identify current aspects of the PPD experience; and (d) identify the most useful aspects of the psychoeducational program from the perspectives of both the participants and the facilitators.

Chapter 3: Research Method

In this chapter, I describe the methodology I used for the present qualitative study in which main purposes were to obtain a current perspective from the participants about their personal experience with PPD, the support groups, and more specifically the MBSR program offered at the groups, and to obtain information about utilizing the MBSR program by the group facilitators. A secondary, descriptive purpose of the study was to collect demographic information about the women attending these groups. Following an explanation of the research design and approach, I address the qualitative research questions, setting, sample, data collection and analysis including my role as the researcher and the description of the data analysis procedure. A description of the groups and the MBSR psychoeducational program follows. I end the chapter with a description of the measures taken to protect the participants, and of the steps already taken and planned for the dissemination of the research findings.

Research Design and Rationale

A pragmatic paradigm supported the selection of a phenomenological, qualitative design for this study (Leech & Onwuegbuzie, 2007). Pragmatism is a philosophy that focuses on the practical application of solutions geared to a specific problem. Applied to research, this implies that the methodology chosen by the researcher emerges from the nature of the problem (Burke Johnson & Onwuegbuzie, 2004). According to the pragmatic view, the research questions and hypotheses guide the research design and methodology (Burke Johnson & Onwuegbuzie, 2004; Leech & Onwuegbuzie, 2007), which in the case of the present study, consisted of a qualitative design. The

phenomenological approach was geared to gaining information about the PPD experience of the participants as well as their personal experience with the support groups and the MBSR psychoeducational program as presented in the Problem Statement in Chapter one.

Postpartum depression has an excellent prognosis when treated (Kendall-Tackett, 2005) as shown by the significant decrease in means scores on the EPDS of 62% of patients receiving only antidepressants or 51% of patients receiving only behavioral treatment (Sharp et al., 2010). However, women tend to be reluctant to seek help when they experience PPD (Bilszta et al., 2007; Sword et al., 2008), and support groups are a viable option accepted by postpartum women (Riecher-Rossler & Hofecker Falahpour, 2003). Given the complex characteristics of the disorder, including physiological changes after pregnancy and delivery of a child (Groer et al., 2005; Kammerer et al., 2006; Pucak & Kaplin, 2005), the stress of taking care of an infant full time (Leigh & Milgrom, 2008; Matthey, 2009; McIntosh, 1993), and its psychosocial concomitants (Honey & Morgan, 2003; Riecher-Rossler & Hofecker Fallapour, 2003; Thorp et al., 2004), an MBSR psychoeducational program applicable in the PPD support group setting appeared to be an appropriate approach that had not yet been studied.

I based the present study on the literature which suggested a need to better understand the experience of PPD by the women who suffer from it (Barr, 2008; Edhborg et al., 2005; Ehrlich et al., 2009; Fairbrother & Abramowitz, 2006; Miller et al., 2006), and to understand how the MBSR program was experienced by participants and facilitators. A qualitative phenomenological approach based on personal feedback from

the participants and group facilitators via individual interviews gave them an opportunity to express their personal point of view as an experiential narrative and explanation.

To describe the participants' experiences and perceptions throughout their group participation, I analyzed the information obtained at their interviews which addressed research questions 1to 5 as I state in the next section. The focus was on understanding the individual and subjective processes that may have contributed to the outcomes of the program (Bradbury-Jones, Sambrook & Irvine, 2008; Moustakas, 1994; Onwuegbuzie, Slate, Leech, & Collins, 2009; Patton, 2002).

I used the facilitators' interviews to address research questions 6 to 9 by eliciting a candid perspective from the group facilitators about their experience of administering the psychoeducational program. The interviews took place after 8 weeks of group participation. The information obtained from the group facilitators also contributed to: (a) triangulate data about main themes or issues identified at the participant level, and (b) identify practical considerations for potential future applications of the MBSR psychoeducational program. Although the latter was not explicitly a purpose of the present study, the convenience of retrieving this information at that point seemed to justify its inclusion. This information could be validated with the one obtained at the participants' interviews regarding the participant's experience with the MBSR psychoeducational program. As a summary, I present the research design in Figure 4.

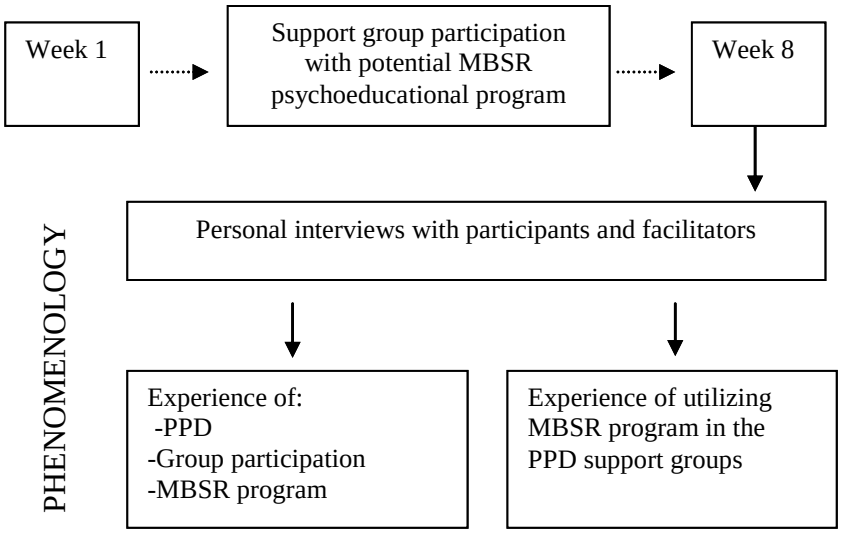

Figure 4. Research model. Participants were invited after week 8 to participate in personal interviews about their experience. Facilitators were also invited to participate in personal interviews to discuss their experience facilitating the group and their decision about using or not the MBSR educational program.

Setting and Sample

For the study, I used a convenience sample consisting of the women who regularly attended one of the two existing postpartum support groups in a metropolitan area of the Midwestern U. S. Groups are open to the community, and participants are referred by different sources. Group facilitators had discretion about using or not the MBSR psychoeducational program as explained in an informed consent document (Appendix C). A letter of authorization to conduct this study from the group organizer is available in Appendix A.

Population Description and Eligibility Criteria

National statistics on the demographics of U.S. mothers from the National Center for Health Statistics show that, in 2010, the mean age of mothers of newborns was 27.7 years old (Martin et al., 2012). Mothers of newborns were comprised by 9.3% of teen-agers, 76.2 % of women ages 20 to 34, and 14.5 % were 35 and older. Forty-one percent of mothers were unmarried. The race distribution was 76.74% White, 15.91% Black, 6.17 % Asian, and 1.17% American Indian. Twenty-four percent of mothers were Hispanic. Overall, 15.46% had some degree of college education (U.S Department of Human Health and Human Services, 2012).

For the State of Indiana, the U.S Department of Human Health and Human Services (2012) reported the following demographic information for 2010: 10.43% teen age mothers, 79% mothers ages 20 to 34 years old, and 10.51% 35 years and older. The race distribution was 85% White, 12.18% Black, 2.34% Asian, and less than 1%, American Indian. Nine percent of mothers were of Hispanic descent. Forty-three percent of all mothers were unmarried, and 20.20% had some level of college education (U.S Department of Human Health and Human Services, 2012). No average age was reported for the State of Indiana.

Compiling and reporting demographic information about the participants in the postpartum support groups was an added contribution of the proposed research study to the body of knowledge on the field of PPD in the State of Indiana, given that at the time of the study, no demographic information about the women attending these groups had been retrieved. This information was used to describe the sample

studied. According to the group organizer, the number of participants at each group varies per week between 5 and 9 women. Given the low number of participants, the demographic information retrieved with descriptive purposes could not be used to establish the generalizability or transferability of the study results.

Women who participated in the support groups either were referred to the groups by their physicians, pediatricians, and hospitals, or attended in response to public awareness resources distributed by community agencies and doctors' offices. According to the group organizer, information about the support groups is also available on the Internet and Facebook. The groups were hosted in two different hospital facilities located just outside the limits of a large city in Indiana, and participation is free of charge. The groups are open, which means that new women may join at any time; and women may discontinue their participation at will at any time. Women can attend the group for as long as, and with the frequency they desire. The meetings are 2 hours long, and women are welcome to bring their children to the meetings although childcare is not provided.

All participating women struggle with the adjustment after having a child. According to the group organizer, women with PPD come to groups with different levels of severity and at different times in the course of the disorder. The group facilitator prescreens the women who wish to attend the support groups in person or via a telephone intake interview to determine whether, at the time, they would benefit more from individual treatment than by attending the group. Participants in these groups may attend alone, with their babies, or also bring a supportive family member.

At the screening intake, women provide their contact information for emergency purposes. At their first meeting, women receive a packet of information and a plan of care that the group facilitator developed during the intake. Regarding the structure of the meetings, each woman gets a chance to speak about her past week and her lifestyle in regards to eating, sleeping, exercise, and self-care activities. According to the group organizer, participants may bring topics up for discussion and facilitators may provide informational handouts or provide referrals accordingly. In case a participant would need emergency care during a group meeting, the facilitators have an emergency procedure in place that includes the available hospital resources. For the purposes of the present study, it was left at the discretion of the group facilitator whether the MBSR techniques were taught and practiced at any given group meeting. Per the request of the groups' organizer, a flyer had been developed prior to the study beginning to announce and introduce the study to the current group participants (Appendix H).

I visited the support groups at Week 1 to offer the women who attended the group and were over 18 years of age the possibility of participating in the research project at will by taking part in personal interviews that took place outside of the group setting. Prior to conducting the study, I introduced the group facilitators to the 8-week MBSR program to be used at their discretion in the support groups. At this time, the group facilitators received an Informed Consent document (Appendix C) for their review. I provided the group facilitators with the MBSR program professionally recorded in an i-pod device attached to portable speakers to ensure a consistent

delivery of the program. I will describe the MBSR program in detail later in this chapter.

Sample Size

Following Guest et al.'s (2006) conclusion that between six and 12 sets of data are enough to reach saturation information in a phenomenological study, I interviewed12 participants – 10 group attendees and 2 group facilitators-- to ensure that enough sources of data were available to reach saturation. I established the minimum sample size also by comparison with similar studies such as other phenomenological studies in the field (Barr, 2008; Beck, 2004; Leung et al., 2004), and specifically, Beck's (1993) grounded theory which included interviews with 12 women. I invited group attendees and facilitators to individual interviews with the option of potential additional contacts if needed to reach the saturation of information required by the simultaneously conducted data analysis (Creswell, 2009; Guest et al., 2006; O'Connor et al., 2008). I audio recorded the interviews and transcribed them verbatim (Creswell, 2009).

Sampling Procedure

I used a purposeful sample of selected participants. A purposeful sample includes selected participants according to a criterion established by the researcher (Gay & Airasian, 2003; Guest et al., 2006). In this case, selected participants were at least 18 years old, have personally experienced the studied phenomenon, and were interested in better understanding it, and, for that reason, were motivated and willing to participate in the study (Moustakas, 1994). The selection of participants for the present study was then

based on their qualifying age and willingness to take part in the interviews after having participated in the support groups at any point in time during the duration of the study. According to the phenomenological point of view, participants are considered co-researchers, and the narrative of their perception of the experience is important (Bradbury-Jones et al., 2008; Moustakas, 1994).

At Week 1, I visited the postpartum support groups to inform the participants about the research study. At that time, I distributed an informational flyer (Appendix H) and individual envelopes containing: a) a sign-up sheet (Appendix I) with my contact information for potential interested participants to set up an interview 8 weeks thereafter, or before if the participant decided to discontinue group attendance; and b) the Informed Consent document for their review. The envelopes were stamped and addressed to me for the convenience of the potential participants. With this procedure, participants had the choice of initiating the contact with me or providing me with their contact information according to their preference. Participants could mail the envelopes themselves or return the sealed envelopes to the group facilitators who would then forward them to the researcher. Additional envelopes were left with the group facilitators for eventual new attendees who might have been interested in contacting the researcher to be part of the study. In this way, participants could be added to the sample until the minimum number of participants was obtained. This last procedure was not necessary because the minimum number of participants was reached at the end of Week 8.

Informed Consent Procedure

At the subsequent contact between the potential participant and me to set up an interview, I confirmed that the potential participant was over 18 years old before proceeding to discuss the informed consent document (Appendix B) and set-up an interview time and place. I offered to send the informed consent document for the potential participant's review prior to meeting for the interview if so requested. In this way, each participant had ample time to read the informed consent document and agree or decline to participate in the study. The informed consent documents (Appendices B and C) explained the purpose of the study, generally described the MBSR program, the participant's role in the study, the researcher's role, and clearly stated that participation in the study was free, voluntary, could be discontinued at any time, and required a minimum age of 18 years old. At interview time, participants in the study — group attendees and facilitators— signed the informed consent document prior to proceeding to the interview, and retained a copy of their signed informed consent document.

Research Questions

1. Do women who experience PPD perceive themselves as different from those who have not had PPD? If so, how?
2. How do women who suffer from PPD describe their personal experience with the disorder?
3. Has this experience changed with time when compared with the experience of women interviewed by Beck (1993)? If so, how?

4. Were there any elements in the stress management program used in this study perceived as helpful by the women in the study?
5. Looking back at how they felt before and after their group experience, do women notice any difference? If so, what factors do the women think may have contributed to the change? What do they know that women who have not had PPD might not know? What would they tell women who are experiencing PPD?
6. How was the experience of the group facilitators administering the MBSR psychoeducational program?
7. What were the factors that prompted the facilitators to use or not use the program at the support groups?
8. What are the facilitators' impressions about the outcomes of using the MBSR program? And what are the differences with not using it, if any?
9. What were the main issues concerning the women attending the support groups as observed by the facilitators?

Data Collection and Analysis

Collection and interpretation of the data took place during the personal interviews using constant comparison and data categorization (O'Connor et al., 2008; Bradbury-Jones et al., 2008) to identify: (a) similarities with Beck's theory, (b) emerging issues, and (c) the most useful aspects of the intervention for participants and facilitators. In the participants' interviews, I asked questions about the participants' own experience with PPD, how they experienced the exercises and guided imagery, whether the topics were representative of their own personal PPD experience, or if new topics or issues were

elicited or missed (Appendix D). Interviews were audio recorded and transcribed verbatim by me.

Demographic information for the study population—women attending PPD support groups in a metropolitan area in Indiana— had never been reported. For this reason, I retrieved demographic information from the participants at interview time about race, age, marital status, time postpartum, history of PPD, history of depression or anxiety during pregnancy, referral source, number of meetings attended, support person present at the meeting, whether women practiced the learned skills between meetings, whether women were currently receiving mental health treatment, psychotherapy and/or medication, and the participants' perception of their own stage of behavioral change according to the TTM at Weeks one and eight.

As part of the interview protocol, I offered participants a set of statements representing different stages of behavioral change according to the TTM to assist them in identifying their own stage of behavioral change at Week 1 and whether this might have changed after 8 weeks of group attendance. Participants selected the statement that best described their current situation and their situation at Week 1 of the study. An example of these statements is: "I don't have any problems adjusting to being a mom that justify my regular participation in the support group." A participant selecting this statement was considered to be in the precontemplation stage. The complete set of statements with their corresponding behavioral stages is provided in Appendix E. I developed the set of statements to determine the stage of change in which the participant was more likely to be following examples suggested by TTM theorists (Evers et al., 2006; Prochaska et al.,

1992). According to Gregory (2007) and Hood and Johnson (1997) content validity can be provided by the informed opinion of experts in the field. To provide content validity, two health care professionals who are specialists in the field of PPD carefully reviewed the set of statements. These experts concurred that the statements accurately described typical behaviors of postpartum depressed women going through the different stages of behavioral change.

To satisfy research questions 6-9, I conducted a separate set of interviews with the group facilitators (Appendix F) to obtain feed-back about: (a) the facilitators' experience administering the MBSR psychoeducational program, (b) how did facilitators decide whether to use or not the MBSR program during a given group session, and (c) the facilitators' personal and professional opinions about the usefulness of the MBSR program in terms of the changes they observed in the participants.

Role of the Researcher in Data Collection

I attended the support groups at the beginning of the study to explain the research project to the participants. At that time, I distributed an informational handout about the study including an individual sign-up form (Appendix I), and the informed consent document (Appendix B) to prospective participants to provide ample time for their consideration to participate in the study as explained above in the segment dedicated to the informed consent procedure. Interested prospective participants had the choice of volunteering their contact information to the effect of being contacted by me to set up an individual personal interview, or they could opt to contact me themselves instead.

Individual interviews with participants and facilitators followed a basic protocol included in Appendices D and F. However, it was possible that further questions would be necessary for clarification and saturation of information. Saturation is reached when no further need exists for information or details arise to complete the answers to the original questions (Guest et al., 2006). In this case, any questions added were documented and included in the transcriptions.

I maintained an observer stance, and refrained from emitting my own opinions or points of view, consistent with the *epoche* characteristic of phenomenological research, a first step consisting in dismissing my own personal experience and interpretations of the studied phenomenon to be able to accept and receive the participants' own experiences of the phenomenon (Moustakas, 1994; Patton, 2002). To this effect, I carried a research journal and annotated personal reactions during the interviews, which helped identify potential biases. With the permission of the participants obtained at informed consent, I audio recorded the interviews to ensure the accuracy of the data.

Data Analysis Procedure

I used the process of constant comparison to analyze the data obtained from the interviews. No additional individual interviews with participants were necessary to complete or clarify responses (O'Connor et al., 2008). Constant comparison is a procedure in which data is identified thematically and then assigned categories after a first round of analysis. Subsequent analysis then occurs at the category level in progressive degrees of abstraction until categories reach a maximum level of generalizability. The following step is to discover the relationships between the

categories (O'Connor et al., 2008). According to O'Connor et al. (2008), the process of constant comparison needs to continue until the results can be described in a graphic model and expressed in a single paragraph.

Some practical measures contributed to the study's rigor. By declaring my functionalistic or positivist paradigm, I kept the issue of interpretative relativism out of the data analysis (O'Connor et al., 2008). I analyzed the data in sequential phases through successive rounds of analysis until data saturation was reached by multiple, subsequent reductions to the next level of abstraction (O'Connor et al., 2008). Triangulation of the information obtained by different sources- women and facilitators- (O'Connor et al, 2008; Pringle et al., 2011) allowed the corroboration of themes. Triangulation took place also between me and an expert in the field of PPD and qualitative research to confirm the direction and thoroughness of the data analysis.

The 8-Week Mindfulness-Based Stress Reduction (MBSR) Psychoeducational Program for PPD

The design of the MBSR program was original, and I based it on the researched literature. I provided the program for the first time in two postpartum adjustment support groups in a metropolitan area of the Midwestern U. S. The pertinent letter of authorization appears under Appendix A. I introduced group facilitators to the administration of the MBSR program, delivered via recordings session by session. The program consisted of eight meetings (Chiesa & Serreti, 2009; Finucane & Mercer, 2006; Kabat-Zinn et al., 1992; Vieten & Astin, 2008). Every meeting started with a physical relaxation exercise (Chiesa & Serreti, 2009) and mindfulness practice geared to focusing

the participant's attention to the present moment, and to identifying current issues affecting the individual participant's life (Kostanski & Hassed, 2008; Vieten & Astin, 2008). Then, a guided imagery exercise followed with attention to specific themes that affect PPD women in general (Gruzelier, 2002) and that reflected the issues identified by Beck (1993). In Table 3, I provide a descriptive plan of the MBSR psychoeducational program.

Table 3

MBSR Psychoeducational Program

Goal/ Objectives	Content	Meeting(s)	Method
1.Teach participants a stress reduction strategy			
1.1.Teach participants physical relaxation	Progressive relaxation	1-8 Beginning of meeting	Practicing deep breathing Practicing progressive muscle relaxation
1.2.Teach participants mental relaxation	Meditation	1-8 Following physical relaxation	Practicing a basic meditation exercise
1.2.1.Teach participants how to increase focus on the present	Mindfulness	1-8 Following meditation	Practicing mindfulness skills of acceptance of feelings, letting go, & focus on the present moment
1.3. Teach participants coping skills related to postpartum stressors	Physical Adjustments Loss of former identity Fear of life will never be the same	1 Following mindfulness	Guided imagery
	Loneliness Normalcy Obtaining support	2 Following mindfulness	
	Coping with PPD symptoms Individual participant's topic	3 Following mindfulness	
	Coping with feelings of unrealness & fogginess Loss of interest Lack of goals	4 Following mindfulness	
	Guilt Lack of positive emotions Initial insecurities	5 Following mindfulness	

(table continues)

Goal/ Objectives	Content	Meeting(s)	Method
	Coping with PPD symptoms Individual participant's topic	6 Following mindfulness	
	Coping with postpartum stressors Building parental competence Building support	7 Following mindfulness	
	Coping with loss of interest New goals Integration of self	8 Following Mindfulness	
1.4.Evaluation		1-8 End of meeting	Voluntary individual feed-back

Threats to Validity

Validity depended upon participants providing answers that genuinely represented their situation at the time of the interviews. Professionals in the field of PPD had validated the questions to identify the participant's stage of behavioral change as appropriate and accurate. I offered participants a verbatim transcription of their interview for accuracy purposes. However, only one participant chose to review her interview prior to its inclusion in the data analysis.

Protection of Human Participants

Protecting the participants against any potential harm originated in this research project was this researcher's main concern. The first step was to obtain education in human subject research participant protection by the National Institutes of Health. I provide evidence of this as a certificate of completion as Appendix G (National Institutes of Health, 2012). I obtained written permission from the group organizer to conduct the

study at the groups (Appendix A). Facilitators introduced to the MBSR program used it at their discretion in the support groups. The next step was to seek Walden University's Institutional Review Board approval for this study prior to start the collection of any data with the goal of making the necessary modifications to the procedure to ensure participants' safety and wellbeing (Walden University, Office of Research Ethics and Compliance, n.d.). In addition, participants received information about the purposes of the study, its components, and the voluntary characteristic of their participation. I addressed confidentiality by excluding any personal identifiers from interviewees' protocols. Participation in the study was limited to individuals over 18 years of age.

As the researcher conducting the interviews, I am a Licensed Professional Counselor with license to practice regulated by the State of Michigan. To ensure the safety and wellbeing of the participants who could have experienced excessive distress during their interview, an emergency procedure involving calling the group facilitators was in place. Both group facilitators were licensed mental health professionals, able to offer support and referrals as needed, and had an emergency plan in place for the participants in the support groups.

I am a member of the American Psychological and Counseling Associations, and as such, abide by those associations' codes of ethics in all professional matters including the protection of human research participants and treatment of records and data (American Psychological Association, 2010; American Counseling Association, 2014).

Summary

A qualitative phenomenological research study took place to understand and describe how participants experienced PPD and the potential impact of postpartum support groups, in particular when they offer an MBSR psychoeducational program to learn to physically and mentally relax, and effectively cope with postpartum stressors. I introduced the present study at the proposal level as a poster presentation at the meeting of the Marce Society in Pittsburgh in October 2010 to an international audience of experts in the field (Pesserl, 2010). It is my intention to present the study's results in specialized conferences and Walden University's research poster presentations at future residencies. I will seek publication opportunities to disseminate the study findings given their positive impact in social change through a cost-effective and easily applicable program that has the potential of being well accepted by women and subsequently, of having an empowering effect on the women and a potential preventative effect against known detrimental outcomes in their children. The dissemination of the findings will also contribute to the body of knowledge in the field of PPD.

In the upcoming chapter I focus on the study results. In Chapter 4,I describe the setting of the study, the demographic characteristics of the sample, and the data collection and analyses procedures. In Chapter 4 I also provide a presentation of the study results organized by research question.

Chapter 4: Results

The study main purposes were to retrieve an updated description of the experience of postpartum depression by the women who are directly affected by it, a description of their support group participation experience, and of the mindfulness based stress reduction (MBSR) program offered at those groups. An important part of these main purposes was also to retrieve information about the experience of the group facilitators in using the MBSR program. A secondary purpose of the study was to describe the population attending the postpartum support groups in a metropolitan area in Indiana in an attempt to compare it with State and national statistics.

In this chapter, I first describe the setting in which the study took place and the sample demographics. Then, I describe the data collection and analyses procedures before presenting the qualitative results and stating the considerations used to assess trustworthiness. I end the chapter with a summary that links to the discussion in Chapter five.

Setting

I conducted the study at two postpartum support groups offered by a hospital in a metropolitan area in Indiana. These groups meet weekly at two different locations, one in a hospital meeting room, and the other in a community center. The support groups are open to the community and are free of charge. Women are welcome to bring their children who stay in the meeting room with their mothers.

Women were referred to the groups by different sources as reported on Table 5 below. Sixty percent of the women were referred to the support group by their OB or the

hospital where they delivered the baby. The rest of the women were either self-referred (20%), having found the group information online, or they were introduced to the support groups by a friend (20%). The women in the study were screened by the support group facilitator prior to attending their first meeting to identify their individual needs and assess for potential severity of symptoms. According to the support groups procedure, when women are assessed at a certain level of severity, for example active suicidal ideation or severe intrusive thoughts, they are referred to a mental health professional or service and invited to join the group after their symptoms have improved. For this reason, women who participated in this study were not experiencing severe symptoms.

I did not facilitate the support groups nor was I present at any time during support groups' meetings. The two groups are facilitated by a master's level professional counselor who is also a registered nurse. During the time the study took place, the group facilitator was assisted by a master's level counseling intern who acted as a co-facilitator. Group meetings are ongoing throughout the year. Women can attend as often and for as long as they want.

The groups are semistructured in nature with the facilitator typically asking the attending women about their past week, their eating, sleeping, and self-care activities. During the present study, women were also offered an MBSR program over eight weeks. The facilitators had full discretion whether to offer this program at any given group meeting according to their assessment of the specific needs of the women in attendance at the time. This means that facilitators could decide to use or not the MBSR program at any

given meeting if they assessed that one or more participants that day needed more time to talk about their own issues.

Over the course of the present study, group meetings had to be canceled twice due to extreme winter weather conditions in the area. The study duration was prolonged to provide the time needed for the eight program sessions to be offered. As a result, there was no disruption in the order the MBSR program was offered, and all eight sessions of the program were completed by the two support groups.

Demographics

I obtained demographic information about the participants prior to each interview when participants completed the demographic information section of the interview protocol. At that time, participants also completed their own self assessment of the stage of behavioral change with which they identified at Weeks 1 and 8 of the study. With the goal of comparing the demographic data of the study sample with national and Indiana statistics, I processed and analyzed the demographic information obtained using SPSS v.21 and summarized it in Table 4. The mean age of mothers of newborns in the U.S. was not reported for 2012. In 2010, it was reported as 27.7 years old. The mean age of the mothers in the present study was 31 years old with a range of 25 to 36 years of age. There was no mean age of mothers of newborns reported for the State of Indiana. Mothers' mean age seems to be a comparable statistic since it falls into the age category of 20-34 years old as reported in both national and State statistics.

As shown on Table 4, the population of mothers attending postpartum depression support groups in the studied metropolitan area does not seem comparable with the U.S.

or State statistics for mothers of newborns except in the category of age 20-34 years old. Mothers age 35 years old and over seem to be overrepresented in this sample. The sample was 100% white and of not Hispanic ethnicity. Ninety percent of the sample women were not single, and 90% had received at least some college education.

Table 4

Comparative summary of the study's demographic information

Category	US	Indiana	Study
Mean age	27.7 (1)	N/A	31
Teen-agers	7.7 %	8.9 %	N/A
20-34 years old	77.3 %	80.5 %	80.0 %
≥ 35 years old	14.9 %	10.6 %	20.0 %
Not single	59.3 %	56.8 %	90.0 %
Single	40.7 %	43.2 %	10.0 %
White	75.9 %	81.5 %	100 %
Not White	24.1 %	18.5 %	0
Hispanic	22.9 %	9.5 %	0
College education	15.5 %(1)	20.2 %	90.0 %

Note. 2012 statistics as reported by the U.S. Department of Health and Human Services (2013) and the Indiana State Department of Health (2014). 1 = 2010 statistics. These categories were not included in the national report of births for 2012.

Mothers in this study were referred to the postpartum support groups by their obstetricians (40%), the hospital (20%), and other sources (40%) mainly a friend or herself via the internet. The mothers in the present study had a mean of 9.7 months postpartum with a range of 2 to 18 months after childbirth. Only one study participant (10%) had a previous history of a postpartum mood disorder. Sixty percent of the sample mothers (n = 6) had experienced depression and/or anxiety during pregnancy, and also 60% were in treatment at the time they were interviewed. None of the sample mothers brought a support person to the group meetings. Only one mother in the study reported

having experienced an adverse event that occurred several weeks before the study started. The adverse event consisted in a worsening of this participant's psychiatric symptoms related to a preexisting disorder which led to the participant's hospitalization. This event was not related to the study and did not occur during the time the study took place. This participant started attending the postpartum support group at Week 4 of the present study, took part in the MBSR program from that moment on, and volunteered to be interviewed for this study at the end of Week 8.

The mean number of meetings attended during the 8 weeks of the study was 5 with a range of 2 to 8, and 80% of the mothers attended at least 5 meetings. Eighty percent of the participants reported having practiced at home the MBSR techniques learned at the group, specifically paced, deep breathing, progressive relaxation, and visualization. While five mothers (50%) identified themselves as being in the contemplation stage of behavioral change at Week 1, nine mothers (90%) identified themselves as being in the action stage at Week 8. Of these, two (20%) were in the action stage at Week 1. One mother (10%) reported being in the maintenance stage and thinking of discontinuing attendance to the support group due to being in remission. This information is summarized on Table 5.

Table 5

Descriptive Summary of participants

Category	*n*	Percentage	Mean
Postpartum Time			9.7
2-9 months	6	60%	
10-18 months	4	40%	
Previous depression/anxiety	6	60%	

(table continues)

Category	*n*	Percentage	Mean
Previous PPD	1	10%	
Currently in treatment	6	60%	
Adverse event during study time	1	10%	
Meetings attended			5
2-4	2	20%	
5-8	8	80%	
Practiced MBSR between meetings	8	80%	
Referred to group by			
OB	4	40%	
Hospital	2	20%	
Other: a friend	2	20%	
self/ web	2	20%	
Positive Behavioral Change	9	90%	

Note. One participant reported an adverse event that occurred while the study was taking place. The adverse event consisted in this participant's hospitalization due to a worsening in her psychiatric symptoms right before the study's Week 1 and was released on time to join the support group at Week 4 of the study.

Data Collection

Ten women who attended the postpartum depression support groups and the two facilitators of these groups participated in the study. I interviewed all 12 participants—10 women and two facilitators—using the semistructured protocols in Appendices D and F. The interviews took place at either: a location selected by the participants, right after group at the meeting site, or at prearranged times at the participants' homes or at a hotel room rented for the purpose of conducting the interviews. I audio recorded the interviews with previous permission of the participants. Participants selected a pseudonym under which the interview recording was filed, transcribed, and processed. There were no variations in data collection from the plan presented in Chapter 3. In most cases, infants and toddlers were present during the interviews, and occasionally, the interviews were

interrupted to give participants time to tend to their children. These interruptions were noted in the verbatim transcriptions of the interviews.

Data Analysis

I used the procedure of constant comparison to analyze the data extracted from the interviews. I first highlighted the interviews' transcriptions to identify topics brought up by the participants. Then, I transported every single, identified topic into an Excel file to keep track of all references, and noted the amount of references by topic. This procedure facilitated the identification of 342 codes which, after eliminating redundancy, were organized into 115 categories arranged per research question and two unrelated themes that emerged from the analysis: (a) PPD contributing factors, and (b) stages in the development of the participants' experience. At this level, and in an effort to look for consensus, the researcher identified issues that were mentioned by all women at least once and distinguished them from issues that were mentioned only by 50% to 99%, and from issues that were mentioned by less than 50% of the participants.

Next, I identified the categories with most references independently of how many participants mentioned them. The rationale behind this step was that the number of times an issue came up, even if mentioned only by one participant, may indicate the level of intensity with which that issue was experienced. The last two rounds of analysis focused on collapsing the initial categories of codes into four main themes, and nine stages which will be described in the results section of this chapter. I summarized the data analysis procedure in Figure 5.

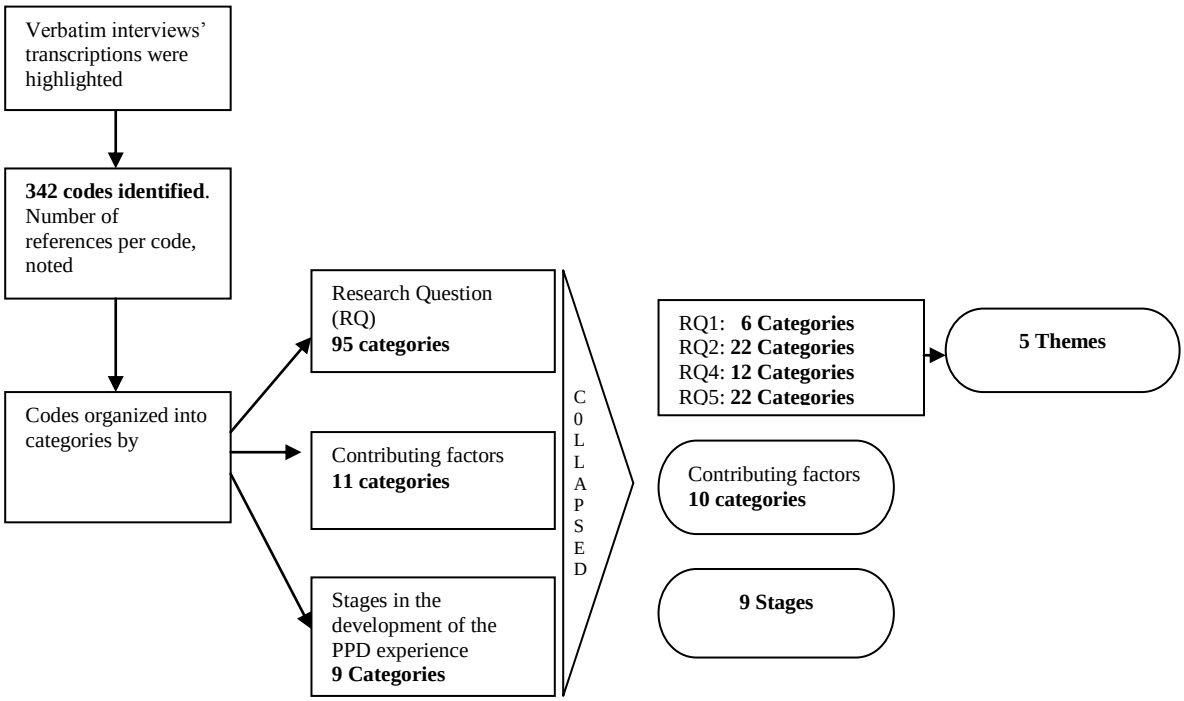

Figure 5. Data Analysis Procedure for Research Questions 1 and 2.

I included all data provided by the participants in the analysis. In cases where codes appeared to be contradictory, I referred back to the source of the information-- the interview-- to verify the meaning of the specific information and made a note next to the specific code to ensure the appropriate interpretation of what the participant intended to convey. For example, when asked if she perceived herself as different from women not having PPD, one participant responded she felt "no difference" which was consistent with the same participant's response of feeling "normal", further explained by the participant as "it can happen to anybody". Three other participants perceived themselves as "not normal" when they compared themselves with women with no PPD. They further

qualified this perception as feeling that “something is wrong”, having behaviors they don’t understand such as crying while holding the baby, and having to “take more medication than the average person”. The meaning associated with the word “ normal” was different when used as what the first participant interpreted as one does not need to be different to have PPD, whereas the other participants focused on the differences between women who had PPD and women who had no PPD. These differences were noted to allow the appropriate categorization of the codes “normal”, “no difference”, and “not normal”.

Research Question 3(RQ3) is comparative in nature, and for this reason, I analyzed it separately. Its analysis entails the comparison of the present research’s findings with the ones obtained by Beck in 1992 and 1993. Consequently, I conducted the analysis pertaining to RQ3 after the analysis described in Figure five.

Evidence of Trustworthiness

In regards to credibility, I used one protocol of questions for all participants’ interviews and another protocol for both group facilitators’ interviews. Participants had as much time as they needed to answer the interview questions. I offered every participant the option to receive the verbatim transcription of the interview before proceeding to data analysis. Only one participant was contacted after the interview for clarification. All participants but one declined to review the verbatim transcription of their interview. One participant received the copy of her interview via email and responded providing agreement about the accuracy of the transcription.

Transferability of the study's results is cautionary given the demographic differences that exist between the study's sample and the Indiana and U.S. statistics for mothers of newborns. As compared with previous studies, the present study showed evidence of areas of consensus as well as new emerging themes. The presence of commonalities in the findings could point to transferability. However, only future research conducted in other geographic areas and with more diverse samples could provide evidence of said transferability.

The procedure implemented to obtain participants' informed consent, and to collect and analyze data followed the steps described in Chapter 3. Adjustments to the progress of the study from Weeks 1 to 8 were necessary because of inclement weather conditions in the area due to which some support group meetings were canceled. This fact only prolonged the total duration of the study with no impact on the procedure otherwise.

In regards to confirmability, I used triangulation by comparing data provided by participants and group facilitators, and by submitting data at different stages of analysis to a university faculty member acquainted with the study, and an expert in the fields of PPD and qualitative research design. Once I reached saturation of data, and after drawing conclusions and relationships between themes, three women in the community who had no relationship with the study reviewed the results and provided feedback for consistency.

Results

In the first part of this segment, I present the results of the analysis of data collected from the women participating in the PPD support groups first organized by research question. For Research Questions 1, 2, 4 and 5, I identified the following issues: (a) issues mentioned by all participants, (b) issues mentioned by 50% to 99% of the participants, and (c) issues with most references, regardless of how many participants mentioned them. I present this information as a table for each research question. Then, I summarize each research question describing the relationships between categories to explain the organization into themes.

During data analysis, two unexpected sets of information emerged from the participants as separate entities: (a) factors that may have contributed to the development of PPD as identified by the participants, and (b) stages in the development of the PPD experience. I present the results for these two information sets separately. Research Question 3 refers to the comparison between the present study's findings and Beck's theory of PPD (1993). Its analysis will conclude the first part of this segment related to women participating in the PPD support groups. In the second part of this segment, I present the results emerging from data collected from the group facilitators providing answers for Research Questions six through nine.

Results Emerging from PPD Support Groups' Participants' Interviews

Research Question 1 (RQ1). Do women who experience PPD perceive themselves as different from those who have not had PPD? If so, how? In Table 6, I summarize the results obtained from the participants' answers. There was not a single

specific issue identified by all mothers. Over half of the participants expressed there was something different but they were not able to understand what. One woman said: "I am broken somehow", another woman expressed: "I don't know how to be a mom" when comparing herself to women with no PPD. Mothers explained this difference as lacking parental skills and not being as good of mothers as compared to women who do not have PPD. One woman wondered:" Maybe, I wasn't made to be a mom" while women who do not have PPD are. Women in the sample found this to be stigmatizing. They felt judged by other women due to having to adjust their parenting style to meet basic needs, such as sleeping with the baby just to get some sleep.

Table 6

RQ1 Results

Participants	Issue	References
At least 50% of participants but not all	-There is something different between them and moms with no PPD but they cannot understand what	24
	- Moms with no PPD have an easier adjustment	17
< 50% participants	-There is no difference	7
	-There is a new wisdom that moms with no PPD don't have	4
	-Being off balance	3
	-Need to be understood by women with no PPD	1

Over 50% of the sample women believed that women with no PPD had an easier adjustment to motherhood and as a consequence they were happier because they had struggled less than women with PPD. Women with no PPD were perceived as more spontaneous, less anxious, less worried and more organized, as "doing things perfectly and achieving things". One sample mom said "It's hard not to compare and be jealous". This is consistent with the idea reported by another woman in the sample who said she

felt “off balance”. One woman in the sample reported not seeing any difference between her and mothers who did not have PPD. However, she and two other women qualified this by saying PPD could happen to anyone. Once it happens, though, women reported it to be a “life altering experience”, something women who never had PPD would not know.

Research Question 2 (RQ2). How do women who suffer from PPD describe their personal experience with the disorder? I present the results related to RQ2 on Table 7. All women in the study qualified their PPD experience in a range from challenging to horrible and terrifying with five moms describing PPD as “the hardest thing I’ve ever gone through”. All women in the sample reported pervasive and severe anxiety leading to panic attacks. Mothers in the study described their anxiety as feeling out of control, like being “on 50 million Mountain Dews”. Their anxiety was related to going out of the house, doing activities with the children, worrying about the baby’s wellbeing, not being a good provider for her children, and a general sense of dread. Anxiety was the most referenced issue followed by depression which was mentioned as an issue only by six mothers in the study.

Mothers in the study described their depression as a long struggle characterized by severe lack of interest, tiredness and exhaustion, feeling depleted, with excessive crying, sadness, and negative thoughts about self based on their belief about not being a good mother. Some expressed: “I’m a horrible mom”, “I’m a failure”, and “I’m not good enough”. Mothers reported feeling hopeless about getting better and lacking a sense of purpose asking themselves “why am I here?”

Table 7

RQ2 Results

Participants	Issue	References
All participants	-Anxiety	112
	-Bad, hard, challenging	33
At least 50% of participants but not all	-Depression	77
	-Experience that they cannot understand	48
	-Unexpected	37
	-Guilt	31
	-Overwhelming	31
	-Need to be understood	28
	-"Crashed", unable to function	27
	- Severe sleep disruption	19
	-Unmet expectations	16
	-Feeling inadequate	13
< 50% participants	-Isolation	26
	-Anger, irritability	22
	-Intrusive thoughts	20
	-Suicidal ideation	15
	-Loss	13
	-Severe inability to eat	13
	-Avoidance as a coping mechanism	9
	-Need for adjustment	6
	-Mood swings	4
	-Stigmatizing	3

Mothers in the study described their PPD experience as a shocking, illogical one that they could not understand. One mother said: "I feel like a monster"; another woman said: "I feel like an ogre". Women expressed their need for understanding what was happening to them and why. For example, participants stated they could not understand why they would not accept help when they knew they need it, or why they were not bonding with their babies. One mother reported not having had PPD with prior children which made her think she was "not normal" now. This contributed to mothers describing their PPD experience as "unexpected". They did not expect to have engaged in behaviors

such as binge drinking, smoking and not taking care of their own appearance. They did not expect the intensity and severity of their symptoms. According to mothers in the study, what might have contributed to the unexpected quality of their experience is the inconsistency between their own experience and what they had heard from other people about having a baby.

Mothers in the study reported feeling guilty about being a bad parent which one mother exemplified with her thought that the baby might cry because of her "lack of attention". Guilt was also related to: (a) having children close in age, (b) wanting to go out without their children, (c) not functioning as expected in taking care of the children and the house, (d) taking time for themselves, (e) not bonding with their babies, (f) their feelings and behavior around the baby such as screaming in front of the baby and stopping breastfeeding, (g) not working outside of the house, and (h) feelings about their husbands which one mother expressed as "he deserves a better wife". One woman reported feeling guilty about her intrusive thoughts and feeling she would not be able to protect her child if anything bad happened to him. Mothers reported feeling overwhelmed and stressed out due to being busy with their babies all the time. Feeling overwhelmed was also brought up in relation to taking care of more than one child. Both guilt and feeling overwhelmed, received the same amount of references by the women in the study.

Women with PPD expressed their need of being understood by their husbands and their families. They reported "feeling judged" by others and "looked down on" due to their parenting and their inability to function for which they were seen as "lazy". Women

in the study also expressed their need to be understood by the medical professionals. Specifically, women with PPD stated that their physicians were unaware of the prevalence of PPD and did not bring it up.

Mothers reported a general inability to function in different areas of their lives. One mother described it as feeling "crashed"; another stated: "I did not feel I had a good grasp on everything". Women in the study explained their inability to function as being unable to leave the house, take care of the children, to concentrate and focus, to make decisions, to take care of their own basic needs, and having poor memory. This inability to function clashed against women's expectations about the experience of having a baby, the demands of having more than one child, about trying to be "a perfect mom". One mother expressed that these inappropriate and unmet expectations were fostered by how parents in general talk about their experience of having a child. Feeling inadequate may be the result of the combination of unmet expectations with the reality of mother's inability to function. Severe sleep disruption, which was reported by most mothers, may have contributed to mothers' inability to function. Feelings of inadequacy were related to temporarily "having to give up the kids" to the grandparents for help, to feeling ashamed of not being able to handle the situation without help, and to feeling incompetent about knowing what to do as a mother.

Of the issues reported by less than half of the women, isolation appears to be the most impactful due to having the highest number of references. Women reported "masking" their feelings and only talking about them with their spouses. Women felt "lonely" and thought that others do not want to know about their struggles. Women

thought they were the only ones feeling the way they felt. Frustration, irritability and anger were geared towards self and also manifested as feelings of resentment towards husband because of "what he was still able to do" and she is not.

Only three mothers reported experiencing relentless intrusive thoughts about suicide and about accidentally hurting their children. One mother reported also having nightmares related to the intrusive thoughts. Only two mothers in the study reported having had suicidal thoughts expressed as: "they'd be better off without me". Mothers also expressed feelings of loss derived from "missing out on a lot" by not enjoying motherhood, from a loss of identity related to not working any more, and the loss of a lifestyle.

Three mothers reported experiencing a severe inability to eat which resulted in unwanted and excessive weight loss. Two mothers expressed having thoughts of avoidance as a coping mechanism. They expressed thoughts such as: "Just take my kids away", "I just want the day to be over", "I just want to sleep until it's over", and "Just wanted to run away leaving everything behind and never come back". Mothers reported that these thoughts resulted in them "shutting down".

Two mothers in the study referred to their experience as "adjusting" to regain balance in their lives because of the overwhelming impact of motherhood on their lives. One of the mothers expressed it as: "I feel like all areas of my life are postpartum right now". Another mother described her PPD experience as mood swings, "ups and downs" that she explained as a "shift in hormones". Two other mothers qualified their experience

as stigmatizing due to the negative effects of public misinformation which affected even their husbands.

I collapsed the categories of issues described above into five main themes to describe the study's women's experience of PPD as presented in Figure 6: Overwhelming pressure, disillusion about her motherly experience, trapped and unseen, bewilderment, and needing to find a voice. These five themes will be described in the following paragraphs.

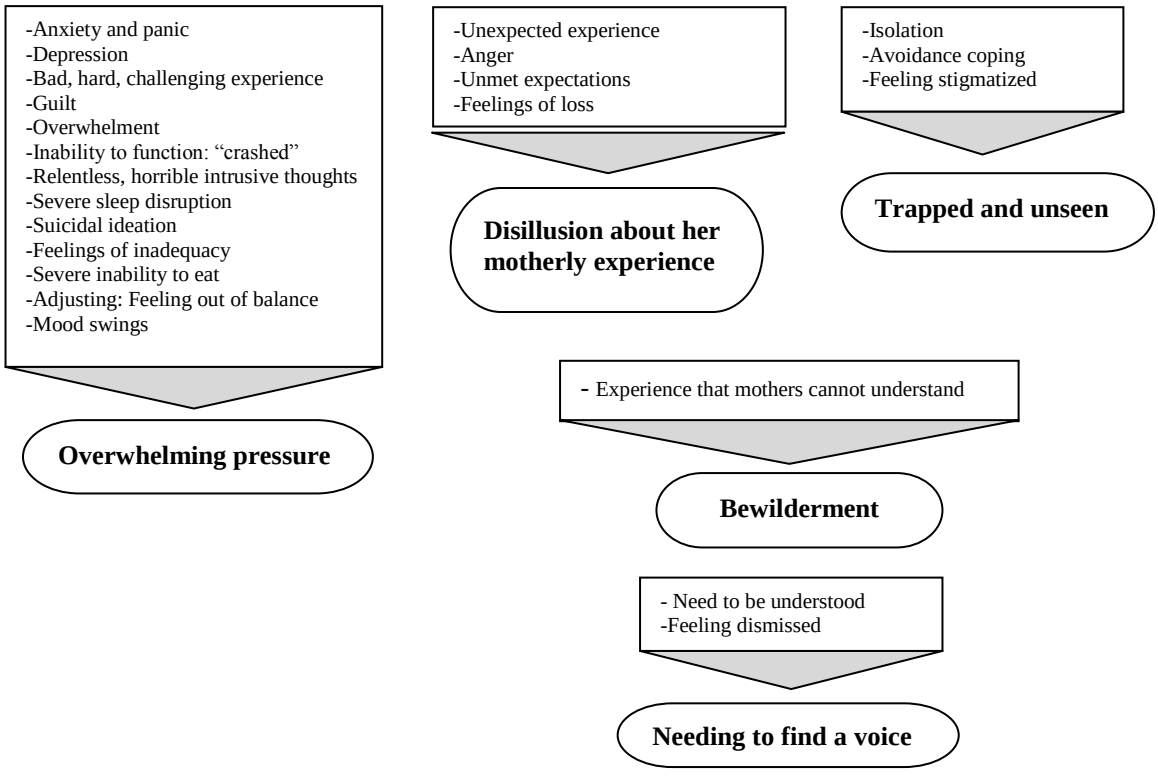

Figure 6. The five themes characteristic of the PPD experience.

Overwhelming pressure. This theme is characterized by anxiety and panic that generate feelings of being out of control. Depression is experienced as a "funk", a "dark cloud always over me", with suicidal thoughts, mood swings, and a constant struggle which leaves mothers stressed out. Child's needs, guilt, and intrusive thoughts contributed to the feelings of being overpowered. Mothers reported feeling "out of balance" and "crashed", unable to eat, sleep and function in everyday life. The result is a need for a sense of ease and control.

Disillusion about her motherly role. The unexpected feelings and changes in mothers' behavior result in a sense of multiple losses related to their motherly experience. Inappropriate expectations about being "the perfect mom" lead to unmet expectations about the demands of child rearing and the need for help. The women in the study also brought up their unmet expectations about how fast and effectively medications prescribed by their physicians would work. Unmet expectations seem to contribute to the feelings of multiple losses such as "missing out" on what was happening in their lives, not enjoying the baby and their new role, their identity, and their lifestyle. Mothers attributed their inappropriate expectations to the way parents in general describe their experience, and the lack of information on their physician's part. Feelings of anger, resentment and betrayal were the result.

Trapped and unseen. Mothers reported feeling lonely and alone in their PPD experience. These feelings were supported by the stigma PPD mothers perceive from the public misinformation about the disorder. The feeling of being trapped appears to be reinforced by the mothers' avoidance coping style consistent with references of fleeing

away from their situation provided by the women in the study. In some cases, mothers felt dismissed and misunderstood even by their partners, which lead to the "unseen" part of this theme. Isolation and avoidance seem to translate into feelings of abandonment.

Bewilderment. The PPD experience of the women in this study was "shocking". They could not explain it because they could not understand it. They could not make sense of their feelings, and they questioned the reasons for those feelings. "Why" seems to be a persistent question: "Why is this happening to me?"; "Why do I feel the way I feel?"; "Why I'm a horrible mom?" Mothers also questioned their "illogical" behavior, such as asking for help and then not accepting it; or crying while holding the baby.

Needing to find a voice. Women stated their need to be understood having felt dismissed by their partners, their families, other parents, and their physicians. Women also felt judged. The need to be understood drove mothers to obtain information and education about PPD.

Research Question 4 (RQ4). Where there any elements in the stress management program used in this study perceived as helpful by the women in the study? On Table 8, I present the results related to RQ4. All women in the study found the MBSR program helpful. Some women reported that visualizing themselves in a peaceful setting helped them to "step back a little". The visualization part of the MBSR program seemed to help some women know their own body better. Other women used the visualization exercises to see themselves as strong and happy. Visualization also helped with dealing effectively with intrusive thoughts by recognizing a thought or a feeling for what it was without attaching any meaning to them.

Table 8

RQ4 Results

Participants	Issue	References
All participants	-MBSR program was helpful.	44
At least 50% of participants but not all	-MBSR program was empowering	90
	-MBSR program was calming and relaxing	39
	-MBSR program helped with anxiety	26
	-All topics in the program were relevant	9
	-Nothing was experienced as disruptive/ counterproductive	7
< 50% participants	-MBSR program helped with depression	6
	-MBSR program feels better with consistent practice	4
	-Motivation to practice program without the kids	2
	-Will share recording with her husband	1
	-Good to be combined with other activities (exercise, walking)	1

Other helpful elements of the MBSR program as reported by the women in the study were going to a safe place with the imagination, counting down, the breathing technique, the progressive relaxation, the music, and the peaceful voice of the narrator. One mother stated that the MBSR program "got you thinking about a lot of good points"; another found it "revealing" and "challenging in a good way" because it helped her "look at things that I haven't looked before". In general, mothers in the study expressed that the MBSR program helped them re-center and refocus, and to be in the present moment.

Over half of the women found that the MBSR program helped them cope well with anxiety and panic attacks. These women found that the MBSR program helped them identify triggers for stress, anxiety, and specific obsessive, intrusive thoughts with which they were able to cope without excessive anxiety or panic. One mother reported using the MBSR techniques during a panic attack which allowed her to get through the situation.

Women reported being able to face new stressful situations successfully by using the techniques presented in the MBSR program, for example when facing returning to work, moving, or child care stress in general. One of the women used the MBSR techniques to plan buying a new home as a tool to address a goal that otherwise seemed overwhelming. In this sense, the MBSR program was viewed as an empowering tool for life in general which seemed to help women with anger, irritability, and self-destructive behaviors. One mother stated that the MBSR program offered at the support group helped her identify what she could change. Women mentioned motivation to take action and to change as one of the effects of the MBSR program. One woman felt motivated to listen to music that reconnected her with a moment in her life when she had felt strong; another woman felt motivated to start going outside in good weather; another mother found a picture of herself smiling and used it for her visualizations.

Women liked that the MBSR program can be used right away, that its results improve with consistent practice, and that it does not require to "fully shut down", the latter being important because mothers can practice it effectively while still being aware of their surroundings. Mothers found the experience relaxing, calming, safe, and enjoyable. Women used the MBSR program to fall asleep at night, and saw the MBSR program as a good alternative for anxiety when medication is ineffective.

While all mothers thought that all parts of the MBSR program were relevant, only seven mothers found nothing disruptive or counterproductive other than the noise created by the children in the room. One mother said it was difficult for her to visualize herself in a quiet place. A second mother said she was unwilling to think about a current problem

because all she could focus on was the dishes piling up in her kitchen. The third woman reported that thinking about her self-image was difficult; however, she was able to work through it helped by the music and the narrator's peaceful voice.

Less than half of the sample women reported that the MBSR program helped with their depression. In general, less than half of the women found that the MBSR program felt better with consistent practice as they were able to progressively gain focus on the exercises. One woman felt motivated to try the MBSR program in a setting with no children present; another said she wanted to practice the exercises with her husband. One woman thought that the MBSR program can be successfully combined with other activities, for example to relax after exercising.

Research Question 5 (RQ5). Looking back at how they felt before and after their group experience, do women notice any difference? If so, what factors do the women think may have contributed to the change? What do they know that women who have not had PPD might not know? What would they tell women who are experiencing PPD?

On table 9, I present the results obtained for RQ5 organized by the four items addressed by this question. All mothers in the sample found the support group to be helpful. One mother described it as "a blessing". Over half of the mothers in the study found that attending the support group helped them to improve their debilitating symptoms. For example, mothers reported crying less, having less intrusive thoughts, better functioning, better bonding with their infants, and less negative self-talk. Additionally, mothers reported having less anxiety. One mother described it as "my head is a little clearer"; another said that the group "helped me not to run away".

Many women found their group experience to be empowering since they have more skills acquired at the group. Women also reported that they found a sense of purpose in attending the group, and that the group motivated them to change. Women stated that their group attendance helped them recognize they were doing a good job as mothers.

Support group participation helped women in different ways such as taking care of selves by eating better, and not overwhelming themselves. The group helped women have a better perspective of the disorder; specifically helping them to understand their intrusive thoughts, and de-stigmatizing their experience by helping them recognize that having PPD is not their fault, and that it can happen to anyone. Attending the support group further helped women realize that they are not alone in their PPD experience thus bringing a sense of relief and a willingness to share their stories.

All the women in the study agreed that the main factor contributing to the support group's success is the group community, including both the other participants and the group facilitators. Just the mere fact of being at the group with the other participants and meeting new people was helpful because they formed a bond and they could relate to the other mothers' experiences. An important aspect of the group community factor is that the group provides a "sounding board" where a personal connection and a conversation take place. Just listening to other mothers, observing other parenting styles, and seeing women at different stages of their recovery gave them hope. Women agreed about the importance of being able to provide help to each other. All women expressed that

confidentiality and mutual nonjudgmental listening were crucial characteristics of the group community which made them feel safe during group meetings.

Table 9

RQ5 Results

Participants	Issue	References
	•Changes before and after support group participation:	
All participants	-Support group was helpful in general.	22
At least 50% of participants but not all	-Group helped with debilitating symptoms.	14
	-Support group was empowering.	18
< 50% participants	-Group helped with taking care of herself	18
	-Group helped her understand	10
	-Group helped against isolation	8
	•Support group contributing factors :	
All participants	-The group community	73
At least 50% of participants but not all	-Practical help	11
< 50% participants	-Consistency	15
	-Children are welcome	2
	•What do women with PPD know that women with no PPD do not know?	
< 50% participants	-It can happen to normal people	8
	-Can be understood only if experienced	5
	-PPD affects the whole family	1
	•What would they tell women with PPD?	
At least 50% of participants but not all	-Ask and accept help	48
	-There is help for women with PPD	30
	-You are not alone	16
< 50% participants	-Accept your feelings	10
	-This is temporary	8
	-It can be explained	6
	-Adjust your expectations	4
	-You are a good mom	4
	-Be proactive	2

At least half of the participating women found that the practical help offered at the group was an important factor contributing to the group success. Attending the group broke the isolation by providing a safe place to meet, and motivated action because the women left their homes to come to the meetings. Through their group participation, mothers were able to work through things happening in their lives. The education on PPD provided by the group facilitators was also considered by these women as an important success factor.

Some participants mentioned consistency as an important contributing factor. Participants' consistent attendance showed that the other women "were still fighting". The facilitators' consistent follow-up from meeting to meeting, about the events in the women's lives and the changes the women were able to make to improve added accountability. Women reported that this sense of accountability motivated them to eat and sleep better, and to find time for themselves in between meetings. One woman stated being appreciative of being able to bring her children to group without which she could not attend.

Through their PPD experience, women in the sample came to know that PPD can happen to normal people in spite of what is conveyed in public media. Women reported being aware of the public misinformation and of the importance of acknowledging PPD as a disorder that can happen to any woman. They also know that PPD is a very personal experience that cannot be completely understood from the outside, so women expressed "Do not judge me" if you have not been through it. Women also recognized that PPD affects the whole family, and not just the mother.

There was no consensus in the study's sample about a single thing that all study participants would like to say to other women with PPD. However, most of the women underscored the importance of asking and accepting help. One woman said: "Help gets you to the next day". Women recommend accepting help for relaxation, to take care of self and of the relationship with the partner. Women understand that there are many channels of help and that help needs to be individualized to fit the needs of the specific woman. Women in the study pointed out that it is not only important to ask for help or reach out to family members and professionals, but it is necessary to accept help from those sources. Women in the study reported not accepting help when it was offered which was a behavior difficult for them to understand.

During the process of analyzing data, two emerging issues not addressed specifically by the research questions appeared: a) The factors that may have contributed to the development of PPD as identified by the women participating in the study; and b) the stages in which the PPD experience of the women in the study seem to have developed. The following segments will describe these findings.

PPD contributing factors. I summarized the PPD contributing factors as identified by the women in the study on Table 10. No specific contributing factor was identified by all women in the sample. However, 70% of the mothers reported that pre-existing mental health issues worsened during pregnancy and the postpartum period. The mental health issues reported by the women in the study were depression, postpartum depression with previous children, obsessive compulsive disorder, anxiety, social anxiety, and an eating disorder. Two mothers in the study reported having had "emotionally tough

times" during pregnancy, and one mother reported experiencing a delusion during delivery. Other contributing factors were identified by less than 50% of the women in the study. Mother's physical issues related to severe, chronic pain and hospitalization were the most frequently referred within this category. The physical issues were related to illness and accidents. One mother attributed her PPD onset to hormonal imbalances around the resuming of her menstrual cycle and stopping breastfeeding simultaneously. Another woman associated her PPD symptoms with stopping breastfeeding as well.

Table 10

PPD contributing factors

Participants	Issue	References
At least 50% of participants but not all	-Pre-existing mental health issues	22
< 50% participants	-Mother's physical illness	15
	-More than one child	12
	-Lack of support	9
	-Physician related	9
	-Financial needs	7
	-Baby's health issues	7
	-Previous miscarriages	3
	-Introverted personality	2

The second most referred issue in this category was feeling overwhelmed caused by having to take care of more than one child, in particular when the children were close in age. Lack of a support network included the husband being out of town due to work demands or going back to work after the baby was born. Not having primary family members such as parents or siblings close and available to help contributed to the women's identified lack of support as did the lack of reliable institutional childcare.

Two women reported that their physicians did not bring up PPD. One of these women reported that, even though she had had PPD with previous children, her physician did not identify nor diagnose the disorder, provided only a medication prescription for the symptoms, and did not follow-up thereafter. Another woman expressed her belief that "physicians are not aware of the prevalence" of PPD as being the reason for the lack of prevention efforts on their side.

Financial concerns played a role in PPD development according to two mothers who felt compelled to return to work after the baby even though they had wanted to stay at home. Financial needs emerged as a consequence of the husbands losing their jobs and with it the family's insurance coverage. A woman reported the high cost of health care insurance making it unavailable to her family. Job loss along with its consequent costs and change of lifestyle also resulted in the family having to move which this mother described as "an unexpected turn of events". One of the women identified her husband's expectations about her contributing to the finances of the family as a factor in the development of her PPD symptoms.

Two other women identified their babies' health issues as a factor in the development of PPD. Specifically, the baby being in the NICU, prematurity, colic and acid reflux were the issues mentioned by the mothers as PPD's contributing factors. Two mothers also reported having previous miscarriages which they related to their PPD symptoms.

One mother in the study described herself as having an "introverted personality type" for which she tended to stay at home and not reach out. According to this mother, it

was her tendency not to initiate activities with the children and not taking them out of the house which contributed to her feelings of frustration about herself. These feelings of frustration were seen by this mother as a consequence of her personality type.

Stages of the PPD experience. The women who participated in this study had different experiences as of the time of onset of their symptoms. Two women reported having had symptoms of depression and anxiety already during pregnancy. Other women reported onsets of 1 to 9 months postpartum. From the narrative of the participants, nine identifiable stages emerged as I present in Figure 7.

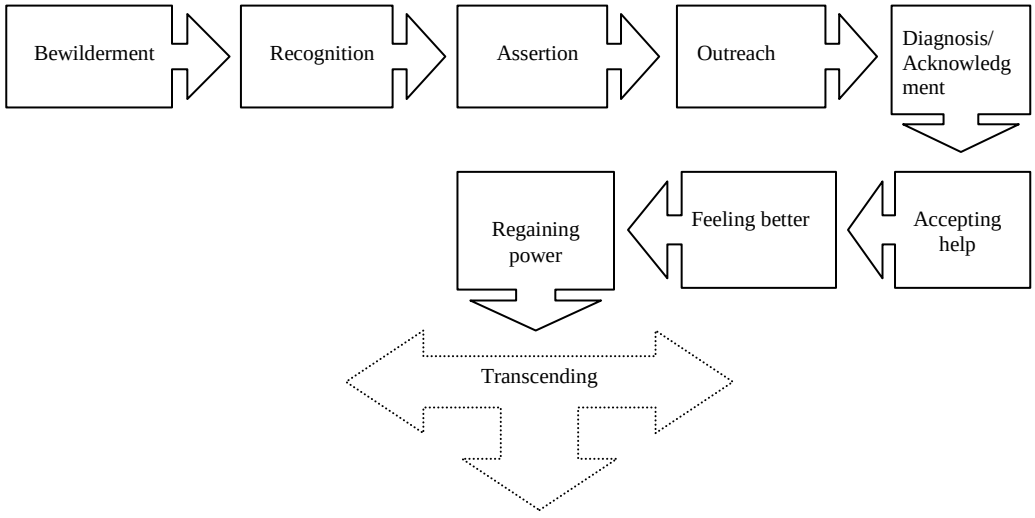

Figure 7. Stages of PPD progress.

At the beginning, during the bewilderment stage, women expressed not understanding what was happening to them. One mother reported it took her one month of having symptoms before starting to recognize that something was wrong. Another mother who had PPD with prior children said she "suffered through it" in the past with no

recognition or treatment. The recognition stage is characterized by the mothers' realization that they need help, and that what they are enduring does not seem to be normal. Both women who started having symptoms during pregnancy did not recognize it at that time. Only one of them was identified in the hospital after delivery and referred to the support group. Once mothers recognized that something was amiss, they started to assert their needs accordingly. In the assertion stage, women realize that they cannot do it by themselves. One mother said: "I realized this was a bigger problem than I thought". The same woman expressed understanding that what was happening to her was a complex issue with different aspects that needed to be addressed individually. During this stage, women educated themselves about PPD and gained a deeper understanding of their needs. This newly gained knowledge and understanding of selves prompted women to reach out. It is during this stage that women asked for help by engaging family members in practical help at home and with the children. During this stage, women reached out to their doctors for medical help and referrals. This is the time when women started attending the support group. One woman in the study reached out to her church for support.

The reaching out stage results in women either being formally diagnosed with PPD or another perinatal mood disorder, or being acknowledged in their suffering by the people in their support network. During this stage, women feel relieved with a new understanding that what is happening to them has a name and can be addressed and treated. What follows is a new stage when women start accepting help. As one woman in the sample reported, asking for and accepting help are not the same. Accepting help in

different forms requires an understanding that needing help is not a reflection of poor or inadequate parenting. With the information gathered during the assertion stage, women in the sample understood that they needed to seek out and accept different channels of help: practical in the home and with the children, medical, behavioral, and related to lifestyle such as eating and sleeping better, exercising, and taking supplements. Women in the study also reported seeking out practical help with the goal of doing things they used to enjoy. One mother reported practicing devotionals as a form of spiritual help. Attending psychotherapy and the support group helped women maintain consistency with these changes.

The result of proactively accepting help to address the women's different needs was that women in the study started to feel better. At this stage, women reported that the prescription medications had started working with a consequent sleep improvement. The perception of help changed to accepting help as a "help to function" to, for example, spend time playing with the children. Women reported starting to bond with their babies, starting to feel happy, being less "perfectionistic", and starting to enjoy their parenting role more. At this stage, consistent support group attendance was supported by the women feeling hopeful about increasingly benefitting from it.

After feeling better, women started to regain their power which one woman expressed as "getting back to normal". Women reported having a more positive attitude about their experience as one woman expressed: "I got to know new people at church, neighbors". The feeling of empowerment was the result of knowing herself better. At this stage, one woman reported being ready to start phasing out of the support group. A

need for transcendence manifested as wanting to help other women with PPD. Women expressed that their participation in this study was a way for them to fulfill that need. Women have a new wisdom coming out of their PPD experience. They understand the importance of help and of becoming an inspiration for other women.

Research Question 3 (RQ3). Has the PPD experience changed with time when compared with the experience of women interviewed by Beck (1993)? If so, how? On Table 11, I present the results obtained in this study next to what could be considered their equivalent in Beck's (1993) theory. Themes in Beck's theory were paired once with the most fitting themes found in the present study. For example, Beck's (1992) *insecurities respect of being a bad mother* is paired with the present study's *feelings of inadequacy* under the theme *overwhelming pressure*.

The results of the present study were organized in five themes, whereas Beck's (1992) study arrived to 11 themes. The issues characteristic of each theme are also displayed to allow for a clear comparison between both sets of findings later in Chapter 5. Ten issues that emerged in the present study were not present in Beck's (1992) themes. These are: Feeling overwhelmed, severe sleep disruption and inability to eat, mood swings, unexpected experience, anger, unmet expectations, avoidance coping, and feeling stigmatized and dismissed. Sleep deprivation and feelings of being overwhelmed were mentioned by Beck (1992) in relation to mothers' physical and mental exhaustion, their intrusive thoughts, and their "responsibility of motherhood" (p.170). The "need to be mothered herself" (Beck, 1992, p.170) did not emerge as a result of the present study.

Table 11

Comparison of themes

Present study		Beck's theory (1992)
Overwhelming pressure	-Anxiety/ Panic	-Uncontrollable anxiety that leads to feelings of insanity, and of being on the edge.
	-Depression	-Lack of all positive emotions with a robotic stance, deprived of feelings
	-Bad, hard, challenging experience	in what she describes as going through the motions.
	-Guilt	-Guilt.
	-Overwhelment	-n/a
	-Inability to function; "Crashed"	-Mental fogginess and reduced ability to concentrate.
	-Relentless, horrible intrusive thoughts	-Obsessive thinking with suffocating fear and guilt at the thought of harming the infant.
	-Severe sleep disruption	-n/a
	-Suicidal ideation	-Contemplation of death as providing a glimmer of hope about stopping feeling the way they feel.
	-Feelings of inadequacy	-Insecurities respect of being a bad mother (…).
	-Severe inability to eat	-n/a
	-Adjusting: Feeling out of balance	-Life is empty of all previous interests and goals.
	-Mood swings	-n/a
Disillusion about her motherly experience	-Unexpected experience	-n/a
	-Anger	-n/a
	-Unmet expectations	-n/a
	-Feelings of loss	-Irretrievable normalcy with grieving her loss of self.
Trapped and unseen	-Isolation	-Unbearable loneliness that manifests in feeling uncomfortable among other people (…).
	-Avoidance coping	-n/a
	-Stigmatized	-n/a
Bewildered	-Experience that mothers cannot understand	-Loss of control of emotions that are difficult to accept.
Needing to find a voice	-Need to be understood	- (…) and believing that nobody else can understand what she is experiencing.
	-Feeling dismissed	-n/a
-n/a	-n/a	- (…) and the need to be mothered herself.

Beck (1993) identified four main stages in the progress of PPD. Although the present research study did not inquire about the stages in which women experience PPD, nine stages emerged from the data provided by the participants. On Table 12, I present both findings to facilitate the comparison between how women experienced PPD in 1993 versus how they experience it today. I will discuss this comparison in Chapter five.

Table 12

Stages

Present study	Beck's theory (1993)	
-Bewilderment	-Encountering terror:	Horrifying anxiety attacks Relentless obsessive thinking Enveloping fogginess
	-Dying of self:	Alarming unrealness Isolating oneself Contemplating & attempting self-destruction
-Recognition	-n/a	
-Assertion	-Struggling to survive:	Battling the system Praying for relief
-Outreach		Seeking solace at support groups
-n/a	-Regaining control:	Unpredictable transitioning Mourning lost time Guarded recovery
-Diagnosis/Acknowledgement	-n/a	
-Accepting help	-n/a	
-Feeling better	-n/a	
-Regaining power	-n/a	
-Transcending	-n/a	

Results Emerging from the Interviews with the PPD Support Groups' Facilitators

There were two facilitators at each of the postpartum support groups. One was the main facilitator who reported having conducted the support groups since their inception in 1997. The co-facilitator was a counseling intern with no previous experience in the support groups and who started working with the groups at the same time that the study took place. I used the data obtained at their interviews to provide answers to Research Questions six to nine.

Research Question 6 (RQ6). How was the experience of the group facilitators administering the MBSR psychoeducational program? Both facilitators qualified their experience utilizing the MBSR program as "a great experience". The MBSR program

was straightforward, simple, and easy to administrate, according to both facilitators. The facilitators reported that they dimmed the lights in the room, and took the toddlers out of the room during the exercises when the mothers requested it. One facilitator reported using the program midway through the meetings to be able to process the experience with the mothers thereafter. The second facilitator discrepantly reported that they administered the program usually at the end of the meetings to accommodate mothers trickling late into the group meeting. This facilitator also reported that for this reason, there were no opportunities to process the exercise experience on the same meeting.

Research Question 7 (RQ7). What were the factors that prompted the facilitators to use or not use the program at the support groups? The facilitators considered the number of participants at each meeting before deciding to use or not the MBSR program. It is usual in the group meetings that all women have an opportunity to talk about their past week and any new issues they would like to bring up. This would have had priority over utilizing the MBSR program. However, during the duration of the study, the facilitators administered the program at each meeting because the women "loved it so much" and "[the women] didn't want to miss it". Other factors involved in the decision to administer the MBSR program were that facilitators considered it important to teach the women in their groups to center themselves, how to be mindful, and to relax. One of the facilitators stated that the program provided an opportunity for mothers to take time for themselves and "visualize themselves in a better situation emotionally, physically, mentally and spiritually". The same facilitator cautioned that although the topics addressed in the MBSR program seem appropriate to be handled by the women in the

support groups, some topics could be difficult for women with high levels of distress if they would practice the exercises for the first time at home by themselves. This facilitator recommended adding a warning to the recordings to advise women to first practice each exercise in the group setting. One factor that this facilitator found helpful was that all exercises in the program close with a "positive, uplifting ending."

Research Question 8 (RQ8). What are the facilitators' impressions about the outcomes of using the MBSR program? And what are the differences with not using it, if any? According to the group facilitators, women attending the support groups reported finding the MBSR program helpful. Women were able to decide at the group whether they wanted to participate in the exercise or not when "they were in the frame of mind to do it" with some women just listening to the recording. However, women who participated were able to calm down, center, and gain from the experience as they reported after the exercises and after practicing the techniques at home. Women reported thinking about the exercises during the week in between group meetings, and then talked about what each exercise meant to them. Women also talked about their visualizations and the different topics and techniques taught during the exercises. According to the group facilitators, although women in the group were able to practice at home on their own by remembering the exercises, they were looking forward to receiving a copy of the recordings to continue practicing. One of the group facilitators expressed that the program would be more effective in an environment without children, and used at home in privacy. However, the same facilitator expressed that the program is a "wonderful, effective tool to be used in the group setting."

One facilitator considered the MBSR program to be a "nice addition" to the usual, less structured teaching and sharing that occurs in the support groups, and for this reason she decided to continue using the program after the conclusion of the present study. The other facilitator added that teaching the MBSR techniques at the support groups "may become a key factor in helping women manage stress, anxiety and depression."

Research Question 9 (RQ9). What were the main issues concerning the women attending the support groups as observed by the facilitators? The main issue observed by the facilitators is high anxiety. In addition, facilitators reported having group participants who were dealing with postpartum obsessive compulsive disorder with intrusive thoughts, some depression, posttraumatic stress disorder after a traumatic childbirth, unresolved grief and loss related to the death of the participant's mother, relational, physical and emotional stress due to having too many demands, relationship issues, anger and past trauma.

According to the facilitators, women in the support groups feel isolated. Isolation was related to a particularly difficult, long winter that left mothers "stuck in the house", and "only seeing gray snow". Isolation is also related to mothers "not feeling that anybody else is feeling what they are feeling." Other typical issues that emerged in the group discussions included mothers not wanting to have sex because "they are worn out and too touched [by holding the baby]"; how to help the baby sleep longer so they can get more sleep; relationship with mothers in law; and the idea that their husband "just doesn't get it".

Summary

I conducted the present phenomenological study at two PPD support groups in a metropolitan area of the Midwestern United States with a sample of 12 participants, 10 mothers attending the support groups and the 2 support group facilitators. Mothers in the sample were White, not Hispanic, college educated women with a mean age of 31 years old, and a mean of 9.7 months postpartum. The study took place over 8 weeks during which participants received an MBSR psychoeducational program. Women attended a mean number of 5 meetings. I interviewed mothers and facilitators after Week 8 analyzed the data obtained using a constant comparison procedure.

The study findings revealed that PPD women believe they feel different than women who never had the experience of PPD whom they perceive as having an easier adjustment after childbirth. Women in this study defined their PPD experience as a bad, hard, challenging one they cannot understand, and that is mainly characterized by intense anxiety. Women reported feeling guilty and overwhelmed. They also reported an inability to function in general and feeling inadequate as mothers. The mothers' PPD experience consists of 5 main themes: overwhelming pressure, disillusion about her motherly experience, trapped and unseen, bewilderment, and needing to find a voice. The PPD experience evolved in nine stages for the women in the study: bewilderment, recognition, assertion, outreach, diagnosis/ acknowledgement, accepting help, feeling better, regaining power and transcending. I compared the themes and stages identified in the present study with Beck's (1992; 1993) findings and discuss this comparison in Chapter five.

Women in the study found the MBSR program offered at the support groups to be helpful in dealing with symptoms of anxiety and depression, empowering, calming and relaxing. Women found all the topics addressed by the MBSR program to be relevant. With regards to their support group participation in general, women reported that their consistent group attendance helped them reduce their debilitating symptoms of anxiety and depression. The support group helped women to take care of themselves, to understand their situation, and reduce isolation. For these reasons, women found the PPD support groups empowering as well.

Group facilitators found the MBSR program to be an easy to administer tool to teach attending women to relax and effectively manage their levels of stress and anxiety. Facilitators were able to integrate successfully the MBSR program with their usual group practices. Group facilitators identified high anxiety levels and isolation as the main issues affecting women with PPD.

In the following chapter, I interpret the study results by comparing them with Beck's (1992; 1993) theory of PPD and with the literature reported in Chapter 2. Findings of the present study that diverge from what was presented in Chapter 2 were subjected to a new literature search whose results will be discussed in Chapter 5. In the following chapter, I also address limitations of the present study, recommendations for future research and practice, and the study's implications for social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

PPD affects 15% of pregnant or postpartum women who are in need of postpartum support services. Given the psychoneuroimmunologic characteristics of women in the postpartum period, the relationship between stress and depression that I described in Chapter 2 of this dissertation, and the preference by PPD women for seeking out help in psychoeducational support groups, it appeared that addressing the management of stress utilizing an MBSR program could be an effective way of reducing the impact of PPD. I conducted the present study with the main purposes of obtaining a first-hand description of: (a) postpartum depression as currently experienced by mothers attending postpartum support groups in a metropolitan area of the Midwestern U. S., (b) these women's experience of their support group participation, (c) the women's experience of the MBSR program offered at the above mentioned postpartum support groups, (d) the experience of the support group facilitators in utilizing the MBSR program, and (e) the population attending the postpartum support groups.

Key findings of the present study include the confirmation that mothers experiencing PPD perceive themselves as different from mothers with no PPD, with most mothers not being able to identify a specific issue other than believing that women with no PPD have an easier adjustment after childbirth. With regard to their PPD experience, all women in the study reported their experience to be bad, hard or challenging with pervasive and severe anxiety leading to panic attacks. Only 60% of the women mentioned depression as one of their symptoms. Half of the women in the study described their PPD

experience as bad with one mother expressing PPD was “the hardest thing I’ve ever gone through”. Women expressed their need to understand themselves and being understood by their partners, families, and physicians.

Five main themes emerged from the data to describe the women’s PPD experience: overwhelming pressure, disillusion about her motherly experience, feeling trapped and unseen, bewilderment, and needing to find a voice. From the women’s narratives, nine stages in the progress of PPD emerged: bewilderment, recognition, assertion, outreach, diagnosis/acknowledgement, accepting help, feeling better, regaining power and transcending. I described these themes and stages thoroughly in Chapter four. Women in the study identified pre-existing mental health issues that worsened during the perinatal period as a main contributing factor to their developing PPD.

All participants found the MBSR program to be helpful, relevant to their situation, and transferable to situations outside the support group. Women found the MBSR program effective in coping with anxiety and panic attacks. All participants found their support group experience to be helpful which they attributed to the group community including the other women and the facilitators. The main message that participating women would convey to other women experiencing PPD is to ask for help and accept it when available.

One of the support group’s facilitators reported that utilizing the MBSR program was “a great experience” because it was simple and easy to administer. Group facilitators reported that women were able to calm down and relax during the exercises and that the women in the group reported utilizing the MBSR techniques at home. The main

facilitator decided to continue using the MBSR program at the support groups after the study concluded due to finding it to be an effective tool well adapted to use in the group setting.

Interpretation of the Findings

In the Context of the Reviewed Literature

Goldman and Santangelo (2011) identified the effectiveness of PPD support groups as a gap in the literature. Older quantitative studies did not find PPD support group participation to be a predictor of postpartum adjustment (Wandersman, Wandersman, & Khan, 1980), with no reported positive effects of group participation. A negative effect was reported in maternal self-confidence (Fleming, Klein, & Corter, 1992), meaning that depressed women who participated in the support group showed a decrease or a lesser improvement in maternal attitudes than did depressed women who only received support via mail. Measuring effectiveness of the group participation was beyond the scope of the present study. However, women in this study reported that attending the support groups helped them improve their symptoms. Specifically, women reported reduced crying, intrusive thoughts, and negative self-talk, with better functioning in daily life activities, more motivation, and improved bonding. This finding is consistent with Sutter et al. (2012) who also found that attending PPD support groups was subjectively associated with higher levels of satisfaction and wellbeing.

Women in this study reported being able to use the MBSR program taught at the support groups to successfully cope with anxiety, panic attacks, and intrusive thoughts. As Gruzelier (2002) concluded, muscle relaxation and guided imagery – two components

of the MBSR program practiced in the study's support groups - increased coping ability and reduced anxiety. Stressful situations related to childcare, moving, or going back to work were issues mentioned by the women in the study as being positively impacted by the decision-making and problem solving components of the MBSR exercises practiced at the groups. This finding is consistent with Thorp et al.'s (2004) suggestion that including these two components, decision-making and problem solving, within a program could reduce maternal stress. Some women in the study reported that the MBSR program also helped improve their depression, which seems to be consistent with Leigh and Milgrom's (2008) suggestion of reducing stress to help improve PPD symptoms.

The study's findings are also consistent with existing literature about the beneficial effect of MBSR on anxiety (Chiesa & Serretti, 2009) and depression (Kabat-Zinn et al., 2009) in general. As Graham et al. (2002) concluded, the results of the present study also support that MBSR increases awareness and acceptance of postpartum stressors and facilitates effective coping with a subsequent mood improvement (Finucane & Mercer, 2006). MBSR also contributes to a greater sense of autonomy (Kostanski & Hassed, 2008) as could be interpreted by the mothers in this study who described the MBSR program as an empowering tool for life in general.

The women in the study reported feeling motivated by the MBSR exercises. According to the group facilitators, the MBSR program provided an opportunity for the women to visualize themselves in a better situation emotionally, physically, mentally and spiritually. The group facilitators found helpful that the exercises closed with a positive, uplifting ending. This finding is consistent with Grote and Bledsoe's (2007) suggestion to

include coping mechanisms that address optimism in the presence of stressors in programs addressing PPD.

Previous studies had identified anxiety as an additional, common symptom present in PPD (Austin, 2010; Beck, 1993; Bennet & Indman, 2006; Rowe, Fisher, & Loh, 2008). However, every woman in the present study reported experiencing severe, relentless anxiety as their most debilitating symptom which led to a feeling of being out of control as was also found by Beck (1993) and by Milgrom and Beatrice (2003). Other findings of the present study related to the mothers' PPD experience that are consistent with previous research include a general feeling of being overwhelmed (Edhborg et al., 2005), and specifically, feeling overwhelmed by the demands of infant's and older children's care (Edhborg et al., 2005; Honey & Morgan, 2003; Kanotra et al., 2007; Matthey, 2009; McIntosh, 1993). To summarize, mothers experienced a decreased sense of competence in their maternal role, as frequently reported in the literature (Barr, 2008; Beck, 1993; Da Costa et al., 2004; Edhborg et al., 2005; Knudson-Martin & Silverstein, 2009; Paulson et al., 2006) with guilt (Beck, 1993) about that perceived lack of competence (Beck, 2001; Edhborg et al., 2005; Misri et al., 2006; Leung et al., 2005; Matthey, 2009; Paulson et al., 2006).

Unmet expectations about the mothers' postpartum experience fueled feelings of guilt (Bilszta et al., 2007; Knudson-Martin & Silverstein, 2009). Mothers in the study also reported inability to function due to lack of concentration and decreased decision-making skills (Barr, 2008; Beck, 1993; Bernstein et al., 2008; Knudson-Martin & Silverstein, 2009; Thorp et al., 2004). Findings of the present study that had already been

reported in the literature include impaired bonding with the baby (Austin, 2010; Leigh & Milgrom, 2008); irritability (Bennett & Indman, 2006); sleep disruption (Matsumoto et al., 2003); and isolation (Knudson-Martin & Silverstein, 2009; McIntosh, 1993) with avoidance as a coping mechanism (Honey & Morgan, 2003; Stadlmayr et al., 2007). Consistent with Tammentie et al. (2004), the mothers in the present study experienced isolation which they associated with their need to mask their struggle and with their inability to reach out for help as found earlier by Knudson-Martin and Silverstein (2009).

Mothers in this study identified some factors that contributed to their illness and that had already been identified in the literature: a personal history of depression (Beck, 2001); physical illness of the mother (Da Costa et al., 2004; Milgrom and Beatrice, 2003) and illness of the baby (Yurdakul et al., 2009); financial concerns (Matthey, 2009; McIntosh, 1993) often related to lack or cost of health insurance coverage (Kanotra et al., 2007); connection to others (Knudson-Martin & Silverstein, 2009) with the expressed need for comfort (Beck, 1993), approval, and a demand for fairness (Milgrom & Beatrice, 2003) specifically in relation to their partners (Dennis & Letourneau, 2007).

In the Context of the Theoretical Framework

The theoretical tenets of the study were the allostasis theory of stress (McEwen & Wingfield, 2003), the transtheoretical model (Prochaska et al., 1992), and Beck's theory of PPD (1993). I based the present study on the premise that addressing stressors characteristic of the postpartum period with an MBSR program could help improve PPD symptoms and severity due to the relationship that exists between stress and depression (Riecher-Rossler & Hofecker Fallapour, 2003). The TTM served to assess the participant

women's stage of behavioral change at the beginning and the end of the study. In this segment, I will attempt to analyze and interpret the study's results in the context of the study's theoretical framework.

The allostasis theory of stress. According to McEwen and Wingfield (2003), allostasis is the process of regaining balance and new adaptation after experiencing stress. Allostasis is a short-term process during which physiological changes occur to allow the organism to function while facing a stressor. The energy and resources required by the organism to maintain allostasis is called allostatic load. However, when the organism requires energy and resources that are not available in its environment, it enters a state of allostatic overload that can be short-lived when the stressful event is limited in time. When stress persists over time, a chronic state of allostatic overload follows making the organism more susceptible to illness and depression.

The women in this study reported exposure to stressors that originated in the women's postpartum experience and lasted for months, from childcare stressors to relationship and financial ones. The mothers reported feeling stressed by practical aspects of the postpartum period such as needing help around the house and with the children but also about their perception of their maternal role, their unmet expectations, the high level of involvement required by tending to the infant, and the lack of social support. The fact that mothers reported being able to cope better with those stressors as a result of practicing the MBSR program taught in the groups supports Shannon et al.'s (2007) conclusion that the concept of allostasis can be used in psychoeducational postpartum interventions with the goal of reducing stress and fostering effective coping skills.

The transtheoretical model of behavioral change (TTM). The TTM developed by Prochaska et al. (1992) identified five stages of behavioral change readiness described in Chapter 2: precontemplation, contemplation, preparation, action, and maintenance. In the present study, women self-assessed their stage of behavioral change at Weeks 1 and 8. Out of 10 participants, nine reported a positive change, and one remained in the action stage. None of the participants assessed herself as being in the precontemplation stage which is appropriate given that all women were already attending the support group because they believed they had a problem for which they needed help.

Five women who reported being at the contemplation stage at Week 1 assessed themselves as being in the action stage at Week 8. At Week 1, these women believed that they needed to do something about their postpartum adjustment, they could not commit to a specific action, and they were not sure about the results they could obtain. At Week 8, these same women believed that they were working hard and consistently on helping themselves by attending the support group and they felt hopeful about the results of their action.

Three women who identified themselves as being in the preparation stage at Week 1 by having tried or considered some course of action to improve their situation without great results also assessed themselves as being in the action stage at Week 8 by expressing that they were working hard and consistently to improve and had hope about their results. Two women in the study reported being in the action stage at Week 1. One of them remained in the action stage at Week 8. The other woman identified herself as being in maintenance due to feeling much better, almost not depressed at all, and ready to

discontinue attending the support group although also keeping in mind that group attendance could help prevent any relapse.

These results seem to corroborate Flynn et al.'s (2006) suggestion that psychoeducational interventions such as the support group and the MBSR program with a systematic follow-up as the one received at the PPD support group are effective when offered at the contemplation stage. The study results seem also in accordance with McQueen et al.'s (2008) conclusion that weekly, psychoeducational PPD support groups are effective during the preparation stage. In the present study, both women in the contemplation and preparation stages had progressed to the action stage after 8 weeks of group participation and MBSR practice. Evers et al. (2006) suggested practicing stress management techniques during the action stage. However, the present study showed that practicing stress reduction techniques was successful at the earlier contemplation stage when accompanied by mindfulness practice that is progressively structured in an 8-week program.

Beck's theory of PPD. I presented Tables 11 and 12 in Chapter 4 to compare the results of the present study with Beck's theory (1992; 1993) relative to identified themes and stages of the PPD experience. I will, first, compare the themes and, then, the stages. Identifying the stages of the PPD experience was not a purpose of the present study. However, stages naturally emerged from the data provided by the women.

Comparison of themes. Beck (1993) based her theory of PPD on the themes identified in her previous phenomenological study (1992). Beck's (1993) theory appears to be as relevant today as it was over 20 years ago. I included the themes identified by

Beck (1992) as content of the MBSR exercises used at the PPD support groups during the present study. Therefore, it is important to compare Beck's themes with the ones brought up by the women in this study to assess the adequacy of the MBSR exercises in addressing current issues affecting women with PPD. Women in the present study reported feelings and experiences that for the most part were also reported by Beck (1992; 1993). These common themes include anxiety, depression, guilt, inability to function, relentless intrusive thoughts, suicidal ideation, feelings of inadequacy and being out of balance, feelings of loss, isolation, and need to be understood.

Beck (1992) identified the loss of control of emotions that are difficult to accept. In the present study, women talked rather about an experience that they cannot understand and of the unexpected quality of their PPD experience, both contributing to their feeling bewildered. However, Beck's group of women seems to have had a more passive attitude about not being able to accept their feelings. In the present study, a general attitude of rebellion towards their whole experience manifests throughout the participants' responses:

- I've had PPD with each child, wasn't really diagnosed till after number three. With the first one, when I told my doctor at the six week postpartum visit, she said, oh honey, let's get you some medicine and that was really the extent of it, there wasn't any other support… any follow-up. (Lilou)

- …it's important that it [PPD] is more acknowledged. Postpartum depression isn't acknowledged enough… I had anxiety from day one when I was

pregnant and it wasn't recognized… I'll bring it up to my healthcare provider and they just [said] that's normal. But the feelings I was having were not normal. (Sara)

- … a lot of people don't realize how many people do have it [PPD]. (Gloria)
- I felt like a monster. The way people talk about it [having a baby] and excited, celebrate…. (Lisa)
- [PPD] is more common than most people realize…It's absolutely OK, and nothing to feel ashamed of, or guilty of. It's definitely not a reflection on your capabilities as a mother and your ability to be a mother. (Charlotte)
- If you talk to new parents, they talk about everything is so great, but I think in reality it's not necessarily that way for everybody, everything is not great all the time. (Stacey)

Women in the present study were seeking for more than acceptance; rather, they were looking for explanations and calling for transparency. One theme reported by Beck (1992) as the need by women with PPD to be mothered themselves was not present in the current study.

Themes that emerged from the present study but were not included by Beck as such were: feeling overwhelmed, severe sleep disruption, severe inability to eat, mood swings, unexpected experience, anger, unmet expectations, avoidance coping, stigma, and feeling dismissed. To determine whether the above mentioned data is original of the

present study, I conducted a new literature search including the terms *postpartum depression, postnatal depression,* and *perinatal depression* in combination with each of the following terms: feeling overwhelmed, severe sleep disruption, severe inability to eat, mood swings, unexpected experience, anger, unmet expectations, avoidance coping, stigma, and feeling dismissed. Multiple data bases were researched utilizing Walden University's Library services including Medline, Academic Search Complete, CINAHL Plus, ProQuest Health and Medical Complete, ProQuest Nursing & Allied Health Source, Ovid Nursing Journals, PubMed, SAGE Premier, ScienceDirect, PsycARTICLES, PsycINFO, and PsycBOOKS.

Feeling overwhelmed. In a meta-synthesis by Beck (2002) with18 qualitative studies, *feeling overwhelmed* emerged as a characteristic of the PPD experience. A new literature search resulted in the already cited work of Abrams and Curran (2009) who studied the PPD experience for low-income mothers. In their grounded theory, these researchers concluded that for this specific population, the core experience of PPD is that mothering is overwhelming due to the emotional demands of motherhood combined with the hardship of living in poverty. Robertson, Curtis, Lasher, Jacques and Tom (2013) identified symptoms of feeling overwhelmed as part of the anxiety and insecurity reported by the women in their qualitative study conducted in the U.S. However, these authors did not identify feeling overwhelmed as a distinct category as is the case in the present study:

- … just a feeling of being more than overwhelmed, more than what is considered normal or typical for a new mom that's never experienced being a new mom before. (Laura)
- I felt pretty good during pregnancy and then after… I just felt so overwhelmed. (Stacey)

In a new, qualitative study from Australia, Highet, Stevenson, Purtell, and Coo (2014) reported feeling overwhelmed as one of the themes identified by postpartum women and a key experience of women with PPD. As in the present study, Highet et al.(2014) found that the quality of overwhelming was initially associated by the mothers with the demands of infant care but due to infant care taking over most of the women's time and life aspects, life in general was perceived as overwhelming by the mothers in both studies.

Severe sleep disruption. Consistent with findings of the present study, Highet et al. (2014) also found *severe sleep disruption* to be a key experience of women with PPD. Prior literature reported the effects of poor sleep quality in the early postpartum period (Okun, Luther, Prather, Perel, Wisniewski, & Wisner, 2013) on the development of postpartum depressive symptoms. However, the severe inability to sleep identified by the mothers in the present study and in Highet et al.'s (2014) study was unrelated to the mothers' opportunity to sleep, and was not easily improved by the use of sleeping aids:

- I just wanted to sleep, like when you are so tired all you want to do is go to sleep at night, but then I would go to sleep…and … my anxiety was so bad, I would be

> like on fifty million Mountain Dews… So I was just basically sitting in bed all night, stir and stir, so that by the time the kids woke up… I was just exhausted, and that probably went for thirty days without sleeping at all… They gave me every kind of sleeping pill possible but Ambien outweighed me… (Gloria)

This characteristic demonstrates the well-established relationship between sleep disturbances and depression that justifies their inclusion as a main diagnostic criterion for major depressive disorder (American Psychiatric Association, 2013). However, examination of the relationship between the effectiveness of sleep disruption treatment and postpartum depression is out of the scope of the present study, and deserves consideration for future research. A literature search for PPD and sleep aid effectiveness yielded no results.

Severe inability to eat. Changes in appetite in either direction were reported by Conradt, Manian and Bornstein (2012) as significant symptoms of PPD identified by the BDI-II. Robertson et al. (2014) also included changes in appetite as potential indicators of PPD symptomatology. Clavey (2013) reported severe inability to eat in two clinical case studies of women with PPD who were treated with Chinese herbal medicine and acupuncture. In the present study, *severe inability to eat* was reported by the participants:

- I wasn't eating, I wasn't sleeping. (Lisa)
- I'm not feeling right. I can't sleep, I don't eat…I would go for days without eating. (Gloria)
- I lost probably twenty pounds that I didn't need to lose. (Rosa)

Mood swings. In his study, Clavey (2013) also mentioned *mood swings* as another characteristic of women experiencing PPD. Although emotional lability was not identified as part of the PPD experience provided by Beck (1992, 1993), it was included as a criterion of PPD symptomatology in the Postpartum Depression Screening Scale (Beck, 2000). For this reason, mood swings cannot be considered an original finding of the present study.

Anger. Graham, Lobel, and DeLuca (2002) understood that the conditions around childbirth justify researching whether *anger* is present in women with PPD as a reaction to the challenges of the postpartum period. In their quantitative study, these researchers found a strong but independent association between anger and depressed mood at 6 weeks postpartum. This means that women who reported experiencing anger were considered separate and distinct from women who were experiencing depression. The only common factors between women with PPD and women experiencing anger were childcare stress--with a strong association--, and physical pain--with only a marginal association (Graham, Lobel, & DeLuca, 2002). Rather than reporting anger related to specific postpartum challenges, women in the present study expressed feeling angry in general; at their situation, at the fact that PPD was happening to them, and the thought that their suffering could have been avoided given that enough knowledge about PPD is available and could have been used for prevention, awareness, recognition, or earlier intervention:

- …just anger somewhat. I don't really know what the anger was focused to… (Lynn)

- I was cooking dinner, and he [the child] was hanging on my leg, and the kitchen was a mess…, and I was so frustrated that …I just wanted to scream and I did…I'm not normally an angry person, so that concerns me… It comes out in anger sometimes… and frustration. (Stacey)

Unexpected experience. Experiencing anger surprised the women in this study which contributed to the unexpected quality of their PPD experience. A literature search for postpartum depression and *unexpected experience* yielded no results. For this reason, the characteristic of 'unexpected' seems to be an original finding of the present study and contributes to the description of the PPD experience by the affected women:

- I would describe it [having PPD], just surprising, that I never thought it would happen. I guess especially since I went through the first [child] and never had any problems. (Rosa)
- It was just unexpected, lonely, scary, isolating for sure…. (Sara)
- … shocking, like a bus almost went over me. (Lisa)

Unmet expectations. Mothers in the present study identified *unmet expectations* about their postpartum experience as an important contributor to their distress. In a similar study conducted in the U.K., Patel, Wittkowski, Fox, and Wieck (2013) found unmet expectations to be the first theme that emerged from their data. Patel et al. (2013) proposed that the incongruence between mothers' expectations about the postpartum period and these women's actual experience created their awareness of not being well, and their perception of not being a good mother. According to O'Mahen et al. (2012), the

discrepancy between mothers' unmet high expectations about motherhood and their actual experience fostered negative thoughts, worry and rumination based upon the mothers' beliefs in how the postpartum period and motherhood should look.

Avoidance coping. In the only study found about the relationship between PPD and coping styles, Doucet and Letourneau (2009) reported an association between self-distraction as an avoidance mechanism and the occurrence of suicidal ideation in postpartum depressed women. According to these researchers, using self-distraction allowed PPD women to feel disconnected from the problem, thus obstructing their use of adaptive and active coping strategies. Inversely, the use of adaptive emotion-focused coping in the form of emotional support and reassurance seemed to protect women in the study from suicidal ideation (Doucet & Letourneau, 2009). This last finding is consistent with the positive effect of PPD-support group participation reported by the women in the present study. Women attributed their improvement after support group participation to the sense of community generated within the group by mutual, accepting and nonjudgmental support. Highet et al. (2014) reported thoughts of "leaving and escaping" (p.182) that contributed to women's feelings of isolation. Similarly, women in the present study tended to respond to their situation by using *avoidance coping* mechanisms expressed as thoughts of running away or going to sleep until the problems go away:

- I just felt very alone and like I wanted to run away… to leave my house, leave my family, leave my car, the money, and run, just literally run…with my shoes and my clothes. And I never wanted to come back…. (Sara)

- I just want to go to bed and sleep until it's over, until I'm normal. (Gloria)

S*tigma.* Patel et al. (2013) reported that mothers in their study perceived stigma of PPD as being pervasive. This perception contributed to the women's not acknowledging their PPD and masking their feelings, which contributed to their sense of isolation, their avoidance, and ultimately their delay in seeking out help for fear of being perceived as a bad mother (Robertson et al., 2013). Patel et al. (2013) reported that participants had difficulty accepting their illness. Women in the present study, however, seem to recognize the stigma of PPD as something against which they are willing to fight:

- When [my husband] heard I had postpartum depression [he] went like Oh, do you wanna kill yourself or the kids? And I hate when people think that. People think of postpartum depression is you're going to kill someone, and I'm like No! I don't want to; I just want the day to be over…Some people think of postpartum depression as people are crazy. (Gloria)

- I would tell [other women with PPD] not to take no for an answer… Don't be afraid to admit that you don't feel quite right. (Phoenix)

Feeling dismissed. A literature search for *feeling dismissed* and PPD was necessary to determine if the issue of feeling dismissed experienced by PPD mothers had been reported in prior studies. The literature search produced no results. The issue of feeling dismissed appears to be novel in the present study:

- My husband kept thinking, oh, you are just tired… you are breastfeeding, you just need to get [the baby] to sleep… And I'm like, no, something is wrong with me…. (Gloria)

- A lot of people think postpartum depression are…people that are…a controller, just making all up. (Gloria)

- People look at me like I'm losing it…like I'm being lazy. (Lynn)

- I don't mind talking about it [PPD] with my husband but I guess he just doesn't understand…. (Rosa)

In summary, after I researched the literature for the issues that emerged from the present study that were not mentioned with Beck's theory (1992; 1993), only the following two constructs could not be found: *unexpected experience* and *feeling dismissed*. For that reason, these constructs appear to be original contributions of the present study.

Comparison of stages. A comparison between the stages in the development of PPD that emerged from the data obtained in the present study and the ones identified by Beck (1993) appear in Table 12. The nine stages identified in the present study are: bewilderment, recognition, assertion, outreach, diagnosis/ acknowledgement, accepting help, feeling better, regaining power, and transcending. In the following paragraphs, I describe these nine stages and compare them with Beck's theory (1993).

Bewilderment. The first stage I identified in the present study is *bewilderment*, an initial stage when the women were suddenly confronted with an unexpected experience

that they did not understand. Feelings of being overwhelmed, anxiety, depression, horrifying obsessive and suicidal thoughts that lead to feelings of guilt, inadequacy and isolation emerged during this phase:

- Why is it that I feel this way? Why do I feel sad? That was when it really started… I would just be holding [the baby] and…crying…I don't think like that's a normal thing…I felt like what's wrong with me? (Stacey)

- When [the baby] was 3-4 weeks old…things dramatically shifted into depression and a bout of behaviors that I never experienced before. I describe it almost like a monster. (Phoenix)

- I don't know why this happened to me…And I don't understand what's different between me and someone who did not have it [PPD] but there is something different. (Sara)

- I call it my crazy crash period. (Gloria)

In Beck's theory of PPD, the two first stages, *encountering terror* and *dying of self,* are comparable to the present study's bewilderment stage. During Beck's two first stages, women experienced fogginess, unrealness, and other similar feelings to the ones experienced by women in the present study during bewilderment.

Recognition. The next stage demonstrated in the present study was *recognition.* Women reported taking a month after the onset of symptoms to become aware that they needed help to overcome their bewildering experience. Only one woman reported being

identified at the hospital right after delivery. Another woman became aware that the symptoms might have started in pregnancy. The *recognition* stage is characterized by the women's acknowledgement that something is happening to them that is more than regular adjustment after childbirth. This stage has no correlate in Beck's theory (1993). This is how two of the study participants identified this stage:

- By the time that I realized, wow, these are really problems, this really is depression, it was a very low point. So I started to reach out. (Phoenix)

- I realized that I needed more than my mom to help me. (Rosa)

Assertion and Outreach. These are the next two stages. During *assertion*, women started to understand that they had specific needs and changes needed to happen. Women started expressing their needs to their partners at this point, and researching their symptoms and potential sources of help. It took one woman six months to identify and start attending a support group. Two of the women in the study expressed:

- When it hit [the] 4 week mark here and I was still crying a lot… I just decided that I should go ahead and call somebody about it. (Lynn)

- OK. What things do I need to do to take care of myself and get things better? And that is when I went to … the PPD group. (Phoenix)

At this point, women in the present study reported asking questions about medications, their side effects, and some women started taking supplements and vitamins. Then, these

women started to reach out to their families, their physicians, and their communities. *Outreach* is the next stage, and its main characteristic is that women start asking for help:

- So, I finally got to the point that I called… my in-laws, and said something is wrong with me, I need help… So they came… and I went to the doctor and was diagnosed with postpartum depression. (Gloria)

Assertion and *outreach* seem to have a correlate in the next stage of Beck's (1993) theory called *struggling to survive* during which women battled the system to obtain adequate help, prayed for relief, and started attending support groups.

Diagnosis/ acknowledgment. The result of reaching out is that women in this study received a diagnosis. At this time, the women's suffering was acknowledged and they learned that there was a recognizable, diagnosable reason for their experience. After receiving a diagnosis of PPD, women reported relief and started understanding what had been happening to them. This stage appears to be pivotal for the women in the present study. There is no correlate of this stage in Beck's theory (1993).

Accepting help. There are no correlates for this stage in Beck's theory (1993). Here, the women started complying with recommended treatments and accepting help from family, friends and community. Women in this study embraced this important step towards recovery proactively. They reported understanding that there are different channels for help, and that help may be needed on an ongoing way, as needs arise, and until results are attained:

- If I would have reached out for help months before, I wouldn't have gone to the crashing point, and [gone] through so much… So, you've got to learn to ask for help…You've got to reach out even if it's to have a friend take your kids or watch them… just to let you get out of the house… to be able to relax your mind… or even need someone help clean or cook or [to have] time for your husband. (Gloria)

- …definitely reach out and find some sort of support or help. You don't have to suffer alone and there is help out there. (Laura)

- …just find someone to talk to that has experienced it [PPD] before… finding some sort of support group or therapist… it's not just taking medication or supplements… [it is also] finding a way to retrain how you think… go to group. (Lilou)

- I went to the group… my psychiatrist recommended TMS (transcraneal magnetic stimulation)… changed medications…my individual therapist… I was trying to get out… went to an inpatient facility for 7 weeks…then rejoined the PPD group. (Phoenix)

Feeling better. The following stage that I identified in the present study is *feeling better*, which occurred when women started sleeping again, and they noticed that medications started to improve their mood, decrease their anxiety, and reduce the presence of intrusive thoughts. Women in this stage reported being able to function again

and accepted practical help with child care and family demands from family and other support systems. At this stage, women reported attending the support groups consistently. Women felt hopeful about their recovery and started relating better with their babies and enjoying their parenting role. At this point, women reported being less perfectionistic and started feeling happy.

Regaining power. Consequently after feeling better, the next stage of *regaining power* brought a positive attitude with a feeling of getting back to normal and of knowing herself better:

- I found a postpartum depression group which helped…I started eating, and … doing a lot of stuff…not having caffeine…then I would take Klonopin for when my anxiety gets out of control or I just try to exercise and enjoy life… I'm definitely doing much better…just trying to take care of myself. (Gloria)

- I have some more perspective now… I'm able to stop, this isn't me being crazy…This is actually… a mood disorder. (Lisa)

- After going to group, I feel like I have a lot more skills. I'm a lot better at recognizing that negative talk spiral starting in my head and what I can do about it, and taking steps instead of going into my old patterns. (Lilou)

These last two stages of *feeling better* and *regaining power* correlate with Beck's (1993) last stage called *regaining control,* in which women transitioned to feeling better, however, in an unpredictable way. During *regaining control*, women in Beck's study mourned the time they lost to PPD and cautiously entered the recovery process. There

was a difference in the reported attitudes between the mothers in this study and Beck's (1993) where Beck's participants reported less confidence about their recovery. Most women in the present study had a steadier path to treatment and recovery, which may have been affected by their increased assertiveness, shown in the way they proactively sought for answers from their physicians and their community. Women in the present study did not accept being dismissed by others. After the first reaction of bewilderment, women proactively sought and acquired knowledge about PPD and started implementing strategies to improve, such as attending the support group and asking for and accepting practical help:

- I had experienced depression before…but never … anything like that…just overwhelming. So, I contacted [the support group facilitator]… I know that I still have some, but it's definitely improved. (Stacey)

- He [the baby] was 8 or 9 months old [when] it [PPD] started… and 10 months [old] when I realized what was going on…I'm on Zoloft… and I started that the same day I started going to group [2 months ago]… I do feel like my head is …clearer and I'm not crying all the time like I was, so… I'm getting benefits from the group and the medication. (Laura)

Transcending. The last stage identified in the present study is *transcending*. Women in this study expressed having become aware of PPD being a treatable disorder whose severity can be affected by early detection and intervention. In this stage, women expressed their willingness to help other women with PPD. Women in the study reported

believing they reached a new wisdom, a new understanding of their PPD experience, and want to be an inspiration for others:

- I… don't mind sharing my story with others because I've been able to help a lot of people…I wanna tell people because I wanna help reach out…Until you experience it [PPD] you don't understand. (Gloria)

- [I would tell other women experiencing PPD to] just find someone to talk to that's experienced it [PPD] before…finding some…group or therapist, …not just medication…or supplements and finding a way to retrain how you think. (Lilou)

- It's important that other women…get help as soon as [they] don't feel right. (Sara)

- I think it's a good thing you are doing this [the research] to bring attention to [PPD] so people can get help. (Gloria)

- What I do tell actually is… don't go it alone…remember you are a good mom, and that this will pass, and…you'll get through it [PPD]… Those are my three things that I tell them [other women with PPD]...It's good to know that there are other people that get it [PPD]… I hope that I'm an inspiration to some of them because they can see… I kind of got out of the worst and feel like I'm getting better now. (Rose)

The women who participated in this study seem to be ready to promote positive change towards awareness of the disorder and to foster the message that women with

PPD need to be proactive in reaching out, asking for help and then accepting it. Through the interviews, these women found a voice to convey their experience as something that could have been prevented or mitigated considering the knowledge in the field. An attitude of outrage transpires from their narrative in what could be called *the PPD women's rising.* Women in this study reported feeling the stigma associated with PPD, yet they understand that silence and isolation can be broken safely when appropriate support systems, such as the support group community, are in place.

Limitations of the Study

A limitation of the present study is that these results reflect the personal responses of a group of adult, white, college educated women, all in an established relationship with a spouse or a life partner, living in a metropolitan area of the Midwestern United States, and all attending a PPD support group. The demographic composition of this sample is not comparable with national or state demographic statistics and for this reason is not generalizable. A second limitation of this study is that I selected its sample purposefully s among women attending postpartum support groups. For this reason, any application of the MBSR program to an individual setting or as a self-administered tool should be further validated in future research.

One of the two group facilitators is a member of Postpartum Support International and a presenter at conferences attended by me. I introduced the two group facilitators to the MBSR psychoeducational program prior to conducting the study. The group facilitators had discretion about using or not the MBSR program according to the needs of the women attending the groups at each meeting. This was a potential limitation of the

study. However, the group facilitators reported that they used the MBSR program at every group meeting to satisfy the interest of the attending women.

The present study took place at PPD support groups where women attended with their children. Women in the study unanimously reported that having children around during the MBSR exercises was distracting. To remedy this situation, the group facilitators provided for a separate space where children could play safely while their mothers were practicing the MBSR exercises. Nevertheless, women who had infants at the group reported having the babies on their laps during the exercises, or intermittently interrupting the exercises to tend to their babies.

Recommendations

Some recommendations for practice emerged from the participants' interviews. These recommendations were related to the importance of practicing the MBSR exercises with no children present. For that, they suggested having child care available at the support groups and making the MBSR exercises recordings available to practice in solitude at home in between group meetings. The women in the study reported benefitting from the MBSR program and suggested having this or other relaxation exercises regularly practiced at the group meetings. Other recommendation that emerged from the data is to have a specific discussion topic and handouts at each support group meeting.

Recommendations for future research include conducting a follow-up study to determine whether the MBSR program offered at the support groups continued being effective in reducing stress in the women attending the support groups. It would also be of interest to conduct a study measuring stress before and after the 8-week MBSR

program to determine the effectiveness of the program. It would be also of interest to determine whether the MBSR program could be used effectively in different settings such as with individuals and self-administered.

Some constructs that were identified by the women in the study as part of their PPD experience such as *unexpected experience* and *feeling dismissed* could be tested with more diverse samples to inform treatment options and programs-including the one used in this study-to ensure that interventions target current and relevant issues. Whether the emerging themes and stages of the PPD experience identified in this study could be the subject of a new theory could also be investigated in the future. Studies about new attitudes of women with PPD and the impact that these new attitudes could have on the support offered to affected women could also be undertaken with the goal of improving prevention, early detection, and treatment options.

Implications

The present study confirmed that incorporating an MBSR program in PPD support groups is an effective tool to help women reduce their levels of stress per the participants' self-assessment. The MBSR program was accepted by the women and the group facilitators, who reported that the program was easily incorporated into the group meetings. The women in the study reported that they were able to apply the techniques learned through MBSR program to situations in their lives, other than their PPD symptoms. For example, one mother said the MBSR techniques helped her problem-solve and navigate a house move without being overcome by anxiety. Another mother reported using the techniques successfully during the otherwise stressful process of

returning to work after having the baby. According to these examples, the MBSR program seems to have an empowering effect by allowing these women to transfer the techniques learned at the support group to face new situations in their lives effectively.

At the individual level of positive social change, the present study provided mothers in the support groups with an effective, adaptive coping tool that they were able to use to decrease their stress and anxiety. All the mothers in the support groups were able to learn and practice the MBSR program, and the study participants reported the program was helpful, which resulted in their feeling calmer, more relaxed, and less anxious. At the community level, an indication of positive social change appears to be the effect of the mothers in the study bonding better with their babies and enjoying more their motherly role. This improvement in the mother-baby relationship may result in a shorter exposure of the children to their mothers' PPD symptoms. A beneficial aspect regarding the community may emerge from the fact that mothers in the study expressed interest in sharing the MBSR program with their spouses and with friends who were also struggling with PPD symptoms.

At a societal level of positive social change, this study may contribute to the treatment of PPD at the most preferred and accessible setting, namely, the support groups. The MBSR program could also be used as an easy to distribute tool by physicians' offices. The MBSR program could be adapted as a model to develop similar low cost and easy to implement tools to be used prenatally by hospitals and childbirth educators as a primary prevention strategy. The study also provided a new perspective of the PPD experience showing an emerging, more proactive attitude of the women with

PPD who participated in this study towards the prevention of the disorder. Women in the study expressed that knowing what they know after going through PPD, they expect their professional caregivers to put more effort in the prevention and earlier identification of PPD symptoms to avoid unnecessary suffering. Women in this study unanimously underscored the importance of educating the public to decrease PPD stigma, which in turn would allow women and their families to recognize the symptoms of PPD and take advantage of various channels of help to shorten the course or even prevent the disorder.

Given the acceptance and satisfactory experience that the PPD support groups provided the women in this study, it is recommended that PPD support groups continue to be offered. The mothers in this study agreed that the main factor contributing to the groups' success was the sense of community within the support groups, including the attending women and the facilitators. In this group community, women learn from each other, and information is shared without judgment. Women in this study attributed great importance to the consistency in the group facilitator's interventions and in the attending women's presence, both contributing to the women being able to witness each other's progress and their own.

Conclusion

This study is comparable to previous studies attempting a description of the PPD experience in its methodology and sample size. The main distinguishing factor is that the present study focused on reducing stress in PPD women by teaching them MBSR techniques that they could easily practice at home. According to the information provided by the participants, this approach seemed to be effective. Women were able to use the

MBSR techniques on their own to relax, calm down, and problem-solve as needed. The result was that women in this study felt more empowered by being able to manage their anxiety on their own and efficiently during their everyday life.

In the present study, I provided a current description of the PPD experience that expands on the one provided by Beck (1993) to include new thematic components and newly identified stages of the disorder's progress. The themes identified by Beck seem to remain relevant. Moreover, Beck's theory of PPD (1993) seems to have a significant impact in the development of awareness and understanding of postpartum adjustment issues resulting in better informed professionals, and more educated women who appear to be better prepared to face PPD.

The women in the present study seemed to have a new attitude, not apparent in previous studies, about their expectations from the professional community. The strong message that transpires from the data is that PPD women in this group think that their suffering could have been prevented by timely information about the postpartum adjustment period. The women in this study called for their physicians to be more proactive in assessing their mood and provide guidance and education about what to expect and how to identify symptoms early.

The women in this study expressed a newly identified need for transcendence after their PPD experience. Women want to inform other women; they want to talk about their experience to help prevent it in other women. The women in this study had a strong, consistent message to other women encouraging them to express their needs, talk about their feelings and thoughts, and ask and accept help through different channels. They

want to involve their community, including their physicians, in shifting the way motherhood is discussed to include realistic expectations and appropriate explanations of the challenges of the postpartum period. In doing so, women hope to prevent guilt and the sense of being an inadequate mother which are usually triggered by the symptoms of the disorder.

It seems clear by the success of the PPD support groups involved in this study that women attending the groups are receiving appropriate education and support that allows them to understand their situation for the first time, unfortunately, after suffering sometimes for months before attending the support group. Only one woman in the present study was referred to the PPD support group at the hospital right after delivery. Only 4 women were referred to the support groups by their obstetricians, the same number of women who found the group by themselves or were referred by a friend. This ratio needs to change to make health care providers the main source of referral to PPD services after early detection or in a preventative way when risk factors are present. This means that healthcare providers need to screen for risk factors and symptoms routinely and have resources available for swift and seamless referrals.

The MBSR program included in this study could be included routinely in the care of postpartum women as a tool to prevent the development of severe symptoms of PPD. It presents a positive approach to the most common issues faced by women after childbirth. The program is easily adaptable to the prenatal period and can be further developed to include more current or emerging issues as they are identified by future

research. The MBSR program can serve as a model for similar tools to address a variety of issues where reducing stress could improve behavioral or physical health outcomes.

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Appendix A: Letter of Cooperation From Support Groups' Organizer

Letter of Cooperation from Birdie Gunyon Meyer, RN.MA, Indiana University Health, Indianapolis, Indiana

May 15, 2013

Dear Marina Pesserl,

Based on my review of your research proposal, I give permission for you to conduct the study entitled *The experience of a mindfulness based stress reduction psychoeducational program in postpartum support groups* within the IU Health Perinatal Mood Disorders pregnancy and postpartum support groups. As part of this study, I authorize you to recruit and collect data from the participants in said groups as described in the proposal, invite willing participants and facilitators to interviews, and disseminate the results as described in the proposal. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include: Continue providing locations and opportunities for the support groups to take place as usual with the same standards and requirements in regards to confidentiality and facilitators' qualifications as before. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

Birdie Gunyon Meyer

Birdie Gunyon Meyer, RN, MA
Coordinator, PMD Program
Indiana University Health
Bmeyer2@iuhealth.org
317-962-8191

Appendix B: Group Attendees' Informed Consent

CONSENT FORM FOR PPD SUPPORT GROUP ATTENDEES

CONSENT FORM

You are invited to take part in a research study of the experience of living with Postpartum Depression (PPD) and of utilizing mindfulness based stress reduction (MBSR) techniques, learned at postpartum support groups. The researcher is inviting women who currently attend the postpartum adjustment support groups in the Indianapolis metropolitan area to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.
This study is being conducted by a researcher named Marina Pesserl, who is a doctoral student at Walden University.

Background Information:
The purposes of this study are to describe the current experience of PPD from the perspective of the women suffering from it, and their experience utilizing an MBSR program offered at the groups. Information about the characteristics of the participants such as ethnicity, age, previous history of depression, number of children, time after delivery of the last baby, and level of practice of the mindfulness based stress reduction skills taught in the groups will be collected and kept confidential. The stress reduction program will be offered at the groups at the group facilitator's discretion. The reason for introducing such a program in the support groups is based on research linking depression with stress in the general population. Based on the fact that the time after having a baby usually becomes stressful for mothers in particular, this researcher believes that helping moms cope with and reduce stress may help them improve in their postpartum adjustment and wellbeing.

Procedures:
If you agree to be in this study, you will be asked to:

- Read and sign this consent form after having ample time to consider it and ask questions about it.
- Contact the researcher or provide your information for the researcher to contact you if you so prefer to set up an interview time and location at your convenience.
- Take part in a personal and individual interview with the researcher.

Interviews will be audio recorded. A verbatim transcription of your interview will be sent to you for accuracy.

Eligibility: To participate in this study you need to be at least18 years old.

Voluntary Nature of the Study:
This study is voluntary. This means that everyone will respect your decision of whether or not you want to be in the study. No one at Indiana University Health System or Walden University will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind during or after the study. You may stop at any time.

Risks and Benefits of Being in the Study: Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as becoming upset when recalling stressful events of the week. Being in this study would not pose risk to your safety or physical wellbeing.
Potential benefits of participating in this study include the gratification of voicing your personal experience of PPD and group participation as a contribution to the field of knowledge in postpartum depression with the potential of having a direct impact on the development of programs designed to help women in the postpartum period.

Payment:
There are no payments, thank you gifts, or reimbursements provided to the participants in this study.

Privacy:
Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure by filing the completed research documents under lock in the researcher's office and in a bank safe deposit box. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via e-mail at marina.pesserl@waldenu.edu. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 1-800-925-3368, extension 3121210. Walden University's approval number for this study is 12-09-13-0063471 and it expires on December 8, 2014.

Please keep this consent form for your records.

Statement of Consent:
I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By signing below, I am agreeing to the terms described above.

Printed Name of Participant _____

Date of consent _____

Participant's Signature _____

Researcher's Signature _____

Appendix C: Group Facilitators' Informed Consent

CONSENT FORM FOR PPD SUPPORT GROUP FACILITATORS

Birdie Gunyon Meyer has given permission to Marina Pesserl, who is a doctoral student at Walden University to conduct a research study at the Indiana University Health System postpartum adjustment support groups in Indianapolis.
This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

Background Information:
The purposes of this study are to describe the current experience of PPD from the perspective of the women suffering from it, and their experience utilizing an MBSR program offered at the groups. Information about the characteristics of the participants such as ethnicity, age, previous history of depression, number of children, time after delivery of the last baby, and level of practice of the mindfulness based stress reduction skills taught in the groups will be collected preserving the anonymity of the respondents. The stress reduction program will be offered at the groups at the group facilitator's discretion. The reason for introducing such a program in the support groups is based on research linking depression with stress in the general population. Based on the fact that the time after having a baby usually becomes stressful for mothers in particular, this researcher believes that helping moms cope with and reduce stress may help them improve in their postpartum adjustment and wellbeing.

Procedures:
If you agree to participate in this study, you will be asked to:

- Read and sign this consent form after having ample time to consider it and ask questions about it.
- Participate in an interview about your personal experience as a group facilitator during the duration of the study. This interview will be audio recorded

Eligibility: To participate in this study you need to be at least18 years old.

Voluntary Nature of the Study:
As a group facilitator, you have received training in the MBSR psychoeducational program that can be offered at the support groups. You have sole discretion about using the MBSR psychoeducational program, and your decision about using it or not will not affect this study's integrity or the ability of attendees to participate in the study.
This study is voluntary. This means that everyone will respect your decision of whether or not to participate in the facilitators' interview. No one at Indiana University Health System or Walden University will treat you differently if you decide not to be included in the focus group.

Risks and Benefits of Being in the Study:
As a group facilitator, this study will not affect the usual routine of the group meetings except at the beginning of weeks 1and 8 of this study when the researcher will attend the group to explain it to potential participants and distribute research documents to the interested ones. Potential benefits of participating in this study include the gratification of contributing to identify the pros and cons of using an MBSR program at the PPD support groups from your own personal perspective, and to voice your personal experience as a contribution to the field of knowledge of PPD, directly impacting the development of future programs designed to help women in the postpartum period.

Payment:
There are no payments, thank you gifts, or reimbursements provided for participating in this study.

Privacy:
Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure by filing the research documents and audio recordings under lock in the researcher's office and in a bank safe deposit box. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via e-mail at marina.pesserl@waldenu.edu . If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 1-800-925-3368, extension 3121210. Walden University's approval number for this study is 12-09-13-0063471 and it expires on December 8, 2014.

Please keep this consent form for your records.

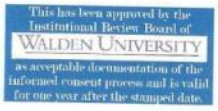
Statement of Consent:
I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By signing below, I am agreeing to the terms described above.

Printed Name of Group Facilitator

Date of consent _____

Group Facilitator's Signature _____

Researcher's Signature _____



Appendix D: Participants' Interview Protocol

PARTICIPANT INTERVIEW PROTOCOL

Name: **Date:**

Demographic Information

Age: ☐ **Marital Status :** Single ☐ Not Single ☐ **College education** ☐

Months postpartum : ☐

Race: White ☐ Black ☐ Asian ☐ Other _____ **Ethnic background:** Hispanic ☐ Other_____ **Referred by:** OB ☐ Pediatrician ☐ Family Dr. ☐ Hospital ☐ Comm. agency ☐ Poster ☐ PSI ☐ Other_____

Depression/ anxiety in pregnancy ☐
Currently in medical/ behavioral treatment ☐
Previous Postpartum depression/ anxiety ☐

How many meetings did you attend?_____ **Who did you bring for support?**_____
Were there MBSR techniques used in at least one of the meetings?_____
Did you practice any of the techniques at home?_____ **Which ones?**_____
Did any event experienced as adverse occurred during the duration of the study? ☐ **Yes** ☐ **No**

Self-assessment of stage of behavioral change:

Please, select (1)the statement that best described your situation at the beginning of the study AND (2) the one that best describes your current situation :

☐ ***"I don't have any problems adjusting to being a mom that justify my regular participation in the support group."***

☐ ***"I have clear difficulties adjusting after the birth of my child but I'm not sure I can commit to consistently attending the support group."***

☐ ***"I have been thinking that I might do something to improve my postpartum adjustment but I'm not sure yet what or if I can commit."***

☐ ***"I have tried/ considered some things to help me with my adjustments after the baby without great results."***

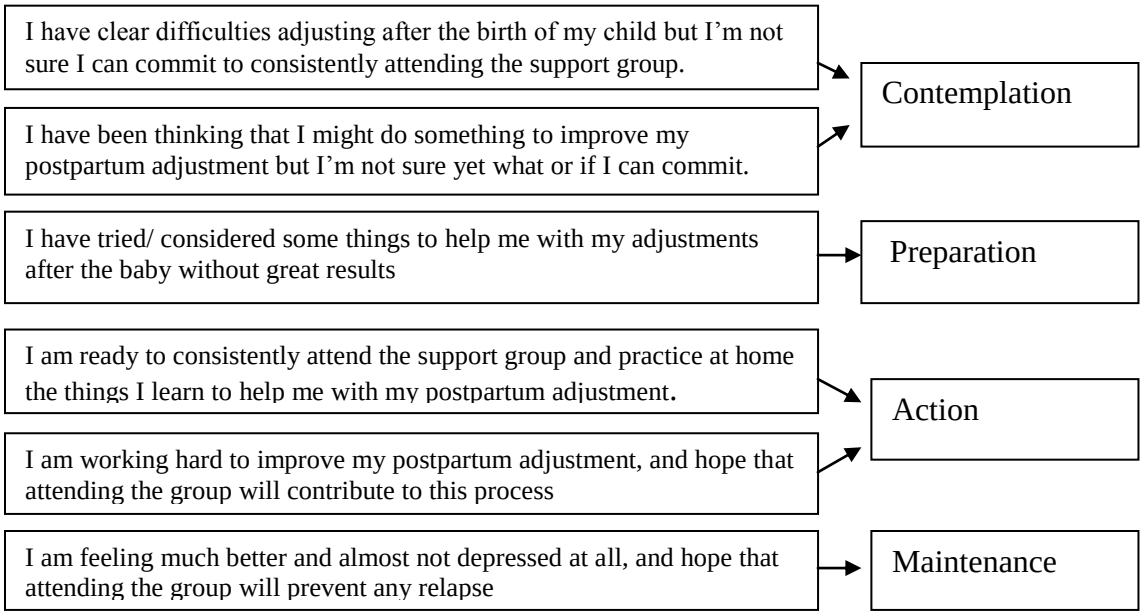
☐ ***"I am ready to consistently attend the support group and practice at home the things I learn to help me with my postpartum adjustment."***

☐ ***"I'm working hard to improve my postpartum adjustment, and hope that attending the group will contribute to this process."***

☐ ***"I am feeling much better, and almost not depressed at all, and hope that attending the group will prevent any relapse."***

Interview Questions	Notes/ Observations
1. How would you describe your personal PPD experience?	
2. How do you perceive yourself as different from women who have not had PPD?	
3. What would you tell women who are currently experiencing PPD?	
4. Looking back at how you felt before and after this group experience, do you perceive any changes?	
5. Are there any aspects of your group participation that seemed to help you?	
6. Is there anything you missed in your group experience?	
7. How did you feel during the MBSR exercises?	
8. Was there anything experienced as disruptive/ counter-productive? Please, explain.	
9. What themes of the MBSR program seemed to be most representative of your individual needs at the time?	
10. What themes seemed irrelevant?	
11. Have the MBSR techniques learned at the group been helpful in other areas of your life?	

Appendix E: Stages of Behavioral Change assessment and interpretation according to the TTM



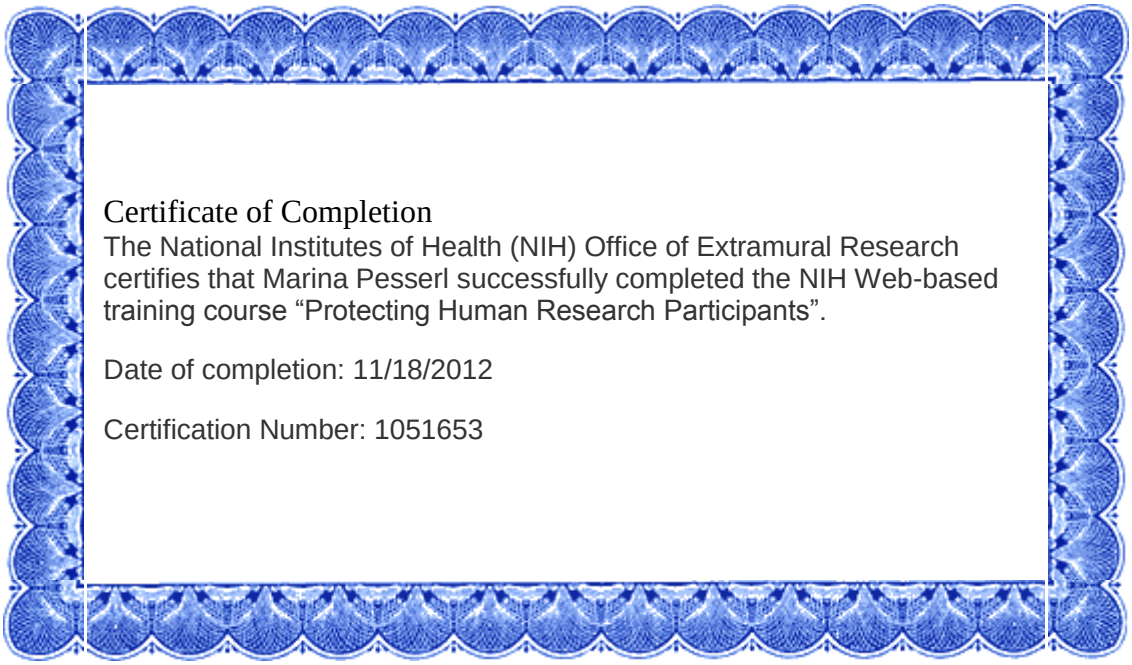
Appendix F: Group Facilitators' Interview Protocol

FACILITATOR'S INTERVIEW

Initials: **Date:**

Interview Questions	Notes/ Observations
1. How was your experience administering the MBSR psychoeducational program?	
2. What were the factors that prompted you to use or not use the program at the support groups?	
3. What are your impressions about the outcomes of using the MBSR program?	
4. What are the differences with not using the MBSR program, if any?	
5. What were the main issues concerning the women attending the support groups as observed by you?	
6. Is there anything you would like to add?	

Appendix G: Certificate of Protection of Human Research Participants



Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that Marina Pesserl successfully completed the NIH Web-based training course “Protecting Human Research Participants”.

Date of completion: 11/18/2012

Certification Number: 1051653

Appendix H: Invitation to Participate in Research Study Handout

Invitation to participate in a study on
PPD, stress and the use of mindfulness based stress relaxation.

The researcher, Marina Pesserl, is a doctoral student with Walden University in the Health Psychology program.

Women **18 years old or older** attending the PPD support group are invited to participate in an individual, private, and confidential interview with the researcher about their own personal experience with PPD or a difficult adjustment after a baby and about their personal experience in the support group during the duration of the study.

The study focuses on the PPD experience, stress, and using mindfulness based stress reduction to combat postpartum distress.

The researcher will introduce herself at week 1 of the study and provide participants with information about their upcoming interview. For 8 weeks, group meetings will continue to take place as usual with the possible exception of a short relaxation exercise offered at the discretion of the group facilitator. After week 8, personal interviews will start taking place in Indianapolis at a place and time to be determined for the convenience of the participating women.

Interviews will be audio-recorded and a verbatim transcription of the interview will be given to the participant for accuracy purposes before including it in the research study.

Participants will be given ample time to decide if they want to participate in the study and can withdraw at any time, no questions asked.

Appendix I: Invitation & Sign-up form

Invitation to participate in a study on
PPD, stress and the use of mindfulness based stress relaxation.

The researcher, Marina Pesserl, is a doctoral student with Walden University in the Health Psychology program.

Women **18 years old or older** attending the PPD support group are invited to participate in an individual, private, and confidential interview with the researcher about their own personal experience with PPD or a difficult adjustment after a baby and about their personal experience in the support group during the duration of the study. The study focuses on the PPD experience, stress, and using mindfulness based stress reduction to combat postpartum distress.

Interviews will be audio-recorded and a verbatim transcription of the interview will be given to the participant for accuracy purposes before including it in the research study.

Participants will be given ample time to decide if they want to participate in the study and can withdraw at any time, no questions asked.

I you would like to contact the researcher to set up an interview, please call Marina at (249) 910-1591 or email her at marina.pesserl@waldenu.edu

Or

If you prefer to be contacted by the researcher to set up an interview, please, complete the segment below with your contact preference, place it into the provided envelope, seal it, and mail it, or return it to your group facilitator who will forward it the researcher.

Thank you for your interest!

First Name:_____
Phone Number: _____
E-mail:_____

□ ***Please, contact me to set up an interview. I am interested in participating in the above mentioned study.***
□ ***I am at least 18 years old.***

Curriculum Vitae

Marina Pesserl, MA, LPC, NCC, ACS

Academic Experience:

09/07 - Present	Candidate for Doctor of Philosophy - Health Psychology**,** Walden University, Minneapolis, Minnesota. Dissertation title: *A mindfulness based stress reduction psychoeducational program in postpartum support groups.*
08/03 - 08/06	Master of Arts - Community Counseling**,** Siena Heights University, Adrian, Michigan
04/76 - 07/81	Bachelor of Arts – Education, Major in Educational Psychology, Institute of the Sacred Heart, Buenos Aires, Argentina.

Languages: Spanish, French, and German.

Relevant Professional Experience:

01/07 - Present	Psychotherapist, Lifestart Counseling, PLLC Provide individual, couples, and group therapy utilizing evidence based practices such as cognitive behavioral therapy and mindfulness. Specialty: Perinatal anxiety and mood disorders. Other areas of focus: depression, anxiety, grief, codependency, adjustments to life changes and losses, adult ADHD, and parenting. Hypnotherapy. Facilitate support groups, and community classes. Present to professional groups. Provide clinical supervision to limited licensed professional counselors in the process to obtain full licensure.
03/14 –Present	Certified Mental Health First Aid Instructor. Provide first aid training and certification in mental health to community agencies and the general population with the goal of increasing awareness and education on how to recognize mental health crises and how to provide first aid assistance until professional care is in place.

04/02 – 03/14	Individual Family Support Coordinator, Parenting Program, Beaumont Health System Recruit, train, and supervise volunteers in the hospital setting and in the community. Counsel families with their first child focusing on the first three months postpartum in different areas including adjustments to parenthood, mother and baby care, returning to work, breastfeeding and feeding in general. Conduct psychoeducational activities at parenting groups on topics related to infancy, parenting, and adjustment. Manage over one hundred volunteers. Supervise master level counseling interns during practicum and internship. Maintain a link with community resources and agencies and refer families as needed.
05/10 – 08/12	Psychotherapist, Starfish Family Services. Provided individual and conjoint family therapy to clients in the Third Party department at Lifespan Clinical Services. Supervised master level counseling students.
01/05 -12/05	Intern, Women's Survival Center of Oakland County**,** Michigan provided individual and group counseling under direct supervision of the Director of Women's Services. Focus on the fields of domestic violence, adjustments during and after divorce and post-traumatic stress.

Community Service and Consulting Experience:

04/14- Present	Volunteer. Oakland Mediation Center. Facilitate civil mediations at the center and Oakland County courts.
03/14- Present	Member. Michigan Statewide Perinatal Mood Disorder (PMD) Coalition. Participate in activities pursuant to the coalition goals of: implementing the use of best practice screening tools for PMD; establishing a consultation network to support practitioners; promoting education and awareness; creating, establishing and supporting PMD Best Practice Guidelines; advocacy; service identification, and consulting.
01/10 - Present	Member. Social-Emotional Subcommittee, Postpartum depression task force, Great Start Collaborative Oakland County,

	Michigan Regularly meet with community agencies and professionals dedicated to the development of resources and information for physicians and educators about perinatal mood disorders and their impact on the community.
10/08 - 2011	Volunteer, Postpartum Support International Provide nationwide support and resources in Spanish to women experiencing postpartum depression, anxiety, and other mood disorders. Coordinated the Spanish warmline nationwide from 2009 to 2011.
01/09 – 03/14	Member. Postpartum Adjustment Committee, Beaumont Health System, Royal Oak, MI Regularly meet with the Postpartum Support Coordinator, Social Workers, and the Community Education Department of the hospital, and with community agencies and other hospitals' representatives to further the issue of perinatal mood disorders in regards of social and professional acknowledgment of the problem, and develop resources and education for physicians and other health care providers.
11/09 – 03/14	Member, Domestic Violence Committee, Beaumont Hospital, Royal Oak, MI Regularly meet with other hospital employees to develop social and professional awareness of the issue of domestic violence and its implications.
10/00 - 04/02	Volunteer, Parenting Program, Beaumont Hospital. Provided support to new parents during the first three months postpartum through phone calls, and home and hospital visitation.

Licenses and Certifications:

Licensed	Michigan, Professional Counselor - Permanent I.D.#6401010147
Certified	National Board for Certified Counselors, NBCC #261542
Certified	National Institutes of Health, Protecting Human Research Participants, Certification #1051653
Certified	Mental Health First Aid Instructor.
Certified	Approved Clinical Supervisor (ACS)
Certification in progress	Hypnotherapist. The Wellness Institute. Trained at the Cleveland Clinic Integrative Medicine Department, Cleveland, OH.

Honors and Rewards:

Psi Chi Honor Society in Psychology. Inducted on 1/24/2009.

Professional Presentations and Papers:

Pesserl, M. (2003, March). *Parenting newborns in different cultures.* Presentation and panel discussion at the Association of Women's Health Obstetric and Neonatal Nurses (AWHONN) Conference, Saint John's Hospital, Warren, MI.

Pesserl, M. (2006). *Effectiveness of a volunteer based program in promoting parental satisfaction and sense of competence in low risk families* (Unpublished master's thesis). Siena Heights University, Adrian, Michigan.

Pesserl, M. (2007, October). *Perinatal Depression*. Presentation at Providence Hospital, Postpartum Unit, Southfield, MI.

Pesserl, M. (2007, November). *Recognizing and understanding perinatal mood disorders.* Presentation at the Michigan Counseling Association Conference, Grand Rapids, MI.

Pesserl, M. (2009, August). *Adoption. Waiting for placement*. Presentation at Bethany Christian Adoption Services, Madison Heights, MI.

Pesserl, M. (2010, October). *Effectiveness of postpartum adjustment support groups: A stress management model.* Poster presentation at the meeting of The Marce Society and Postpartum Support International, Pittsburgh, PA.

Research Interests:

Perinatal mood disorders. Effectiveness of interventions for perinatal and other mood disorders. Development and testing of stress management programs and interventions.

Professional Affiliations:

National Board of Certified Counselors
American Counseling Association
Michigan Counseling Association
Michigan Mental Health Counselors Association
American Psychological Association
Michigan Coalition Against Domestic and Sexual Violence
Postpartum Support International

Heart Centered Therapies Association
The Marce Society
International Association of Women's Mental Health

Associated Professional and other Work Experience:

01/87 - 12/90	Foreign Language Coordinator, Didactica School, Munich, Germany Interviewed and orientated prospective students. Trained and supervised a team of teachers. Organized and delivered seminars to students. Developed materials and class strategies according to the Lozanov's Superlearning method. Taught college level Spanish.
01/82 - 12/85	Co-owner /Head of administration office. Escorpio, Buenos Aires, Argentina Set goals and strategies for a start-up company as part of the leadership team. Interviewed and hired administrative and sales personnel. Developed and implemented the company's administrative system. Responsible for timely follow- up on customers and vendor related activities.
01/78 - 12/81	Supervisor Sales Administration, Dimetal S.A., Buenos Aires, Argentina Supervised customer orders, and coordinated deliveries with manufacturing plant. Followed-up billing and payment processes.

References:

Patricia Mc Cabe, RN, MPA, BSN, CCM. Aetna.

Pam Moffitt. President Tree of Hope Foundation.

Wendy Davis, Ph.D. Postpartum Support International, Executive Director.