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Effect of Violent and Nonviolent Risk Factors on Depression in Postpartum Mothers

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Abstract

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MS, Walden University, 2008

BA, Ohio State University 2006

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The purpose of this quantitative, nonexperimental study was to analyze and explore the predictors for postpartum depression (PPD) and the strength of these predictors using a secondary data set from the Fragile Families and Child Wellbeing Study from Princeton, Pennsylvania State, and Columbia Universities. By incorporating the biopsychosocial model and feminist theory as the theoretical frameworks for this research, PPD was conceptualized as a serious, multidimensional psychological condition. Using logistic regression, many predictors were identified as etiological for PPD, including subjective attitudes about ideal and introjected characteristics ascribed to women as primary caretakers. These beliefs prevent the extension and acceptance of social support from others, as well as the internalization of negative self-images. Furthermore, it was conceptualized that hormonal influences and lifestyle are risk factors that significantly affect the expression of PPD. According to study results, financial stressors and emotional stressors from a dissatisfaction of parenting were the strongest predictors of PPD among mothers. This study provides an important contribution to the existing literature and enhanced social change initiatives by making public the effect of social supports, biology, and their intersection on emic PPD experiences and expectations using participant's life experiences. Furthermore, this study provides information to the behavioral health and obstetric community that will ensure greater access to postpartum care.

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Dedication

This dissertation is dedicated to my children, Jacob and Aden. I love you more than all the stars in the sky. From the moment you were born all I ever wanted was to make a better life for you. You are the reason I sought to get my PhD. I want to thank you for all the time and patience you gave while I typed away at the computer. Thank you for being understanding when I have to leave for school or do homework. Thank you for loving me when I was frantic and crazy trying to make a deadline. Thank you for being my strength and my breath. I love you. Aden, I feel like you have sacrificed the most. You waited so patiently as I finished this dissertation. You are a wonderful, wonderful young man. Jacob thank you for being both mother and brother taking care of everything while I worked. You are the epitome of everything that is good in this world. I want to say thank you to my husband for fixing dinner, taking care of hurts and scrapes, and referring . Words cannot express my appreciation. I love you.

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Chapter 1: Introduction to the Study

Introduction

The postpartum period carries high risk for mental health disorders. For many women, this is a time of joy and happiness, whereas for others the end of a pregnancy is accompanied by major depressive episodes known as postpartum depression (PPD). This period is a time of significant change for the mother and her partner if she has one. As the mother adjusts mentally and physically to her social and hormonal changes, it is common to experience minor emotional distress, sometimes minimized as "the baby blues", and can occur immediately after birth up to 2 weeks postpartum (Wylie, Martin, Marland, Martin, & Rankin, 2011). This presentation occurs in 80% of new mothers (Kathree & Peterson, 2012). Mild postpartum distress symptoms include mild anxiety, moodiness, crying, lack of sleep, and difficulty adjusting to motherhood (Robertson, Grace, Wallington, & Stewart, 2004).

PPD, by contrast, is a debilitating disorder that occurs in 20% of women (Davenport, 2012). Symptoms of PPD include, but are not limited to, anhedonia, excessive crying, feeling overwhelmed, feelings of guilt, irritation, and an inability to bond with the baby (Kara, Unalan, Cifcili, Cebeci, & Sarper, 2008; Murray & Cooper, 1996). It is not unusual for the new mothers to be consumed with guilt due to feeling disconnected and overwhelmed by feelings of depression (Bowen , Bowen, Butt, Rahman, & Muhajarine, 2012; Glasser, 2012). History supports stigmatizing social intersection of the postpartum experience; for example, in the 19th century, if a woman showed symptoms of PPD, she was labeled as neurotic (Nager, Johansson, & Sundquist,

2005). Such labeling could be chronic, potentially causing prolonged exposure to distress because PPD can reoccur with each pregnancy and can become more chronic each time (Le, Perrry, & Sheng, 2009).

In addition, PPD it is the most common mental health disorder among this group of women (Le, Perry & Sheng, 2009). Onset of PPD can be anywhere from 6 weeks to 12 months postpartum; however, it most commonly occurs between 6 weeks and 3 months. More severe cases of PPD can have an onset as early as 48 hours after giving birth (Kara et al., 2008). Functional impairment is a risk of PPD and decreases the mother's ability to effectively care for her newborn as well as increases the depression and deepens the feelings of worthlessness (Bobo et al., 2014; Bowen al., 2012).

Risk factors in a mother's life may escalate these symptoms. Mothers who suffer from PPD have an increased risk for poor infant attachment, functional impairment, suicide, and infanticide (Katon, Russo, & Gavin, 2014; Dennis, Heaman, & Vigod, 2012). In addition, the potential to affect the well-being and cognitive development of the infant (Grote et al., 2009; Georgiopoplos, Bryan, Wollan, & Yawn, 2001; Murray & Copper, 1996). Approximately 4 million live births occur in the United States every year (Dolbier, Rush, Sahadeo, Shafer, & Thorp, 2012) and researchers estimate that approximately 13% to 20% of those mothers will experience a PPD episode (Mulcahy et al., 2009).

In light of high profile cases such as Andrea Yates, who drowned her five children in a bathtub in 2001, and the voices of various superstars, PPD has been given attention in medical literature and in the media (Blum, 2007). Some states require

obstetrics departments to hand out literature to pregnant mothers containing information about PPD (Blum, 2007). The surge of attention has brought an increased desire to understand the experiences mothers face in a PPD episode (Ahmed, Koenig, & Stephenson, 2006). Research has found that after birth mothers are particularly sensitive to psychosocial factors such as stressful events or situations that have been shown to facilitate depressive symptoms (Katon et al., 2014; Beydoun, Al-Sahab, Beydoun, & Tamim, 2010). Negative outcomes are increased if the mother has certain predictors or risk factors, such as poor social support, violence, financial difficulties, poverty, partner-related stressors, traumatic events, and previous mental health issues particularly after pregnancy (Beydoun et al., 2010).

The objective of this study was to explore the predicting factors known to be associated with PPD and to identify which predictor is best associated with increases in PPD symptomology. To date, predictors that have been identified in literature searches include interpersonal relationships, intimate partner violence (IPV), economic hardships, incarceration (self or partner), social support, and emotional stress due to parental dissatisfaction. Although current research on predictors of PPD helped bring understanding to perinatal depression, each predictor is generally studied as an isolated segment; therefore, there is an increased need to fully address the role each factor plays in the increase of PPD symptoms (Katon et al., 2014; Ahmed et al., 2006). Understanding the degree to which certain risk factors can predict PPD will help future researchers explore the factors in greater depth and provides positive social change. Better understanging of PPD enhances the health care professional's awareness about the

importance of earlier detection of PPD. The findings of this study may inspire development of wrap around services aimed at risk factor-reduction of dysphoric experiences for new mothers. In Chapter 2, I discuss the gap found in PPD literature as well provide greater detail about predictors and their effect on the course of PPD.

Major Preview of the Chapter

In this chapter, I provide an overview of the relevant literature on PPD. The statement of the problem is next, followed by the purpose of the study. I then provide the research question and hypothesis. I then briefly describe the theoretical framework, which I expand on in Chapter 2. I also discuss assumptions and limitations. I give definitions of the key statement and then in the summary, I detail the major points of the chapter.

Types of Postpartum Affect Dysregulation

Postpartum psychosis. Postpartum psychosis or PPD with psychotic features can be a serious life threatening disorder if left untreated (Spinelli, 2005). Postpartum psychosis is distinctive from uncomplicated PPD in that this diagnosis requires the presence of hallucinations and/or delusions. This occurs in 4% of the postpartum population with 1% committing infanticide (Sit, Rothschild, & Wisner, 2006). Postpartum psychosis is characterized by a sudden onset within 1 or 2 weeks postpartum, with an odd affect, catatonia, and auditory hallucinations and delusions that center on the baby (Sit et al., 2006). Women who are affected with PPD typically have history of bipolar disorder. There is also an increased risk for the commission of infanticide or

abuse as this disorder progresses (Doucet, Jones, Letourneau, Dennis, & Blackmore, 2011; Heron et al., 2012).

Postpartum psychosis, however, is more serve than PPD, has a greater effect on bond disruption, and requires immediate hospitalization. Yet because this disorder is so rare, little research is available (Doucet et al., 2011). During her psychotic episode, Andrea Yates believed that Satan was telling her that if she killed her children they would be saved from living in hell (Spinelli, 2005). Ms. Yates had previously been diagnosed with bipolar disorder and mood instability. She is currently in a state mental health facility (Kesling, 2006). The affected mothers generally have no previous criminal records and others often describe them as having good parenting skills (Sit et al., 2006). The following case illustrates the aforementioned points. Sit et al. reported a case history of a 29-year-old medical doctor that gave birth to a full-term infant boy. The birth was uncomplicated and the planned pregnancy was healthy and uneventful. Within 48 hours, the mother began reporting experiencing strange smells, voices, and catatonic like behavior. She was diagnosed with postpartum psychosis and given proper treatment.

Postpartum obsessive-compulsive disorder. Postpartum obsessive-compulsive disorder (PPOCD) is less severe than either PPD or postpartum psychosis but is more chronic (Speisman, Storch, & Abramowitz, 2011). Bond disruption is less likely to occur than with either of the other two disorders, but it has the greatest detrimental effect on the mother (Speisman et al., 2011). PPOCD is characterized by unwanted obsessive, intrusive thoughts that show the baby is in some type of peril. Examples of obsessive thoughts associated with PPOCD include thoughts of the baby dying a violent death, thus

causing the mother stress and anxiety followed by some type of ritual, such as praying or maintaining constant contact with the baby. The mother would engage in these behaviors to decrease her anxiety yet they would affect her ability to engage in productivity. Impaired functioning marks these mothers often and they cannot work, have trouble with daily household tasks, and have trouble sleeping (Speisman et al., 2011).

Postpartum depression. According to O'Hara and Swain (1996) a history of depression or other mood and anxiety disorders is indicative of PPD symptomology, followed by meager social support and external life stressors. In addition to those risk factors, O'Hara and Swain suggested diminished social status increases the chances of PPD. This could indicate a need for acceptance and low self-esteem in new mothers, both risk factors for postpartum dysphoria. This population is also at an increased risk for IPV, which occurs among 20% of couples in the United States (Valentine, Rodriguez, Lapeyrouse, & Zhang, 2011). This not only increases the risk of PPD, it also increases mortality rates for the mother and infant.

Serious consequences of mood disturbance can occur after parturition. Infanticide, for instance, is frequently associated with untreated postpartum disorders. Thirty percent of all infant deaths occurring between 1976 and 2004 were attributed to maternal infanticide (Kesling, 2006). Currently, one third of infant deaths less than 1 year of age are infanticide by the mother (Spinelli, 2005), a crime that is believed to be underreported and underresearched.

Many new mothers lack preparations for, and are uneducated about, the negative symptoms associated with PPD (Terry, 2014; Bowen et al., 2012; Shields, 2005). This

unexpected experience may traumatize the mother further as it does not fit her idealized view of motherhood (Bowen et al., 2012; Terry, 2014). Brooke Shields (2005), a renowned actress and author, wrote of her struggles in *Down Came the Rain: My Journey through Postpartum Depression*. She disclosed that after nine in vitro fertilizations and numerous miscarriages, she was able to carry a pregnancy to term. After the birth, and in the months following postpartum, she reported having regular feelings of disconnection, was unable to console her newborn, and often could not get out of bed (Shields, 2005). Her naivety about the postpartum experiences and negative thoughts of motherhood overwhelmed her and increased her PPD.

PPD depression influences parenting and child development (Blottner et al., 2013). Parents have a tremendous influence on their children, particularly during their early years of life (Logsdon, Wisner, & Pinto-Foltz, 2006). Logsdon et al. wrote, "A warm, engaged, responsive mother who understands and encourages a child's development creates an environment that is conducive to producing healthy, productive children" (p. 652). This process begins immediately after birth through the mother-infant bond. Mothers experiencing dysphoric mood may have difficulty performing the tasks necessary to ensure bonding (Zajicek-Farber, 2010). If a mother's depression is left untreated, the vital bonding process between the mother and infant could be interrupted; therefore, developmental outcomes are delayed (Mulcahy, Reay, Wilkinson, & Owen, 2010; Zajicek-Farber, 2010; Logsdon et al., 2006).

Infants with depressed mothers are shown to be more irritable and harder to console than infants with nondepressed mother (Miller, Shade, & Vasireddy, 2009). In

later years, this irritability can turn into an increased temperament, such as aggression, along with problems focusing and other childhood behavioral problems, causing the need to provide early childhood preventive programs (Mulcahy et al., 2010; Zajicek-Farber, 2010). Furthermore, this problem can be exasperated by psychosocial risk factors such as emotional stress or IPV.

PPD is often undetected and untreated for a variety of reasons. Lack of access to comprehensive medical insurance and financial difficulties may be barriers to proper PPD diagnosing in postpartum treatment (Bobo et al., 2012). Some mothers fail to receive proper screenings despite showing symptoms of PPD (Bobo et al. , 2014).). For new mothers, this could disrupt the attachment process and increases the risk for executive function disorders for their children and increase the likelihood of developing insecure relationship attachments (Howell et al., 2014; Murray & Cooper, 1996).

Societal norms are thought to have negative implications in the treatment and support of mothers who are affected by PPD (Kantrowitz-Gordon, 2013; Howell et al., 2014). Many cultures, including North American culture, adhere to a social expectancy heuristic that mothers should be the primary caretaker of their children. Adherence to such cultural beliefs may facilitate a barrier that prevents support person from helping or showing an understanding towards the mother's experiences (Kantrowitz-Gordon, 2013; Howell et al., 2014; Terry, 2014).

Furthermore, these cultural introjects may also prevent the mother from asking for help. Brooke Shields wrote that she did not reach out to ask for help due to her beliefs about managing personal responsibilities (Shields, 2005). Andrea Yates reached out for

help but was told by those close to her, including her husband, that she would be fine. It has been reported that her obstetrician instructed her not to have any more children. It was also reported that Mrs. Yates had previously evidenced psychotic symptoms. Her husband was also advised not to leave her alone with the children. He discounted this advice and left her alone with the children, unwilling to reassign her maternal responsibilities (McLellan, 2006). Both of these cases illustrate some of the misconceptions, stigma and challenges that affect PPD treatment and prevention. Therefore, because of these stigma, women may strongly experience a perception that they should be the primary caregivers and should be nurturing, and they often believe that they cannot seek treatment if their emotions are not congruent with the accepted ideal of female postpartum behavior (Kantrowitz-Gordon, 2013).

Another fear, or barrier, is that if mothers seek treatment, their children may be taken from their custody (Kantrowitz-Gordon, 2013). Many mothers may hesitate to divulge any concerns they have about postpartum mood concerns due to fear parental right disruption and physical custody changes, particularly if they lack the support needed to seek treatment (Kantrowitz-Gordon, 2013). In addition, untreated PPD may further affect infant development and the family dynamic (Baker & LaCoursiere, 2014; Bobo et al., 2012; Glasser, 2012; Murray & Copper, 1996). Approximately 800,000 women may suffer from some type of postpartum disorder (Kathree & Peterson, 2012). However, fear of being seen as an unift mother or having the stigma of being a unfit mother due to lack of awareness in the community on PPD prevents the mother from seeking treatment (Kantrowitz-Gordon, 2013; Terry, 2014).

Furthermore, according to Kantrowitz-Gordon (2013), mothers fear being reported to child welfare services by their pediatricians (Heneghan, Mercer, & DeLeone, 2004) who are mandated reporters of suspicions of child abuse, neglect or dependency. This often prolongs treatment for many mothers and increases the damage to families (Heneghan et al., 2004; Terry, 2014). Sometimes depression symptoms are so severe, mothers have trouble with basic, daily functioning (i.e., getting out of bed) (Gruen, 1990; Kathree & Peterson, 2012).

As women are experiencing and adjusting to the psychological and hormonal changes during the postpartum period, risk factors may affect the adjustment to parenting and increase the symptomology of PPD. A mother's diagnosis of PPD potentially effects the entire community, especially if the disorder has been left untreated (Kathree & Peterson, 2012; Mulcahy et al., 2009). Longsdon, Wisner, and Pinto-Foltz's (2006) findings on mother/infant bond disruption determined that PPD in mothers adversely affects the learning development of the infant. When the bonding process is interrupted, there may be long-term disruptive behavioral manifestations once these children enter school and interact with others outside of their families (Kathree et al., 2012; Mulcahy et al., 2009; Zajicek-Farber, 2009). Such behavioral interruptions can be costly and may require the school to provide additional support (Logsdon et al., 2006). A gap in the literature exists on the prevalence of executive functioning disorders and the ability of children to meet major milestones in mother's who suffer from PPD. It is clear that PPD is a challenge for mothers, influences the process of engaging in the mothering role (Kathree et al., 2012; Logsdon et al., 2006), and creates a burden on financial and

emotional resources. Continued research and education in the community, however, could mitigate the stigma and effect of PPD while creating an opportunity to serve larger mental health needs of the public.

The same predictors that have been identified as increasing the risk of PPD are also predictors associated with childhood delays. Additional services may be needed to ensure that the child meets major milestones, such as turning over, crawling, walking, and talking (Kathree et al., 2012; Mulcahy et al., 2009). In children who fail to receive such services or meet major milestones they are likely to develop their own behavioral and mental health disorders (Kathree et al., 2012; Mulcahy et al., 2009; Zajicek-Farber, 2009). As stated previously, the need for early intervention and treatment is essential to the mental and physical health of the mother and the infant, and to the development of the child (Bobo et al., 2014). Communities can provide support to families in ways of housing, food, cash assistance, and shelters. Services such as Help Me Grow, State Funded Preschool, and services from the National Education Association (NEA) are aimed at providing services to meet the social, educational, and emotional development of children from low-income families. Women who have PPD and have extensive trauma such as IPV who are not economically challenged do not have current wrap-around services to meet the needs of the families (Modi, Palmer, & Armstrong, 2014; NEA, 2015).

In this study, I sought to identify which risk factors are the best predictors of PPD. Understanding which risk factors have the most significant effect on PPD symptoms can avail future services to women who suffer from PPD by providing wrap-around services

that are aimed at providing support to the mothers and families, while also meeting the needs of children regardless of income. With increased understanding of risk factors during postpartum, there can be more extensive screening procedures and ultimately a plan to develop wrap-around services for postpartum mothers aimed at helping the mother find supportive services and aimed to decreased the developmental delays of the infants. In Chapter 2, I will provide a more detailed explanation about depression associated with pregnancy cessation and the risk factors that may affect PPD.

Significance of the Study

I explored the strength of individual social predictors for PPD and the strength of such predictors when they are intersected. Lack of rescources and understanding on the circular effect of risk factors on PPD negatively impacts treatment. Clinicians and sufferers are injured when best practices are underinformed due to weakened robustness in the literature. As such, my goal was to understand PPD predictors, create a foundation for further exploration, and facilitate earlier detection to ultimately assist victims and families. the significance of this research lies in its ability to assist in raising awareness about the seriousness of this problem to future researchers with the hope of social change.

Statement of the Problem

Most research findings on PPD identify general risk factors. As a result an urgency to better understand specifics related to the cause and course of PPD. Having a stronger understanding of which predictor has a more statistical significance will ultimately help mood-dysphoric, postpartum mothers. Education and PPD screenings are available to detect PPD in early stages (Yawn et al., 2012). However, current screenings

focus on depression and anxiety symptoms not on lifestyle or events. Therefore, developing a need to have a screening questionnaire that explores risk factors occurring in the mother prior to giving birth and in the early postpartum period. Exploring the of risk factors for PPD increases the chances that screenings will have a more pronounced role in hospitals and mental health settings for early detection. In sum, the problem I addressed is that researchers have identified many psychosocial risk factors as predictors of PPD. It is unclear which of these factors, or which intersection of factors, is the strongest predictor for PPD. As such, the problem to be explored in this study is which factors affect PPD by using a binary logistic regression analysis.

Purpose of the Study

The purpose of this study was to explore the social and relational factors that predict PPD symptoms. Characteristics for this study were identified using the pre-existing data set from the Fragile Families and Child Wellbeing Study (the FF Study). Using this data the strength of each factor is determined.Researchers from the FF Study collected data in hospitals located in large cities across the United States about mothers who recently gave birth to live infants. The goal of the FF Study was to better understand the family environment and maternal behavior. The FF Study also examined the effect of IPV, and other risk factors, on child development and their effects on the family. I explored the risk factors from the FF Study and evaluated the results to determine which risk factor is the strongest predictor on PPD symptoms as stated in the research questions. Because many of the social factors identified in the FF Study have been studied in isolation, my goal was to expand the existing body of literature by examining the effect

of these individual and intersected factors as they influence the etiology and course of PPD. For my study, variables were PPD (the criterion variable), and IPV, emotional, traumatic, financial and social stressors (predictor variables). I reviewed the strength of each predictor against each other.

Research Question and Hypotheses

Because the majority of research on PPD explores risk factors in general, including IPV, I focused on the specific predictors that have a statistically significant effect on postpartum mothers. An in-depth exploration of the development and course of PPD necessarily informs research, treatment, and practice of the postpartum experience for mothers and, by extension, families. My goal was to inspire future services that will stabilize families.

Research Question 1: Does intimate partner violence predict the likelihood of postpartum depression as defined by the Fragile Families and Child Wellbeing Study?

H_{a1}: Intimate partner violence does predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

H_{01}: Intimate partner violence does not predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

Research Question 2: Do emotional stressors from parental dissatisfaction predict the likelihood of postpartum depression as defined by the Fragile Families and Child Wellbeing Study?

H_{a2}: Emotional stressors predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

H_{02}: Emotional stressors do not predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

Research Question 3: Do financial stressors, or economic hardships, predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study?

H_{a3}: Financial stressors predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

H_{03}: Financial stressors do not predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

Research Question 4. Do partner-related stressors predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study?

H_{a4}: Partner-related stressors do predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

H_{04}: Partner-related stressors do not predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

Research Question 5: Does traumatic stress predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study?

H_{a5}: Traumatic stress does predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

H_{05}: Traumatic stress does not predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

Theoretical Framework

The theoretical framework for this study was the biopsychosocial model that asserts that biological, psychological, and social influences affect a woman's reaction to PPD (Melchert, 2011). This model demonstrates that social risk factors such as IPV, loss of a partner, financial stressors, and having a partner incarcerated, or having substance abuse problems, increases the likelihood that PPD symptoms may increase. More concise proposition of the theoretical framework is given in Chapter 2.

Because PPD can have biological cause such as the sensitivity to reduction in hormones and is a chemical malfunction of the neurotransmitters and psychosocial stressors may increase the symptoms of PPD, it is the relevant to use the biopsychosocial model to explain PPD (Ross, Sellers, Evans, & Romach, 2004). However, it is important to assimilate current research with the developmental approach that I used to design the research tool for this study.

Feminist theory is also used as the theoretical framework. The experiences of Brooke Shields and Andrea Yates have brought an increasing amount of attention to PPD (McMillian, 2006; Shields, 2005). Women's voices and personal histories are beginning to become a priority in research. Qualitative research findings have provided a more realistic depiction of motherhood that is against the societal norm of mothers who never tire and are always nurturing (Terry, 2014). However, the mythical standard of what denotes a "virtuous mother" is the standard that many mothers measure themselves against. This sets mothers up for disappointment and sparks an internal conflict if they cannot measure up, often leading to depression (Terry, 2014). Both Shields and Yates

believed that they failed to measure up. As previously stated, Shields believed that she had to be the primary nurturer despite suffering from exhaustion (Shields 2005) and Yates had no social support from her family, especially her husband who failed to provide help for her because he believed it was her reasonability to care for the children (McMillian, 2006).

Conceptual Framework

I used the biopsychosocial model and feminist theory for the basis and conceptual framework for this study. The concept that I studied was the idea that mixing social and physical stressors with the biological aspects and the pressure of the myth that mothers are the primary caretakers creates the psychological outcome. For the purpose of this study, I explored risk factors including the effect of IPV, as well as emotional, financial, traumatic, and partner-related stressors on the depression symptoms that occurs after the end of a pregnancy. I provide a more thorough explanation in Chapter 2.

Nature of the Study

For this study I explored whether the criterion variable, PPD symptoms, are affected greater by IPV, as well as emotional, financial, partner, or traumatic stressors as reported by the FF Study. Although data exist from the FF Study that examines many factors and their effects on families, no recent researchers have examined violent and nonviolent risk factors as a greater predictor of PPD symptoms.

Operational Definition of Variables

Biopsychosocial model: Evaluates biological and nonbiological risk factors as a complete explanation for PPD (Ross et al., 2004).

Emotional risk factors: A feeling tired or worn out from raising a family, feeling trapped by parental responsibilities, or feeling like parenthood is too much work (FF Study, 2001).

Financial or economic risk factors: Inability to pay utilities or rent that resulted in shut off or eviction (FF Study, 2001).

Fragile Families and Child Wellbeing Study: This is a longitudinal study that studies a cohort of families during a ten-year period to gather information on families and the well-being of the child. Both married and nonmarried families were interviewed, along with the child's caretaker and teachers.

Intimate partner violence: A harmful act by an intimate partner that causes physical, sexual, or psychological harm (CDC, 2015).

Partner-related risk factors: The respondent is separated or divorced from her husband/partner, husband/partner is not supportive or encouraging in important matters, and the husband/partner does not listen when needed (FF Study, 2001).

Postpartum depression: Having depressive symptoms that begin within 4 weeks postpartum and may last up to 1 year postpartum (Kara et al., 2008).

Traumatic risk factors: The respondent was homeless, she /partner/husband was incarcerated, or partner/husband passed away (FF Study, 2001).

Assumptions

Because I retrieved the data from an existing data set, I assumed that the participants were the primary caretakers for their infants. I assumed that participants were taken from a stratified sample of live births on a monthly basis. I also assumed that some mother's may have had substance abuse issues, lived in poverty, and were in abusive relationships.

Scope and Delimitations

There is a need to address which risk factor has the greatest effect impact on PPD to create better prevention programs and educate the public on the serious implications of PPD on the family. I used secondary data to evaluate the effect of IPV and other risk factors on PPD symptoms.

To be included in the study, participants were from a stratified sample of women from participating Fragile Family states. Mothers needed to have a live birth and be the primary caretakers of their infants. Finally, the data in the FF Study focused on mothers with their infants.Data from the FF Study fails to represent the nontraditional postpartum women and their experiences with PPD. Furthermore, the nontraditional populations of women, especially those who have places their infants up for adoption, are vulnerable to physical and nonphysical risk factors making them an ideal candidate for wraparound services that would improve their quality of life.

Limitations

Sampling methods is a limitation in this study . Isolating participants to include only women who have had live births was a limitation to the study. If having a sensitivity to hormone reduction is a biological factor of PPD, then any woman who has had a pregnancy resolved is at risk of PPD not simply the women who are primary caretakers. Furthermore, women who have miscarriages, have given their babies up for adoption, or had still births are a greater risk of vulnerability and the possibility of being victims of domestic abuse. The age of the data was also a limitation to the study; however, it is the most current data set that includes PPD questions and the risk factors.

Significance

Researchers have already determined the risk factors that affect PPD. Research has also shown that hormonal loss after birth has a significant role in the mother's mood. It is unclear which risk factors pose the greatest threat to mothers who have PPD. In this study, I help to explain this gap and provide future researchers with opportunities to explore. Potential contributions of this study included providing practitioners with additional education and knowledge to improve the quality of life in postpartum mothers. Furthermore, the contributions the research and results from this study provided a better opportunity for earlier detection of PPD, therefore advancing the practice of obstetricians and those involved in postpartum care.

Social Change

Results from this study may promote positive social change by addressing the gap in literature and providing medical and mental health professionals with the education

needed to promote a better screening process for PPD during the perinatal period. The study may also provide current wrap-around services with education so that they can provide services to parents who have PPD, such as social support, shelter assistance, and education on intimate partner violence.

Summary

PPD is a debilitating disorder that occurs in 20% of women (Davenport, 2012).. Mothers who suffer from PPD have an increased risk for poor infant attachment, functional impairment, suicide, and infanticide (Katon et al., 2014; Dennis et al., 2012). I discussed the background and types of PPD to provide insight into the potential effects of PPD on the mother and infant development. I addressed the gap in research and I also stated the problem in this chapter. The purpose of this study was to explore the social and relational factors that predict PPD symptoms. I addressed the potential implications that could result from the research findings. Biopsychosocial theory and the feminist theory served as the theoretical foundations for this study as it relates to the interactions between the biology of PPD and the social and psychological effects thereof as well as the influence of the feminism on the cognition and perceptions of others on mothers who have PPD.

I used a nonexperimental quantitative method to collect and analyze data. A secondary data set provided the predictor and criterion variables used to conduct the study. I assumed that the participants were the primary caretakers for their infants. The research results of this study provide medical and mental health practitioners with knowledge that will provide better screenings tools, earlier detection of PPD, and

wraparound services that prevents cognitive and emotional delays in infants and young children.

In Chapter 2, the literature review, I discuss the history of PPD, the etiology of PPD, and the effect of reproductive hormones on women after pregnancy. I also discuss risk factors and their effects on PPD. I explain the theoretical and conceptual framework in greater depth. In Chapter 3, I provide the research methods, research question, and hypotheses that I tested. I then provide analysis used to test the hypotheses. In Chapter 4, I discuss the research results, and in Chapter 5, I discuss the summary and conclusions.

Chapter 2: Literature Review

Introduction

Effects of PPD on the families and the community can be numerous. If left untreated, the condition may result in dangerous behaviors including suicide and infanticide (Spinelli, 2005). The potential for offspring to develop mental health disorders during childhood, such as ADHD or childhood depression, are secondary to PPD (Mulcahy et al., 2010; Zajicek-Farber, 2010; Logsdon et al., 2006). Screening tools are readily available and designed to identify PPD in new mothers, but due to the lack of guidelines, poor insurance, and reluctance to seek help, PPD often goes undetected and untreated (Bobo et al., 2012; Zajicek-Farber, 2010). There are not, however, tools designed to identify risk factors in the perinatal period, thereby identifying mothers at risk for PPD. This could be part of an early detection program aimed at improving quality of life.

The challenge in the current research is that each researcher has focused on one risk factor and the subsequent findings, as in the research by Curtis, Corman, Noonan, and Reichman (2014) on homelessness in postpartum mothers. Although this research is critical to understanding PPD and its influence on the family dynamic, particularly child development, it fails to account for PPD in women with higher economic status and isolates all other variables (Stein, Malmberg, Sylva, Barnes, Leach, & FCCC, 2007).

Researchers have identified many psychosocial risk factors as predictors of PPD. However, it is unclear which of these is the strongest predictor of PPD. As such, the aim of this study was to find which factors are the best predictors of PPD by using a binary

logistic regression analysis. Exploration of these factors can generate future research in modifying screening tools to fit the needs of the risk factors. Furthermore,this research can create social change by providing additional services and programs geared toward creating a better family environment without regard to socioeconomic factors. Exploration of this issue along with an understanding of the hormonal influence on PPD creates a better understanding of mother and infant experiences after birth.

Major Sections of the Chapter

This chapter is divided into the following sections: a review of the academic databases and search terms that explain how this topic was researched, the theoretical foundation that motivated this study, and a review of the history and etiology of PPD that explains when PPD began to be recognized. I examine risk factors and how they affect women who suffer from PPD. I also assess the role that hormones play in PPD, and, finally, I discuss cultural awareness and its importance in PPD.

Literature Search Strategy

I accessed several academic databases to conduct this literature review. The primary databases that I used were the EBSCO databases PsycINFO and MEDLINE. The search terms include *miscarriage*, *hormones*, *estrogen*, *depression*, and *etiology of PPD*. Other search terms included *IPV*, *domestic violence*, *mother/infant attachment*, and *developmental delays in children*, *socioeconomics*, *death*, and *incarceration of an intimate partner*. I also used Google Scholar to explore PPD and risk factors, IPV, and socioeconomic status. Information for the literature review also came from government databases such as the CDC. Search terms used for this portion of the search were

miscarriage, risk factors, adoption, IPV, domestic violence, race, and ethnicity. I reviewed literature published from the years 1980 through 2016

Theoretical Framework

Two theories serve as the foundation for this study, the biopsychosocial approach and feminist theory. Contrary to the majority of psychological studies published on PPD with acknowledgement to the contribution of hormones on PPD many other studies exist with extant support for the hypothesis that external factors are causal in the maintenance of PPD (Leuner, Fredericks, Nealer, & Albin-Brooks, 2014). This study asserts that there are different origins of PPD; namely biological factors and that PPD is more easily explained by the biopsychosocial model. This model, as explained by Melchert (2011) allows clinicians, researchers and other stakeholders to conceptualize experiences in terms of the interaction between biological (hormones), psychological and social influences (violent and nonviolent risk factors). This relates to the present study in that biology (hormonal shift) influences a postpartum woman's psychology (her self-concept, ability to cope with daily life issues and stressors) and ultimately her social environment (relationships with friends, family members, other citizens and others).

Ross et al. (2004) stated that PPD can best be accounted for by incorporating a biological and psychological approach to conceptualizing this illness. Since women have sensitivity to the drop in hormones after pregnancy has ended, thereby affecting them in a psychological way, significant mood changes may occur, similar to those experienced in people diagnosed with clinical depression. As such, there is a need to integrate the findings of the current literature with the developmental approach used to design the

primary research tool for this study. Furthermore, it appears that predisposing factors such as low socioeconomic factors, partner-related stressors, and traumatic events occurring prior to giving birth or becoming pregnant are further complicated due to the hormonal imbalance, thus increasing the symptoms of PPD (Leigh & Milgrom, 2008).

For the last 40 years, biopsychosocial researchers have posited that biological influences have affected individual psychology while acknowledging that people exist as social beings that make up a complex societal system (Melchert, 2013; Williams, 2013; Glasser, 2012; Meyer & Melchert, 2011; Bronfenbrenner, 2005). Therefore, a model that allows for an influence of biological, psychological and social perspectives provides a solid, comprehensive foundation for this research. A breakdown of the factors in the biopsychosocial model as they pertain to PPD and the variables for this study are given as follows:

Biological Aspects

Demographics. Kaslow et al. (2007) determined that biological factors are salient to whole-health research. Demographics of focus for this study include age, gender (women of reproductive age), genetic history, in this case, familial history of mental disorders, and development of the mother.

Hormones. As Kaslow (2007) noted, exploration of the role reproductive hormones have in the production of PPD is relatively unknown. However, Shapiro, Fraser, and Seguin (2012) reported that it is the hormonal changes that occur at the pregnancy resolution, or the biological marker that set PPD apart from regular depression. Sex hormones, such as estrogen, have many uses in the body including the

regulation of brain activity ranging from development to aging, modulation of both mood and memory and additionally estrogen greatly influences the mental state of women (Le Saux & Di Paolo, 2005; Lu, Eshleman, Janowsky, & Bethea, 2003). Research findings support that the decrease in the ovarian hormones affects neurotransmitters that regulate mental health disorders such as serotonin and dopamine. A decrease in the serotonergic functions, particularly, the 5-HT receptors, is the most detrimental for mental health function (Le Saux et al., 2005). The decrease in 5-HT receptor functioning has been shown have a causal link to depression. A study by Lu et al. (2003) conducted on 20 overectomized female Rhesus monkeys showed a correlation between the decrease in serotonergic functioning and low estrogen levels. This study provided an understanding of the role estrogen has in mood disorders believed to be caused by serotonergic dysfunction during reproductive events such as menstruation, the postpartum process, and menopause. This study results further suggested conditions such as PPD, premenstrual syndrome (PMS), premenstrual dysmorphic disorder (PMDD), and depression during menopause could be reproductive-specific disorders, therefore in need of a research.

In a separate study conducted by Glover al., (2013) women between the ages of 18 and 55 who had previously reported depressive symptomatology during their menstrual cycles were surveyed. The results of the study also indicated that during the periods of low estrogen levels, depression, anxiety, and fear-related behaviors tended to be higher when compared to phases with high estrogen levels. Therefore, these findings also suggested that low-estrogen phases, such as the postpartum period pose a greater risk

for women. Glover et al. (2013) suggested that is necessarily important to pay special attention to women in fluctuating hormonal cycles.

Estrogen is an important hormone and has many uses in the body. It regulates brain activity ranging from development to aging. It modulates mood and memory. In addition, estrogen greatly influences the mental state of women (Le Saux & Di Paolo, 2005; Lu et al., 2003). Research has found that the decrease in the ovarian hormones affects the neurotransmitters that regulate mental health disorders such as serotonin and dopamine. A decrease in the serotonergic functions, particularly, the 5-HT receptors, is the most detrimental in mental health function as it is linked with depression (Le Saux, & DiPaolo, 2005). A recent study by Buttner Mott, Pearlstein, Stuart, Zlotnick, &O'Hara (2013) also support that the interaction between serotonin and estrogen are responsible for PPD and further speculate that there is a link between premenstrual syndrome and PPD.

Sex hormones guide the maintenance and alterations that occur to the woman's body during pregnancy (Carr & Blackwell, 1993). Furthermore, researchers theorize that these hormones affect the nervous system. Sexual reproductive hormones vary the greatest during pregnancy than at any other time, with estrogen being the most influential which is produced in the ovaries and the placenta during pregnancy (Speroff et al., 1994; Stanczyk, 1997).

Women may be more susceptible to depression after the birth of the baby due to the hormonal fluctuation (Bowen et al., 2012; Buttner et al., 2013). Estrogen levels are measured at their highest in the early stages of pregnancy, the time during which the

majority of miscarriages and/or abortions occur (Speroff et al., 1994; Stanczyk, 1997; Bowen et al., 2012). During the second trimester, estrogen production stabilizes, and then begins to increase again during the final trimester, with a rapid increase before giving birth. Following parturition, estrogen levels dramatically decrease and continue to decline over the next two weeks. Estrogen production is at the highest point for woman as she approaches labor (Speroff et al., 1994; Stanczyk, 1997). In contrast, there is no other time in a woman's life when hormones are lower than during the postpartum period (Speroff et al., 1994; Stanczyk, 1997).

PPD effects a much broader group of women than previously indicated in the research. PPD can affect any woman who has sensitivity to the hormonal secondary to pregnancy resolution. Therefore, any woman whose pregnancy has ended is at risk for PPD, including women who have had spontaneous and elective abortions, stillbirths and those who choose adoptive care. Because research findings have focused on the traditional population for PPD, women in this nontraditional group fail to receive proper care (Georgaoplos et al., 2001). Furthermore, they are at greater risk for IPV tend to be in a lower socioeconomic social status, and have a deficit in perceived social support. In the United States PPD care, according to published reports, is lacking in comparison to the available resources in other countries. It has been posited that untreated PPD in the United States is particularly problematic due to the reduced usage of available PPD screening tools (Georgaoplos, et al., 2001). Because screenings of PPD are most commonly administered for mothers during well-child visits there is a clear gap in the assessment process with a glaring absence of quality care for women who do not have a

socially desired outcome to pregnancy (i.e. birth of the child and retention of custody for the mother).

Skalkidou, Hellgren, Comasco, Sylven, Porpmaa (2012) describe PPD as a condition that occurs anywhere from four weeks postpartum to twelve months postpartum with co-occurring hormonal and psychosocial events happening that sets PPD apart from all other forms of depression at other times in a woman's life. This is in part due to the hormonal reaction physiological effects.

Psychological Aspects

Intimate partner violence: IPV is a risk factor that not only affects the health of the mother but also can affect the health of the children. Social factors in the aspect are perceived support and socioeconomic status. According to a study by Ahmed et al. (2006) approximately 10% of U.S. perinatal women experience violence at the hands of their partner (IPV). Women who report domestic violence also report a lower prevalence of self-esteem issues; have a lower socioeconomic status, and lower education levels (Wu, Chen, & Xu, 2012). IPV not only affects the development and risk of PPD, but is also correlated with childhood development issues. Certain, Mueller, Jagodzinski, and Fleming (2008) report that violence in pregnant women may affect infant birth weight, increase the risk of miscarriage, and increases mental health issues. While the frequency of perinatal violence varies in research studies, it is a common assumption that IPV is a major risk factor for PPD.

According to the Center for Disease Control (CDC) (2008) mothers who report having a lower socioeconomic status are more susceptible to violent relationships.

Domestic violence is an occurrence that spans over many cultures, social status's, and has serious psychological and medical implications (Waldman-Levi, Finzi-Dottan, & Weintraub, 2013). When added to the postpartum equation, the risk of PPD is tenfold (CDC, 2008). Waldman-Levi et. al (2013) include that women in violent relationships further influences the emotional availability of the mother for her children; therefore, increasing the risk of mental illness and developmental problems in children (Waldman-Levi, et al., 2013).

IPV complicates depression, stress, and affects the self-esteem of those involved. Children of IPV mothers are more likely to develop social, emotional, and cognitive problems (Valentine et al., 2010). Violence in homes increases the risk of infant health problems and mortality. IPV during pregnancy have a greater chance of developing PPD symptoms than mothers who were not exposed to IPV. The relationship between IPV and PPD needs further exploration, however it has been found that women who are victims of IPV tend to have the same risk factors in common with women who have PPD such as meager quality of relationship satisfaction, perceived low social support, and low socioeconomic status (Valentine et al., 2010).

Emotional distress. Emotional distress during pregnancy, and in the postpartum period, heightens the risk of PPD (Tanner-Stapleton, Schetter, Rini, Hobel, Westling, Glynn, & Sandman, 2012). Many mothers experience depression and anxiety simultaneously, which creates significant impairment for the mother with a newborn child. Furthermore, emotional distress leads to fussy babies that are harder to console (Tanner-Stapleton et al., 2012). PPD after childbirth defies the cultural norm of mother's

having primary responsibility for their offspring (Terry, 2014). Women experience psychological distress when they feel they cannot live up to this norm, therefore complicating the already present symptoms of PPD (Shields, 2005; 2014). Feeling that parenthood is demanding or does not live up to their personal expectations also complicates PPD by increasing guilt and decreasing life satisfactions (Shields, 2005; Terry, 2014).

Financial or Economic Risk Factors. A study conducted by Secco, Profit, Kennedy, Walsh. Letourneau, and Stewart (2007) examined socioeconomic status in adolescent mothers as a determinant for PPD symptoms. Low-income mothers are at an increased risk for IPV and PPD (Faisal-Curry, d'Oliveria, Schraiber, &Lopes, 2013). Mothers in low-income brackets generally have chronic stressors; have less than ideal living conditions, and transportations issues. (Segre, O'Hara, Arndt, &Stuart, 2007). They may be faced with eviction notices and are more likely to have poor coping skills. They are also at an increased risk for substance abuse issues (Segre et al., 2007). Furthermore, these women may report an increase in PPD symptomology (Segre et al., 2007). Low income affects maternal and infant well-being due to lack of proper health care (Kaslow et al., 2007).

Partner-Related Risk Factors: Studies such as the Fragile Families and Child Wellbeing Study researched paternal support on the family and the affect it had on the mother. (Reichman, Teitler, Garfinkel, & McLanahan, 2001). Low social support during pregnancy and the postpartum period has been shown to affect the postnatal mood and the mother's self-esteem (Milgrom et al., 2007). Partner-related stressors and perceived

social support are also risk factors thateffect PPD (Banker & LaCoursiere, 2014). Hormonal factors may cause the mother to be highly sensitive to stress and criticism. Unfortunately, this distress leads to higher divorce rates and increases the chances of depression in the mother (Banker & LaCoursiere, 2012; Kathree, & Peterson, 2012; Gjerdingen, Crow, McGovern, Miner, & Center, 2009). Banker and LaCoursiere (2012) determined that lack of support, the distorted perceptions, and partner-related stressors each affect the outcome of the other further affecting PPD and the stability of the mother.

Traumatic Risk Factors: Homelessness, incarceration, and death are considered traumatic events and affect the mother's ability to emotionally connect with her infant and increase the stress on the partner. Mothers who have incarcerated partners are often overwhelmed by responsibilities of parenting and the stigma of having an incarcerated partner. Furthermore, they must also cope with the change in their economic state and becoming the head of household (Cooke, 2007).

According to a study by Curtis et al. (2014) residential instability and PPD may be bidirectional, each affecting the other. Other aspects that affect a person psychologically would be coping skills, personality, motivation, perceived social support, and family dynamics (Kaslow et al., 2007). Many states are now participating in national studies to determine the amount of prenatal and postnatal stressors in the mother's life so that they may reduce infant and mother mortalities (CDC, 2008). The questionnaire screens for these psychological components of PPD providing a greater chance of early treatment. In addition, wrap-around services can be made available to prevent deleterious effects from the PPD.

Social Aspects

Social support. Stapleton et al. (2012) state that positive experiences in the peri- and postnatal periods are generally a result of perceived strong social support. Poor social support is linked to an increase in PPD symptoms (Stapleton et al., 2012). Dissatisfaction of interpersonal relationships creates intimacy barriers, which influences personal expectations. Tanner-Stapleton et al. (2012) further speculate that partner dissatisfaction and low social support increases observed fear in infants and makes them harder to console.

Boothe, Brouwer, Carter-Edwards, Ostbye, (2011) determined that poor social support is associated with poor eating, a lack of physical activity, and lower socioeconomic status. Furthermore, this leads to low self-efficacy in the mothers (Boothe et al., 2011).

According to Kaslow et al. (2007), other components of the social aspects include interactions with the physical environment, marital status, and age. Culture, education, legal issues, and external stressors are also included.

Kaslow et al. (2007) stated that psychological disorders hold all elements of the biopsychosocial model that there is an equal interaction between the biological, social, and psychological elements. Furthermore, Kaslow et al. (2007) add that researchers and health care workers alike can benefit from using the biopsychosocial model due to the multilevel, multisystem, and interdisciplinary approach that allows one to provide a well-balanced approach to health care and research.

Kaslow et al. (2007) further breaks down the aspects of the model into each individual aspect. Kaslow at al. (2007) views factors of the biological aspect as mental health acquired by a chemical, hormonal, or structural changes in the brain. Other aspects would include age, gender, and race. For the purpose of this study the biological variable is depression. Confounding variables would be the age, gender, and race. Kaslow et al. (2007) views factors in the psychological aspect as behaviors that affect health and coping skills.

Chapter 3 provides the research methods and use of the secondary data set for this study. A detailed description of the design, purpose, and population sample are given. All associated hypotheses and plan for analysis are provided, in addition to the protection of participants, and ethical considerations.

Feminist Theory

According to an article by Wilgosh (2001) marriage and family are viewed as symbols of the female archetype. This cultural norm portrays motherhood as the ultimate, positive image, a standard by which mothers will measure her abilities and worth (Terry, 2014). The myth that mothers are elementally loving and understanding is still the predominant introject promoted in religion, communities, families, magazines, and in television. These societal expectations of women may have consequences on the physical and mental wellbeing after the resolution of their pregnancies (Terry, 2014) and it is pervasive. For example, throughout the years, many American pop-cultural references have normalized submissive behavioral images of women. June Cleaver from the popular 60's television show *Leave it to Beaver,* portrayed a woman who always looked her best,

never argued with her husband, had dinner on the table as soon as her husband got home and her house was always in order. She seemed to have no life outside of her home. She appeared to rarely be frustrated with her children. Another example is Carol Brady from the *Brady Bunch.* While, television shows have evolved in some ways from this view (Wilgosh, 2001), society has not. Shows such as Modern Family that have moved more towards airing the nontraditional family elements still promote a conservative view of motherhood and care giving. Childrearing, as noted in the above examples, is promoted as a primary identity-defining role for women. This attitude towards a proper sex role creates a negative outlook on women who suffer from depression, labeling them as lazy or a bad mother (Wilgosh, 2001). Such a view lends to the erroneous idea that PPD is an excuse to neglect parental responsibilities. As was the case for Andrea Yates who had previous psychotic episodes, had been told that she cannot be alone with her children, and had attempted suicide all prior to drowning her 5 children. Despite showing signs of depression and psychosis after the birth of her first baby, numerous hospitalizations, and advice from their psychiatrist, her husband encouraged her to continue having pregnancies and minimized her need to have around the clock care because he did not want her to allow others to fulfill her motherly duties (McLellan, 2006).

Tom Cruise, the actor, is famous for mocking PPD in his May 25, 2005 interview on NBC's Today Show with Matt Lauer. During this interview, he made comments about Brooke Shields struggles after the birth of her first baby. According to Cruise,

> when you talk about postpartum, you can take people today, women, and what you do is use vitamins. There is a hormonal thing that is going on, scientifically,

> you can prove that. However, when you talk about emotional, chemical imbalances in people, there is no science behind that. You can use vitamins to help a woman through those things (Cruise, 2005).

This quote depicted the public's view and attitude towards PPD. It failed to take the feminist, cognitive behavioral theory and biopsychosocial approaches into account when determining one's actions.

As mentioned in the previous chapter Brooke Shields and Andrea Yates very publicly battled PPD. Shields (2005) felt that she should have been the nurturer, the care-giver and after discussing it with her husband decided against asking for help. Shields wrote that not only had she and her husband moved across the country just days prior to giving birth, but her father passed away the day before her daughter was born. Shields was overcome with guilt and exhaustion, however choose to handle the care of her daughter on her own when she felt that what she really needed was sleep (Shields, 2005). She later would discover that her inability to nurture failed to meet her expectations of motherhood and lead to an internal conflict that not only increased her depression, but also left her feeling ashamed and alone (Shields, 2005).

Often time's misconceptions regarding mother hood and the woman's role leave mother's feeling alone and helpless (Zolovska & Bursztajn, 2005). This affects not only the mental health of the mother, but also affect the way she interacts with others socially. Andrea Yates believed she was a bad mother, due to her inability to psychologically care for them and stated "cartoon characters told her she was a bad mother" (Debyshire, 2001; McLellen, 2006). She felt they were not developing properly and were marked by Satan

(McLellan, 2006). She felt that killing them would save them from hell and a life of torture (McLellan, 2006). Furthermore, the myth of women being the primary caretakers may also prevent supportive partners from accepting responsibility for infant care and being a supportive partner (Gao, Chan, & Mao, 2009).

Conceptualization

There are approximately 6.39 million pregnancies in the United States every year (National Campaign, 2014). Approximately1.6 million pregnancies ended in spontaneous abortions, while an estimated 1.22 million ended with elective abortion. This leaves an approximate 4 million in live births (National Campaign, 2014). Ten to 20 % of those women will suffer from depression upon the termination of their pregnancy (National Campaign, 2014). PPD can be conceptualized in many different directions, however the idea for this study will be that PPD is conceptualized as one that is affected by many factors, namely personal beliefs by self and the partner that mothers are nurturing and loving, therefore should be the primary caretakers, which is the feminist view. These beliefs prevent social support from others, and negative images in themselves if they fail to live up to the expectations of motherhood. Furthermore, it is conceptualized that the biological factors of the hormones are predicted by the psychosocial variables or risk factors that occur due to circumstance or lifestyle.

Women often fantasize about becoming mothers. As stated previously, motherhood is conditioned in them from an early age. Girls are given baby dolls and strollers for gifts. They push them around, mimicking what they see their mothers do. Women are thought to be the keystones in families (Wilgosh, 2001). Anxiously they wait

to cradle their newborn. Only, for some that day brings sadness, guilt, and deprecating thoughts (Shields, 2005). Moments when they cannot get out of bed, they have difficulty connecting with the life they created; they may even have suicidal ideation because they feel they fail to live up to their own expectations (Zahn, 2006; Shields, 2005).

For some failure to become mothers due to miscarriage may cause psychotic episodes and violence, as is the case from some. Angela Maler became so despondent after having repeated miscarriages that she poisoned her sister in-law and best friend when they became pregnant causing them to miscarry as well (Edwards, 2013). She stated that she could not watch her friends and family have a baby when hers were dead. In July 2009, Julia Corey beat her 23-year-old neighbor, who was 8 months pregnant, to death, took the baby and passed her off as her own (Schworm, 2014). Corey had miscarried in April of that year. These women became severely depressed after their miscarriages because they were unable to achieve motherhood and resorted to violent means to achieve their dreams (Schworm, 2014; Edwards, 2013).

Based on the research, the hormonal fluctuation that occurs secondary to pregnancy loss (regardless of the reason for loss; pregnancy delivery, spontaneous abortion, elective abortion, etc.) potentially has a strong influence on the woman. The phases of estrogen and the effects it can have on woman during specific points in the menstrual cycle, after pregnancy, and during menopause give evidence that estrogen strongly influences mood during the reproductive years (Glover et al., 2013). This heightened when risk factors are present (Glover et al., 2013).

Key statements

..... Several key terms are used throughout this dissertation. The following definitions are provided for the reader to have an understanding of how terms are conceptualized and used.

Hormonal fluctuation: refers to the spike and dip of estrogen levels in women during the reproduction phase (Buttner et al., 2013).

Estrogen: female steroid sex hormone secreted by the ovaries and is (estrogen is only one hormone) responsible for female characteristics such as birth, menstruation, and the female reproductive cycle (Buttner et al., 2013).

Neurotransmitters: a chemical released in the brain that communicates information between cells (Shapiro, Fraser, & Seguin, 2012).

Serotonin: a neurotransmitter that interacts with estrogen during the female reproduction cycle (Buttner et al., 2013)

Dopamine: a neurotransmitter said to be responsible for mood in PPD. Dopamine aids in the brain reward pathways and steadies movement and emotion. Underprovided dopamine results in Parkinson's disease and they may be more prone to addiction, while too much dopamine may result in Schizophrenia (Smith, Piasecki, Weera, Olszwicz, & Lonstein, 2013).

Serotonergic functions: the process of releasing and the re-uptake of serotonin

5-HT receptor: a serotonin receptor also known as 5-hydroxytryptamine receptor. (Shapiro, Frasier, & Seguin, 2012)

Overectomized: estrogen deficient (Lu, Eshleman, Janowsky, & Bethea, 2003)

Parturition: the process of giving birth (Lu et al., 2003)

Pregnancy resolution- a term used throughout this dissertation to indicate the ending of gravidity, or pregnancy (Rush-Wilson, 2014).

Scope of PPD

PPD is the most frequent recurrent complication following childbirth, yet half of all episodes are unrecognized and, therefore, undiagnosed (Banker & LaCoursiere, 2014). PPD has been diagnosed as early as the 4th century B.C., when Socrates called it the "milk disease" (Miller, 2002; Nager et al., 2005). However, it remains misunderstood and under-diagnosed by many mental health providers and physicians (Josefsson, 2003). Researchers continue to search for PPD etiology in an effort to understand how women and their families are affected. While light has been shed on the biological aspects of PPD and on the risk factors as the psychosocial variables that influence the PPD symptoms, more research is needed (Banker et.al, 2014; Valentine et al., 2011). Even though recognition for PPD began centuries ago it is still a taboo for many women with myriad factors comprising why this condition continues to be under-diagnosed. Banker et. al. (2014) examine many risk factors, as an explanation for PPD and an attempt to further understand postpartum experiences.

Antenatal stress is thought to inadvertently affect PPD. Research by Sandman, Davis, Buss, and Glynn (2012) showed that psychobiological stress not only affects postpartum maternal behavior, it also affects fetal development, which can create additional complications in postpartum depressive mothers. Antenatal exposure to stress also changes the hormones levels in the hypothalamus, which determines their ability to

fight depression (Brummelte & Galea, 2010). Furthermore, antenatal stress disrupts the maternal infant bond that is vital in infant temperament, development, and the mother's psychological view of herself (Kingston, Tough, & Whitfield, 2012).

Another approach for understanding PPD is to examine interpersonal relationships. The postpartum period is a critical time for first time parents and often affects interpersonal life (Gao et al., 2009). Supportive partners cushion the adverse effects during the postpartum period. Without available social support or a deficit in social support mothers may lack the ability to cope with motherhood and other risk factors that occur whether due to circumstance or lifestyle (Gao et al., 2009). Lack of social support has been highly correlated with PPD and cognitive development in children (McManus & Poehlmann, 2012). Mothers who have incarcerated partners and single parents have a lower perception of social support and are at a greater risk for PPD (Nicole et al., 2007). They are also the least likely to reach out for help or to report PPD (Abrams &Curran, 2007). Partner-related stressors are also linked to mothers who report a greater dissatisfaction of parenting (Flanagan, Coop-Gordon, Moore, & Stuart, 2015). However, further research needs to be done.

Parental satisfaction is an emotional stressor often overlooked in PPD diagnosis and research. Recent research has found that mothers who report lower satisfaction with parenting also report a higher level of PPD (Cohen & Semple, 2010). It is common for women to adopt an identity of being a loving nurturing caregiver however, the natural dip in a mother's efficacy as a parent threaten that role (Zayas, Jankowski, & McKee, 2005). The arrival of parental responsibilities after childbirth causes mothers to reevaluate

behavior and attitudes leading to redefine who they are. Some mothers find that infant care is not as rewarding as they idealized; therefore, they become overwhelmed by guilt and depression (Terry, 2014; Zayas et al., 2005). This may be affected by socioeconomic factors, lifestyle choices, education, and age or an innumerable amount of other factors. Little research has been done on parental satisfaction and the role in plays in PPD.

Violence at the hands of an intimate partner (IPV) has adverse effect impact on the emotional and physical health of the mother and the infant. Women who suffer from IPV often experience more stress, have less access to medical care, and are less satisfied with life (Flanagan et al., 2015). IPV occurs in approximately 20% of couples and is estimated that 15% of pregnant women have been victims of IPV at least once (Valentine et al., 2011). To date few studies examine the effects of IPV on PPD therefore there is little understanding (Beydoun, Beydoun, Kaufman, Lo, & Zonderman, 2012; Valentine et al., 2011). Further research in this area can help to deepen the understanding of circumstances surrounding IPV and PPD.

Despite the studies assessing stressful life events and antenatal stressors on PPD outcome, PPD often goes under-diagnosed and undertreated (Comasco, Papadopoulos, Oreland, Sundstrom-Poromaa, & Skalkidou, 2011). One salient factor contributing to under-diagnosis is that there are no standardized guidelines for screening women for this condition. Questions remain as to how often and when healthcare practitioners should screen for PPD (Georgiopoplos et al., 2001; Gjerdingen et al., 2009; Sheeder, Kabir, & Stafford, 2009). In addition, current PPD screening scales focus on depression and anxiety symptoms, while neglecting risk factors and other essential causes of PPD.

Further, since there is no chapter in the DSM-5 with a focus on PPD medical practitioners and mental health providers may often be unsure about diagnosing PPD as there are no clear separations between PPD and the baby blues or adjustment issues and PPD from the loss of a pregnancy (Adams, 2003; Beck, 1992 & 1995a; and Cox, Connor, & Kendell, 1982). Secondly, women may often be reluctant to seek help from medical and mental health practitioners due to societal stigma and fear of losing their children (Miller, 2002; Terry, 2014).

PPD is a serious and sometimes life threatening disorder with a variety of symptoms that cause behavioral disturbances (Gjerdingen, Crow, McGovern, Miner, & Center, 2009; Redshaw & Henderson, 2013). PPD increases marital and family problems. Women are left in a vulnerable state, are often without social support, report dissatisfaction in intimate partner relationships (Valentine et al., 2011). In addition, many health care providers fail to screen women who have recently had a pregnancy loss for PPD (Bobo, Wollan, Lewis, Bertram, Kurland, Vore, & Yawn, 2014). This type of behavior diminishes the seriousness of PPD and closes the door to communication for women who may suffer. Other Risk factors associated with PPD are; the age of the mother, education level, familial support system, events of the birth, previous mental health history and the infant itself (Shapiro, Fraser, & Seguin, 2012). Current research suggests that poor nutrition is linked to PPD causing an imbalance in neurotransmitters and a decrease in omega 3 fatty acids are also risk factors associated with PPD (Shapiro et al., 2012). Shapiro et al. (2012) have shown in research that Omega 3 fatty acids decrease the depression because they directly affect the neurotransmitter reuptake.

Furthermore, when mothers are breastfeeding Omega 3 fatty acids are transferred to the infant through the breast milk, which depletes this element from the mother and increasing the risk for PPD in mothers who have poor nutrition (Shapiro et al., 2012).

Complications of PPD

Generally, primary care physicians and obstetricians do not evaluate the postpartum woman for depressive or psychotic symptoms despite the fact that screening tools are available, (Gregiopolous, et al, 2001, Gjerdingen, et al,). However, the screening tools are rarely used due to financial or stigmatic barriers (Bobo et al., 2012). This leaves the responsibility of identification and treatment of the mood disturbance, and its degree of severity, to the woman. Multiple factors are cited as failure to report including fear and lack of PPD education (Kantrowitz-Gordon, 2013). Postpartum women may be afflicted with any of the postpartum disorders; such as PPOCD and postpartum psychosis, however, PPD is the most common of all (Buttner et al., 2013). Knowledge of life occurrences that may also act as risk factors during the pre and perinatal periods can help researchers fully understand PPD and the need to screen for the earliest possible detection of PPD. It is hopeful that findings from this study will provide insight and understanding, thus allowing for further research and screening development as is addresses the gap of determining the strength of violent and nonviolent risk factors when determining PPD.

Postpartum Populations Vulnerable to Risk Factors

The physical and emotional changes that occur during pregnancy can be a time of extreme stress for some families. This assailable period can occur anywhere in the year prior to conception to one year after pregnancy resolution (Van Parys, Verhamme,

Temmerman, & Verstraelen, (2014). Violent and nonviolent risk factors has been reported in 3to 30% of women around the time of conception (Van Parys et al., 2014). Many of the risk factors interlay with the nontraditional population of postpartum women, therefore making them susceptible of IPV (Valentine et al., 2011). Often consideration is not given to women who had spontaneous or elective abortions, stillbirths, and have given the baby up for adoption. Currently, research on PPD focuses on mothers who are also the infant's caretaker (Nhu et al. 2009).

Miscarriage. As stated earlier spontaneous abortions, or miscarriages, account for approximately 15 % of pregnancy termination (Swanson, Chen, Graham, Wojnar, & Petra's, 2010). Lack of spousal or partner support is a major concern in postpartum women who have miscarried. Internalization of the miscarriage affects the emotional balance and the economic changes results in heightened stress and is risk factors for PPD (Van Parys et al., 2014). They may have difficulty getting out of bed, experience anhedonia, and in extreme cases, woman have even murdered pregnant women in order to have possession of the newborn infant (Swanson et al., 2010).

Because PPD can be so severe and is rarely considered in women who have had miscarriages, dysphoric symptomology in women who have experienced pregnancy loss is not often considered as a possible case of PPD (Swanson et al., 2010). Lack of societal recognition confounded with the loss of pregnancy increase the chances of depression and anxiety. In addition, the woman' ability to function decreases leaving her almost incapacitated. Spontaneous abortions have an adverse influence on future events in the woman's life, particularly if the woman internalized the miscarriage. This is rather

alarming, considering miscarriages occur in a proximately one half a million women in the United States per year (Neugebaur, 2002).

Birth mothers. For many mothers choosing to place their infant in an adoptive home provides relief and is seen as the ultimate act of love. They are facilitating the infant having a safe and loving home which may be something they believe they are unable to do at the moment and is a decision that may take a great deal of effort and time to make. After the mother surrenders her baby to the adoption process, it is normal to feel anger, grief, denial, and shock over the loss. Because these emotions are expected in the birth mother, and assumed to be secondary solely to the social process of choosing adoption for one's child, many times these mothers are not screened for the biologically influenced condition PPD (Child Welfare Information Gateway, 2013). Research has focused for so long on mothers who have given birth, and raise their children that PPD has become associated with mothers who have their infants with them. This population may be more prone to lower socioeconomic factors, younger age, lower education, low self-esteem, and minimal social support which all have been shown to affect PPD. Birth mothers are often left without direction or a voice. These women are also more likely to be victims of IPV because they often have less education, a lower socioeconomic status, and less of a support system. (Burke, Lee, & O'Campo, 2008, Pallito, Campbell, & O'Campo, 2005) Secondly, because the medical team expects some amount of depression and grief with this population, they fail to use the screening tools available for PPD assessment during their six-week postpartum check-up (Burke et al., 2008).

This population is often more susceptible to socioeconomic factors and the inability to provide for the needs of one's self and their unborn child. It is important to include them when studying PPD as they give more clues and insight into the biological aspects of PPD as well as which risk factors are more prominent.

Summary and Conclusions

There is a significant gap in research regarding PPD and risk factors. The relationship between the risk factors and PPD appears to be bi-circular each affecting the other and each often overlap the other. Little research has been done considering the effect of IPV on PPD. Major research only involves those women who have their infants in their homes with them. The biological aspects of PPD have been mostly ignored, although certain events are giving PPD more attention and research. PPD needs to be viewed as more of a reproductive disorder than as a component of major depression, due to the adverse effect is has on the woman, while considering how the risk factors increase PPD symptoms and make them vulnerable for IPV.

Furthermore, this study hopes to dispel the norm that society has on woman in general. Great pressures are placed on woman to perform and behave in a certain way. These views do not allow for depression or aliments that cause her to be incapacitated. Instead society deems her as indolent, faking, or crazy. Help is not readily available because the proper screening tools are not being utilized. Physicians and mental health professionals fail to recognize PPD in the nontraditional population of women because they are expected to show some amount of grief. Therefore, they are not even considered PPD candidates.

The goal was to create a foundation for further exploration and detection of this problem to ultimately assist victims and families, to open up wrap around services specifically for postpartum mothers who have been in IPV relationships that will help the mother with resources to provide a better future for their families and to create pre-screening services that will assess the amount of risk factors the mother has.

PPD is a serious disorder with grave consequences if left untreated. PPD needs to be viewed as a real disorder. More preventative tools should be used to identify PPD in woman early in the postpartum period. Serology tests should be developed to distinguish hormone levels. Most importantly, all women whose pregnancies have terminated by whatever means should be considered for PPD.

Due to the hormonal fluctuation during and after a pregnancy and the sensitivity woman have to that fluctuation, woman who have had spontaneous and elective abortions, stillbirths, and given their infants up for adoption are equally at risk for PPD and IPV, the same as women who are raising their babies.

Chapter 3 lays out the study and explains the methodology intended to use. Research design and rationale for the study are given in greater detail. It explains the population used in the FF Study and any exclusions used on the population for this research. Chapter 4 provided the results of the study and Chapter 5 provides the summary and conclusions.

Chapter 3: Research Method

In Chapter 3, I explain the research design and methods that I used in this study. Social and environmental factors may have significantly affect the experiences of those with PPD. I analyzed existing data to explore IPV and nonphysical risk factors as predictors for PPD symptoms and the strength of these predictors. My goal was to create a foundation for further exploration and detection of this problem to ultimately assist victims and families. Although education and PPD screenings are available to detect PPD in early stages, current screenings lack the ability to identify other potential risk factors that also contribute to PPD (Yawn et al., 2012). As such, there is a need to have a screening questionnaire that explores potential risk factors occurring in the mother's life prior to giving birth and in the early postpartum period. Early detection of mood-dysphoric symptoms improves with more thorough screening procedures (Yawn et al., 2012). Exploring factors that effect the risk of PPD, and the benefits of early identification for treatment outcomes, increases the likelihood that screenings will have a more pronounced role in hospitals and mental health settings. Furthermore, understanding which risk factors have the greatest effect on PPD may lead to future wraparound services for mothers and their families who are at risk.

In this chapter, I provide rationale for the research design that I used in this study. I also describe the demographics and recruitment of the participants. Because the data were generated from an existing data set, this chapter also includes an explanation of the characteristics of the aforementioned data set. I provide the chosen statistical analysis in

detail, as well as the instrument that I used to compare the scores. I then outline the method to collect the data. Finally, I include ethical considerations.

Research Design

This study was a nonexperimental design in which I used secondary data. I selected the data set because of the large sample size and the reputation of the agency that collected it, and because its variables matched those chosen for this study.Researcers from the original study data from participants in 20 cities throughout the United States, providing a wide sample of cities and states. Although I tried to achieve a sample that would be representative nationally, this sample had an urban bias due to the lack of representation in rural areas.

The data for this study came from the Fragile Families and Child Wellbeing Study from Princeton, Pennsylvania State, and Columbia Universities (Reichmann, Teitler, Garfinkel, & McLanahan, 2001). The FF Study baseline data were collected between 1998 and 2001. One-year follow-ups began in June of 1999 and were completed by March of 2002. I used data from the 1-year follow up interviews because this population is most likely to exhibit PPD symptoms if they existed. According to the *DSM-V*, depression symptoms may have an onset of 4 weeks postpartum with symptoms lasting for up to 1 year (El-Hachem et al., 2014; APA, 2013). Data from the FF Study can be used to identify risk factors in the perinatal and postnatal periods that are critical to the development of infants (Reichmann et al., 2001). Furthermore, the FF Study data set is a public use data set so no agreement form was needed.

In this study the predictor variables were analyzed to determine if there was a significant association with the criterion variable PPD. Using logistic regression analysis, I identified which of the predictor variables were the strongest for PPD. Using this analysis method, potential correlational relationships were examined. The FF Study used variables that were consistent with the research questions of this study; however, the FF Study variables were limited by the age of the data and lack of control over data collection that the present researcher had. The FF Study data only included women who have kept their infants so they may focus on the families and their experiences.

Methodology

Population

PPD can affect any women whose pregnancy comes to an end by means other than parturition (Wisner, Parry, & Piontek, 2002). El-Hachem et al. (2014) shared that the postpartum period is a vulnerable time for women that can be extended to one year after birth. Literature also shows that PPD can affect men in the postpartum period (Paulson & Bazemore, 2010). The focus of this study however, was on mother's who returned home with their babies.

Sample

The sample for this research consisted of mother's who responded to questions pertaining to depression in the first year postpartum during the one-year follow up FF Study interviews. At the time of the one-year follow-up only 4,270 mothers from the original study were retained. I used G*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007) and a medium effect size (.80) with parameters of 95% confidence intervals and an α

(.05) to calculate a sample size of 721. However, I retained the 4,270 mothers from the FF study for the analysis procedures in this study.

Sample From the FF Study

FF Study targeted both married and un-married parents to provide information and conditions about the well-being of children during the elementary school years. Participants from the original study were selected from a multi-stage stratified random sample. The participants were obtained from urban cities with populations exceeding 200,000. Characteristics of the families included marital status, age, education, and insurance information. The sample from the original study included a total of 8,728 (4,898 mothers and 3,830 fathers) participants at the time of the baseline study. Participants were interviewed by phone at the at one year, three years, five years, and nine years from the time of the child's birth. The child's teacher was also interviewed when applicable.

Sampling and Sampling Procedure

A secondary analysis of existing data from the one-year follow up was conducted for this study. The stratified random sample of this study consisted of women from the one-year follow up of the FF Study. The original FF Study began with small pilot studies to determine which cities and hospitals would meet the criteria they determined would provide large and diverse populations (Reichmann et al., 2001). Researchers choose cities based on the amount of money given as welfare or TANF funds to families and cities that were considered to have a strong local labor market. Next, they randomly sampled hospitals in which the cities met the criteria for having a large enough population, labor

force, and welfare payment (Reichmann et al., 2001). City demographics were diverse in labor market conditions, child support enforcement, and policies on welfare. Hospitals were chosen based on the results from the smaller scale pilot studies they conducted prior to collecting data for the FF Study. The pilot studies found that permission to interview mothers and fathers was easily granted and the researchers could conduct the interview in the hospital with both of the parents present, which saved on time and resources while providing the researchers with a larger sample size. The original researchers obtained information from hospitals instead of birth records or prenatal clinics because they believed there would be a higher response rate (Reichmann et al., 2001). Prior research indicated that the number of births in a hospital was higher, and the population included more diverse participants including married and un-married couples, mothers from both urban and rural communities, and high and low income levels (Reichmann et al., 2001). Sampling of live births from 20 cities across the USA in 15 different states occurred in 75 different hospitals. Two births per hospital were drawn by a systematic sample daily. Mothers were then approached in the hospital after being drawn. Mothers were offered 20 US dollars for the interview that lasted approximately 30-60 minutes (Reichman et al., 2001). Ninety-nine percent of the interviews conducted occurred within three days of birth; however, the remaining interviews were conducted up to 112 days after birth. They were excluded from the original study if they were choosing to place the infant in an adoptive home, if the father had passed away prior to the mother giving birth, if the mother could not communicate well in English or Spanish, or if either the mother or infant were too ill to participate. Participation for the FF Study was voluntary. Informed

consent was obtained from both mothers and fathers. Mothers also gave permission for access to the infant's medical records. Interviews were available in English and Spanish languages. Baseline interviews were conducted in the hospital with the mother present. The one-year follow up interview was conducted over the phone (Reichman et al, 2001).

I limited data in the one-year follow up to questions only pertaining to this study. Such questions identified the presence of the risk factors IPV, financial difficulties, and emotional or partner-related stressors. Answers given by the mother will indicate if the risk factors are indeed present. Due to the large number of participants, statistical significance is likely to be found, therefore the effect size is important to consider in result analysis. The effect size will reveal the size of the effect the predictor variables have on the criterion variable. Therefore, interpretations will also be based on effect sizes and not on statistical significance alone (Sullivan & Fein, 2012). Gene V Glass and Jacob Cohen determined that measures of effect size generally have a greater effect on the results of a study because it describes how much affect the results have rather than if there is an affect (Sullivan et al., 2012)

Instrumentation

Fragile Families and Child Wellbeing Study

The FF Study is a large study that followed families over a 10 year to investigate the conditions of fragile families and the wellbeing of the children (Reichman et al., 2001). Information was collected on attitudes of family members, relationships, parenting activities, demographics, mental and physical health, financial status, employment

history, characteristics of their neighborhood, and participation in the fragile family's program.

Reliability and validity. The FF Study has shown high reliability and validity as indicated by current research analyzing the use of the FF Study with varied participant samples (Ryan, Tolani, & Brooks-Gunn, 2010). Ryan et al. (2010) used the data from the 1-year follow up to study maternal stress and depression on birth outcomes. Follow up studies have been continued to address family dynamics for the last 15 years. Furthermore, researchers continue to use data from the first five years of the study for analyses (Geller, Jaeger, & Pace, 2015). The FF Study questionnaire itself does not have specific reliability and validity percentages (FFDATA, personal communication, January 4, 2016). It is composed of atheoretical and descriptive questions as well as construct questions obtained from other instruments. However, content and construct validity have been supported in current research suggesting that the quality of the FF Study is adequate and the questionnaire is related to theory driven constructs (Brooks-Gunn, 2015; Krueger, Jutte, Franzini, Elo, & Hayward, 2015).

Core questions were adapted from measures used by other large scale studies such as the Infant Health and Development Program, Early Head Start, the Composite International Diagnostic Interview- Short Form (CIDI-SF), Survey on Income and Program Participation (SIPP), Child Development Supplement of the Panel Study of Income Dynamics (PSID-CDS) and Social Indicators Survey (SIS) (Princeton, 2015) with Data obtained from the Princeton website (Reichman et al., 2001). Depression questions were derived from CIDI-SF is a brief standardized instrument used to measure

depression according to the criteria by the DSM-IV (FFDATA, 2005). The CIDI-SF has been shown to have good internal consistency with an overall score of .89 using Cronbach's alpha (Gigantesco & Morosini, 2008). The CIDI-SG is interviewer administered and takes approximately 7-10 minutes to complete (Gigantesco et al., 2008).

Parental and household dynamics were taken from the PSID-CDS, which is a self-report and interviewer observed, 5-question scale with an alpha of .69. The PSID-CDS is a longitudinal study that began in 1968 and continues to collect data on family and household dynamics (FFDATA, 2005). Researchers recently used the PSID-CDS waves I and II to determine the level of food insecurity on U.S. households in 2012 (Miller, Nepomnyaschy, Ibarra, & Garasky, 2014). The information gathered with these questions helped researchers understands the relationship between the mother and father, the degree of support, violence, and the level of parental satisfaction.

SIPP Wave 8 was used to identify economic hardship with the items taken from the Basic Needs section and the SIS of 1997 and 1999 (Reichman et al., 2001). The SIPP and SIS do not use scales to measure economic hardship, therefore there is no conventional agreement regarding validity measures (Reichman et al., 2001). Johnson and Laughlin (2009) felt the data from SIPP Wave 8 provided researchers with direct knowledge of the relationship between children placed in childcare and their well-being.

Study Variables

The FF Study provided a plethora of variables for a researcher to choose from. However, I used variables that pertain to this study. These variable questions were chosen based on the relevance pertaining to IPV, economic hardship, partner incarceration,

presence of depression, support from the partner, and satisfaction of parenting. The criteria used to determine which questions were chosen from the FF and Child Well-being Study was how closely related the question represented the current study variables all other questions were excluded. The dichotomous predictor variables will be IPV and the nonphysical stressors financial, emotional, partner-related, and traumatic risk factors.

IPV was indicated if the respondent answered yes to any of the following questions on the FF and Child Well-Being Study (as measured by the PSID-CDS): 1) he tries to make you have sex or do sexual things you don't want to do; 2) He slaps or kicks you; 3) He hits you with his first or an object that could hurt you; and 4) Were you ever cut, bruised, or seriously hurt in a fight with the father?

Financial stressors were present if the respondent in the FF Study answered yes to any of the following economic hardship questions on the FF and Child Well-Being Study (as measured by the SIPP and the SIS): 1) In the past 12 months did you get evicted for not paying rent/mortgage; 2) In past 12 months, did your-Gas/electric/oil get shut-off or withheld; and 3) In the past 12 months did your telephone service get disconnected for nonpayment?

Partner-related stressors were also indicated as present if the respondent answered yes to any of the following questions on the FF and Child Well-Being Study (as measured by the PSID-CDS): 1) Are the mother and father divorced or separated from each other; and 2) Are the mother and father currently romantically involved. I also indicated there were partner-related stressors if the mother indicated no to the following questions on the FF and Child Well-Being Study: 1) He encourages or helps you to do

things that are important to you, and 2) He listens to you when you need someone to talk to.

Traumatic stressors were deemed present if the respondent answered yes to any of the following questions on the FF and Child Well-Being Study (as measured by the PSID-CDS): 1) Mother was incarcerated 2) Father was incarcerated 3) Father passed away, 4) In the past 12 months did you stay in a place not meant for regular housing?

Finally, Emotional Stressors were present if respondents answered yes to any of the following parental questions (as measured by the PSID-CDS) on the FF and Child Well-Being Study: 1) I often feel tired, worn out, or exhausted from raising a family 2) I find that taking care of children is much more work than pleasure and 3) I feel trapped by parental responsibilities.

The dichotomous criterion variable of this study was PPD symptoms (as measured by the core questions in the FF Study that were adapted from the CIDI-SF). PPD symptoms were self- reported by each participant. Depression was deemed present if the respondent answered yes to the following question: 1) during past 12 months, have you ever been depressed/sad/blue for 2+ weeks in row. If yes they were directed to the following two questions: 2) How long each day did you feel sad during the period your feelings were worst and 3) during those 2 weeks, how many days did you feel this way? Participants were identified as having PPD if they answered yes to feeling sad, depressed, and blue for two or more weeks and they indicated that they felt sad most of the day or all day every day or for most of the two weeks.

Data Analysis Plan

The data was analyzed using the Statistical Package for Social Sciences 21.0 (SPSS). Analyses was conducted to ensure quality and examine assessments for missing values and outliers. The FF Study contained missing values due to skip patterns and nonrandom reporting, and such values will be sorted so that missing values will be omitted from the study. Descriptive statistics including frequency distribution, measures for central tendency (mean, median, and mode), and the minimum and maximum dispersion were run.

Research Question and Hypotheses

Because the majority of research on PPD explores risk factors in general, including IPV, I focused on the specific predictors that have a statistically significant effect on postpartum mothers. An in-depth exploration of the development and course of PPD necessarily informs research, treatment, and practice of the postpartum experience for mothers and, by extension, families. My goal was to inspire future services that will stabilize families.

Research Question 1: Does intimate partner violence predict the likelihood of postpartum depression as defined by the Fragile Families and Child Wellbeing Study?

H_{a1}: Intimate partner violence does predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

H_{01}: Intimate partner violence does not predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

Research Question 2: Do emotional stressors from parental dissatisfaction predict the likelihood of postpartum depression as defined by the Fragile Families and Child Wellbeing Study?

H_{a2}: Emotional stressors predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

H_{02}: Emotional stressors do not predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

Research Question 3: Do financial stressors, or economic hardships, predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study?

H_{a3}: Financial stressors predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

H_{03}: Financial stressors do not predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

Research Question 4. Do partner-related stressors predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study?

H_{a4}: Partner-related stressors do predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

H_{04}: Partner-related stressors do not predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

Research Question 5: Does traumatic stress predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study?

H_{a5}: Traumatic stress does predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

H_{05}: Traumatic stress does not predict the likelihood of postpartum depression, as defined by the Fragile Families Child Wellbeing Study.

Logistic Regression is the chosen data analysis procedure to examine what relationship, if any, exists between the predictor and the criterion variables (Lee, Lei, & Brody, 2015). The Hosmer-Lemeshow goodness-of-fit will be run as well as a correlations of estimates. Cross tabulations including correlations and Phi and Cramer's V will be run for tests of association and measures of assumptions.

Threats to External and Internal Validity

This study is expected to have minimal threats to external validity. The CDC used a stratified sample from an existing live birth certificate pool. However, the lack of rural representation does suggest that generalization to women living in rural areas should be done with caution. The large sample size of this study minimizes the risk of sampling error. However, there are concerns regarding the limits of nominal data. Nominal data provides categorical information only. The predictor variables cannot be randomly assigned; therefore, no cause and effect relationship can be determined, which indicates a threat to internal validity.

Limitations

As noted throughout the study, the focus of this study is an examination of PPD using data from the FF Study. A major limitation of this study was that data was collected

using self-report instruments, and a greater possibility of false positive reporting is associated with this data collection method. Second, a physician or mental health professional did not identify the participants as having PPD. The researchers of the original study indicated “often and always” as yes indicators of PPD, which also limits the study by not allowing for the consideration of gradation or intensity. The age of the data was also a limitation. From a biopsychosocial aspect the age of the data is still relevant for use. Researchers are still searching to understand PPD and the risk factors experienced by postpartum mothers within the first year postpartum. Some of the data may be outdated or inappropriate for use. However, many researchers continue to use public use data from the first five waves of the FF Study to seek understanding on family dynamics (Yildirim & Roopnarine, 2015) Age and ethnicity were not included in the public use data, which could have a significant effect on the outcome.

Ethical Protection of Participants

Since this is a secondary data analysis, there are no expected additional risks to participants. There are no physical risks to participants and no identifying information was collected. Information was obtained from FF Study website with the data already publically available. The database will be stored on my computer that is password protected and no others have access. Information will be kept for seven years and then deleted. I obtained IRB approval to conduct the proposed study through the Walden University IRB board. The results of this study was be shared with the FF Study at Princeton University who conducted the study. A copy of my dissertation through email upon completion and acceptance.

Summary

The nonexperimental research study used quantitative methods to identify the strength of violent and nonviolent risk factors on PPD. A logistic regression analysis was used to predict the relative strength of the risk factors from a secondary data set by the Fragile Families and Child Well-Being Study. A sample of 4,898 mothers were used from wave one of the FF Study. The data was collected in 2001 and was analyzed using the SPSS software. Ethical standards were followed regarding the use of secondary data and storage. No identifying information was provided with the data set. Threats to validity were addressed and was considered in data analyses. In chapter 4 I provided a detailed description of the results of the study and chapter 5 allowed for discussion and conclusions.

Chapter 4: Results

Introduction

Understanding the influence of psychosocial risk factors on PPD and, by extension, the effect on the family dynamic, is essential. The reliable prediction of risk factor influences will meaningfully contribute to the literature and raise awareness about the need to provide sufficient screenings and wraparound services for postpartum families. To evaluate the influence of psychosocial risk factors on PPD, I used a secondary data set originally published by the FF Study. I collected the FF Study data with participants who self-identified as mothers in the first year postparturition who answered questions pertaining to depression.

Researchers have mostly explored general risk factors with regard to PPD, including intimate partner violence (IPV). That certain social factors (e.g.., IPV) have been studied informs the literature on this subject, yet little has been known about the influence of other risk factors on PPD. I emphasized the need to identify predictors of PPD and clarify which of those predictors have a statistically significant effect in postpartum mothers. Understanding which risk factors have the greatest statistical significance will ideally increase the understanding about presenting symptoms of PPD and allow for future services that will stabilize families. To examine the effect of risk factors on the strength of PPD, I explored the five research questions. This chapter is organized into the following sections: review of the research questions, an explanation of the data cleaning procedures, the descriptive statistics for all variables, participant demographics, and the results of the analysis for each hypothesis.

For the present study, I analyzed five hypotheses using a binary logistic regression analysis. The proportion of the FF Study to the general population is also provided.

Participant Demographics

The data for this study were collected using a secondary data sample consisting of 4,898 mothers in a 1-year follow up interview from the FF Study. These participants were initially interviewed from June 1999 with interviews completed by March 2002. Participants were both married and unmarried women who retained physical custody of their children after birth. Income levels varied as well as race, education, and ethnicity; however, specific information on these specific topics were not provided with the public use data set. The age and demographic location of the participants were also not available for public use downloads. The 1-year follow-up yielded a 100% return rate for analysis of data.

Data Screening

I screened all data all data for missing or aberrant values, outliers, and violations of assumptions prior to any analysis.I examined frequencies of data, the minimum and maximum values for each variable for errors. I ran diagnostics for collinearity and examined the variance inflation factor (VIF) scores in all independent variables to test for high associations between the variables (multicollinearity).

Reseachers for the FF Study collected data in several cycles, or waves, with data from the first wave used for this study. To account for nonapplicable data for this study, I recoded variables and placed them into dichotomous groupings. Three specific itmes

from the FF Study measured the dependent variable PPD: “During the past 12 months, have you ever been depressed/sad/blue for two or more weeks in a row?”; “How long each day did you feel sad during the period your feelings were worst?”; and “During those 2 weeks, how many days did you feel this way?” Possible responses included yes (1), no (2), and a range of aberrant values from “on medication for depression” (-1), to “not in the wave” (−9 & −1). I recoded the aberrant values into the no category. I omitted missing responses from the data set and recoded responses not in the wave (e.g., may include all or some -11, -9, -8 -7, -6, -5, -4, -3, -2, -1) as a no (2). Finally,I calculated the sum of each variable category (both predictor variables and criterion variables) using the compute tab in SPSS to identify the predictor variables.

Results

Statistical Assumptions

As discussed in Chapter 3, binary regression is used for this study. Regression analyses is a way to predict and describe the relationship between variables. Binary logistic regression is used to describe the relationship between all independent variables and the binary dependent variables (Sarkar, Midi, & Rena, 2011). When using logistic regression, assumptions concerning the distribution of scores are not made. However, logistic regression is sensitive to high correlations (multicollinearity) among the predictor variables and any outliers. Outliers distort the validity of the results and multicollinearity can increase the variance of the coefficient estimates making the results unstable and difficult to interpret; therefore, it is important to properly examine all data prior to running any binary logistic regression analysis.

Multicollinearity diagnostics were analyzed using the VIF to ensure that the predictor variables did not have a high degree of intercorrelation. Table 1 shows VIF for predictor variables. The predictor variables tolerance values were all above .10 which indicated multicollinearity was not a concern. To assess for outliers, Table 2 shows the distribution of data around the mean, the standard deviation, and the minimum and maximum values. Based on the distribution, no outliers were present.

Table 1

Variance Inflation Factor

	1	2	3	4	5
ES	-	1.05	1.01	1.04	1.03
TS	1.03	-	1.02	1.02	1.02
PS	1.00	1.04	-	1.05	1.03
FS	1.03	1.02	1.03	-	1.01
IPV	1.03	1.04	1.03	1.03	-

Note. ES = emotional stressors; PS = partner related stressors; TS = traumatic stressors; FS = financial stressors; and IPV = intimate partner violence.

Table 2

Frequencies of Data for Predictors

	ES	TS	PS	FS	IPV
N	4898	4898	4898	4898	4898
Mean	3.45	4.03	5.43	3.19	4.08
Standard deviation	.50	.18	1.24	.50	.35
Minimum	3.00	4.00	4.00	3.00	4.00
Maximum	8.00	6.00	7.00	6.00	5.00

Note. ES = emotional stressors; PS = partner related stressors; TS = traumatic stressors; FS = financial stressors; and IPV = intimate partner violence.

Analyses of Binary Logistic Regression

A binary logistic regression was conducted to assess the effect of predictors on PPD. The model contained five predictor variables (emotional stressors, partner related

stressors, traumatic stressors, financial stressors, and intimate partner violence). A Hosmer and Lemeshow test indicated that the model did not pass a goodness of fit test, therefore, indicating that the model was not a good for the test x^2 ($df = 7$, $N = 4{,}898$) = 25.531, $p = < .05$ indicating that the model was able to distinguish between reporting and nonreporting of PPD. The pseudo R^2 model Cox and Snell $R^2 = .064$ and Nagelkerke $R^2 = .105$ suggests that between 6.4%and 10.5% of the variance of PPD can be explained by the chosen variables for this study. Furthermore, the overall odds of someone obtaining PPD with these predictors are 22.1 (OR = .221) times more likely to increase PPD when one of the predictors increases by one unit. Overall, this model can explain PPD correctly in 82% of the cases

Table 3 provides results for the five variables as a whole, with financial stressors as the strongest predictor for PPD.

Research Question 1: The first research question asked whether IPV predicts the likelihood of PPD.

H01: Intimate partner violence does not predict the likelihood of postpartum.

as measured by the following questions from the FF Study questionnaire: (a) Does he hit you with his first or an object that could hurt you? and (b) Were you ever cut, bruised, or seriously hurt in a fight with the father? For this hypothesis the independent variable is intimate partner violence. Results for this hypothesis indicated IPV was able to significantly predict PPD in mother's who had been exposed to violence (OR= 2.03, 95% CI= 1.69 -2.44; Wald = 56.96, df = 1, p = <.05) therefore the null hypothesis can be rejected.

H11: Intimate partner violence does predict the likelihood of Postpartum Depression, as defined by the Fragile Families Child Wellbeing Study.

Research Question 2: the second research question asked whether emotional stressors from parental dissatisfaction predicted the likelihood of PPD

H02: Emotional stressors do not predict the likelihood of Postpartum Depression, as measured by the questions 1) I often feel tired, worn out, or exhausted from raising a family 2) I find that taking care of children is much more work than pleasure, and 3) I feel trapped by parental responsibilities. The independent variable for this hypothesis is emotional stressors. The results for this hypothesis indicated emotional stressors also significantly predicted PPD (OR= 2.05, 95% CI= 1.76-2.39; Wald= 83.94, df= 1, p= <.05), therefore the null hypothesis can be rejected. Only question 3, "I feel trapped by parental responsibilities", showed $p < .001$.

H12: Emotional stressors do predict the likelihood of Postpartum Depression, as defined by the Fragile Families Child Wellbeing Study.

Research Question 3: the third research question asked whether financial stressors or economic hardships predicts the likelihood of Postpartum Depression..

H03: Financial stressors do not predict the likelihood of Postpartum Depression, as measured by the questions 1) In the past 12 months did you get evicted for not paying rent/mortgage, 2) In past 12 months, did your-Gas/electric/oil get shut-off or withheld, and 3) In the past 12 months did your telephone service get disconnected for nonpayment. For this hypothesis, the independent variable is financial stressors. For this hypothesis, the independent variable is financial stressors. All questions pertaining to

financial stressors showed significant values. Question 1) In the past 12 months did you get evicted for not paying rent/mortgage p. < .042 2) In the past 12 months, did your-Gas/electric/oil get shut-off or withheld p. < .001 and 3) In the past 12 months did your telephone service get disconnected for nonpayment p< .001. Financial stressors also significantly predicted PPD (OR=1.88, 95% CI = 1.66-2.14; Wald = 95.04, df = 1, p = < .05), therefore the null hypothesis can be rejected.

H13: Financial stressors do predict the likelihood of Postpartum Depression, as defined by the Fragile Families Child Wellbeing Study

Research Question 4: the fourth research question asked if partner related stressors predicts the likelihood of PPD.

H04: Partner-related stressors do not predict the likelihood of Postpartum Depression, as measured by questions 1) Are the mother and father divorced or separated from each other, and 2) Are the mother and father currently romantically involved. I also indicated there were partner-related stressors if the mother indicated no to the following questions 1) He encourages or helps you to do things that are important to you, and 2) He listens to you when you need someone to talk to. For this hypothesis, the independent variable was partner related stressors. Partner related stressors were not significantly able to predict PPD (OR= .970, CI = .91-1.03; Wald =.945, df =1, p = >.05) therefore, the null hypothesis fails to be rejected. Significant values were present in statement 3, "He encourages or helps you to do things that are important to you", p <.001 and statement 4, "He listens to you when you need someone to talk to.", p <.033.

H14: Financial stressors do predict the likelihood of Postpartum Depression, as defined by the Fragile Families Child Wellbeing Study: Partner-related stressors do predict the likelihood of Postpartum Depression, as defined by the Fragile Families Child Wellbeing Study.

Research question 5: the fifth research question asks how likely traumatic stressors are to predict PPD.

H05: Traumatic stress does not predict the likelihood of Postpartum Depression, as defined by questions 1) Mother was incarcerated, 2) Father was incarcerated, 3) Father passed away, 4) In the past 12 months did you stay in a place not meant for regular housing. Traumatic Stressors significantly predicted PPD (OR= 2.23, 95% CI = 1.60- 3.12; Wald 21.98, df = 1, p = <.05) therefore, the null hypothesis is rejected. For this hypothesis, traumatic stressors are the independent variable. Question 4, "In the past 12 months did you stay in a place not meant for regular housing?" $p < .0001$was the only question that showed any significance.

H15: Traumatic stress does predict the likelihood of Postpartum Depression, as defined by the Fragile Families Child Wellbeing Study.

Table 4 reports the results of the hypotheses and each individual question that defines the independent variables. The results if this study is considered to be representative of postpartum depression in women residing in urban cities with populations over 200,000.

Table 3

Logistic Regression Variables Predicting Likelihood of Postpartum Depression

	B	*SE*	Wald	*df*	*p*	Odds ratio
Emotional stress	.718	.078	83.935	1	.001	2.05
Traumatic stress	.803	.171	21.976	1	.001	2.23
IPV	.708	.094	56.959	1	.001	2.03
Financial stress	.632	.065	95.035	1	.001	1.88
Partner stress	-.031	.031	.945	1	.331	.970

Note. IPV = intimate partner violence.

Table 4

Logistic Regression Predicting Likelihood of Reporting Postpartum Depression Breakdown of Variables

	B	S.E	Wald	Df	p	Odds Ratio
IPV 3	1.178	.283	17.29	1	.001	3.24
IPV 4	.764	.142	29..13	1	.001	2.14
Emotional stress 3	.771	.084	85.20	1	.001	2.16
Financial stress 1	.438	.215	4.13	1	.042	1.549
Financial stress 2	.853	.155	30.15	1	.001	2.34
Financial stress 3	.507	.110	21.21	1	.001	1.66
Partner stress 3	.760	.215	12.46	1	.001	2.13
Partner stress 4	.215	.101	4.526	1	.033	1.24
Traumatic stress 4	.930	.214	18.848	1	.001	2.535

Note. IPV = intimate partner violence.

Summary

In Chapter 4, the data analyses were discussed along with the descriptive statistics and collinearity diagnostics between the variables used for this study and the binary logistic regression analysis results performed to analyze the five hypotheses. Data were screened for missing and inappropriate values. I examined VIF scores in all independent variables for multicollinearity.

I utilized a binary logistic regression analysis to evaluate the strongest predictor of PPD. Results showed that financial stressors as a whole was the strongest predictor of PPD, while a breakdown of the questions used to define the variables indicates that

emotional stress Question 3 which respondents reported feeling trapped by parental responsibilities was also a strong predictor of PPD. Chapter 5 provides and overall discussion and summary of the study's results, as well as the interpretations of the results and possible implications of the findings for social change. Recommendations for clinicians and future research will also be provided.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The main purpose of this study was to explore the risk factors that delineate mothers' experience of PPD. In this chapter, I presented an interpretation of the findings with a discussion of how the study correlates with the theoretical background, study limitations, suggestions for future research, and implications for positive social change. PPD occurs in approximately 10% to 20% of women who have children and can contribute to their becoming exasperated by risk factors or life events (Dennis et al., 2012; Katon et al., 2014; Kimmel et al., 2016). PPD has become a serious concern because it disrupts the bonding process between the mother and infant, creating deleterious effects in the familial system; it can also cause children to experience developmental delays in later childhood, as well as an increased risk of infanticide (Kara et al., 2008; Kimmel et al., 2016; Murray et al., 1996).

In the present study, I explored several PPD risk factors by evaluating their strength as predictors of PPD. I examined each predictor for strength and discussed a breakdown of each question that operationalized the variables to determine which predictor is the strongest on PPD. I used a public use data set from the longitudinal Fragile Families and Child Wellbeing Study, Wave 1. The FF Study data details the lived experiences of participants and provided insight into the postpartum years for these mothers, including risk factors for PPD (Reichman et al.2001). The FF Study interviews collect information on life events, financial difficulties, mental health, and satisfaction of parenting. In this chapter, I provide a detailed discussion regarding the findings, their

interpretation, study limitations, recommendations for clinicians and future researchers, and implications for social change.

Interpretation of Study Findings

In this study, I conducted a nonexperimental, quantitative design and useda binary logistic regression analysis. The FF Study included detailed data about the reported emotional, traumatic, financial, and partner related stressors, as well as IPV and PPD from a stratified sample ($N = 4,898$) of urban participants from major U.S. cities. Each qualifying U.S. city used in the study had a population more than 200,000. Binary logistic regression was the primary analysis. I entered the scores for each predictor variable and the criterion variable into SPSS. The data analysis showed significant differences among the predictors. An analysis for multicollinearity found no correlation among the predictor variables.

Research Discussion

Each of the primary research questions was designed to determine to what extent each predictor could actually predict PPD. FF Study questionnaire measured all variables by questions from the study. Analysis showed statistically significant findings for IPV, emotional stressors, financial stressors, and traumatic stressors; however, partner related stressors yielded no statistical significance. The most significant predictors for PPD were as follows: not being able to pay the bills, having utilities shut off, and being evicted in the 12 months since giving birth, all of which were financial stressors. These findings were consistent with prior literature implicating socioeconomic factors aid in the creation of distress on families after pregnancy (Banker & LaCoursiere, 2014; McClain-Sampson,

Villarreal, & Rubin, 2016). Mothers with low incomes often have little to no education and have difficulty paying bills and providing a home for themselves and their infant(s) (McClain-Sampson et al., 2016). For mothers who have limited financial, social, or time resources; access to treatment and health care may be limited (RojasGarcía, Ruíz□Pérez, Gonçalves, Rodríguez□Barranco, & Ricci□Cabello, 2014).

Low economic status hinders access to health care due to lack of health insurance or fear of biases against women in poverty (McClain-Sampson et al., 2016; Rojas-Garcia et al., 2014). For these mothers, access to transportation and proper nutrition is limited, creating more stressors on the mother and increasing the amount of stress felt. The interaction between emotional stress and parenting was a significant predictor of PPD. This finding is Venkatesh, Phipps, Triche, and Zlotnick's (2014) research on adolescent mothers and mothers who reported feeling overwhelmed by the demands of parenting.

IPV was also shown to be significant predictor of PPD. A breakdown of the individual items that define the variable showed a statistically significant association for women who endorsed being hospitalized or hurt as a result of violence at the hand of an intimate partner. These findings were consistent with prior research on IPV (e.g., Flanagan et al., 2015). IPV has been found to increase the symptoms of PPD as well as place the mother at risk for substance abuse, premature birth, and social difficulties (Flanagan et al., 2015).

Partner-related stressors were not found to be statistically significant predictors in this study. However, an examination of 6,537 items used to define partner-related stressors indicated that reporting a lack of encouragement and listening by their partner

had strongly predicted PPD. This finding is also consistent with the prior literature identifying a lack of support from their partner affects the mood of the mother, thus further complicating PPD (Flanagan et al., 2015).

Theoretical Interpretation

The study findings were consistent with both the biopsychosocial and feminist theory that provided the framework for this study (Melchert, 2011; Ross et al., 2004).. In the biopsychosocial model each variable is considered to reciprocally influential on the others; each variable effects the others, having a circular effect. The biopsychosocial model explains PPD in terms of the hormonal or biological imbalance as it interacts psychological and social influences, which are known as the risk factors (Melchert, 2011; Ross et al., 2004).

According to the biopsychosocial model(Melchert, 2011; Ross et al., 2004), lifestyle choices and events can have a significant effect on the symptomology of PPD. Therefore, they influence the psychology of the individual, for example, increased symptomology of depression due to hormonal changes (Ross et al., 2004). Leigh et al. (2008) suggested that factors occurring prior to pregnancy (e.g., limited socioeconomic resources, traumatic events, or poor social support) that already have an influenceon the mental health of the mother may have an increased effect once a pregnancy ends. This prediction was supported by the finding of this dissertation study that PPD is significantly effected by the financial, violent, emotional, traumatic predictors, supporting the efficacy of applying the biopsychosocial model to PPD. This suggests a need to create services

that address the circular effect between these predictors and biology so as to reduce the impairment PPD causes on families and children.

Feminist theory (Terry, 2014; Wilgosh, 2001)also provided a lens through which this study was conceptualized. According to this theory, motherhood is said to be the epitome of a women's purpose in life. For example, parental dissatisfaction was shown to significantly increase PPD. Applying feminist theory to this finding suggests that women who find that motherhood is not what they expected struggle with feelings of guilt thereby affecting their mental health and increasing depressive symptoms. This in turn suggests that further research needs to be done to examine parental distress and the importance of extending mothers' support systems as *wraparound* support to mothers and their families in the postpartum period as well.

Limitations to the Study

A significant potential limitation of this study was that it used data from the FF Study, which only samples women from 20 major cities in the USA with populations over 200,000 people; the data pool therefore did not have any representation of rural women and their experiences. Women in rural populations are almost twice as likely to have PPD than women in urban populations (Mollard, Hudson, Ford, & Pullen, 2016). Additionally, public use data sets do not provide researchers access to the participants' demographic characteristics unless they apply for the restricted data, which was not done for this study, limiting the associations that were explored. The age of the data is also a limitation to the study; however, I used the most current FF Study data set available and the findings were consistent with current literature (Reichman et al., 2001).

Postpartum Populations

The data analyzed for this study were limited to data for women who had live births and were the primary caretakers of their baby or babies. Women who had suffered miscarriages, still births, or placed their infants up for adoption are also at risk for PPD (Van Parys et al., 2014), but were not assessed in this study. Any woman who experiences a sensitivity to hormones after the resolution of their pregnancy should therefore be evaluated for PPD. Women who place their infants up for adoption or elect to have abortions generally experience greater risk to PPD due to experiencing feelings of worthlessness, guilt, anger, shame, anxiety and worry over placing their infant in adoptive care (March, 2014). Birth mothers often contact adoptive agencies asking about the child, particularly around the child's birthday (March, 2014). Women who suffered spontaneous miscarriages are 50% more likely to become depressed after their pregnancies end (Cheung, Chan, & Ng, 2013). This percentage increases if the mothers took fertility treatments to ensure pregnancy (Chan et al., 2013).

Recommendations

The findings of this study provide opportunities for several recommendations. First, I recommend creating wraparound support services for women who suffer from PPD; there are currently few or no services available in most areas because the current focus is on preventative services for children from low income families (McClain-Sampson et al., 2016). This is important because children who have mothers with PPD are at risk for the same emotional disturbances and developmental delays as children from low income families (McClain-Sampson et al., 2016). Mothers who receive the

proper screening for PPD could benefit for services that would provide education and support to them and their families. This might prevent cognitive delays and behavioral disturbances in children affected it (McClain-Sampson et al., 2016). Additionally, the information could increase the availability of psychosocial inventions to mother's who have been identified as having PPD. Knowing which risk factors effect PPD also open opportunities for education and support from the community, as well as in the therapeutic relationship between the therapist and client.

Future Research

Additional research is needed to fully understand PPD. The biopsychosocial model assumes that biological causes are a part of PPD etiology; however they limit the research to mothers with infants (Workman, Barha, & Galea, 2012). Providing studies that compare the experiences of women who have kept their infants and report PPD with women who report depression after the end of pregnancy may be beneficial to compare and contrast experiences and symptoms that can be used to improve treatment options. Future researchers can extend knowledge on this topic by including women who have placed their infants in adoptive care or surrogacy, had spontaneous and elective abortions, or suffered from stillbirths.

I recommend replicating this study with a sample that includes populations from both rural and urban populations, and which includes data from a wider breadth of pregnancy resolutions, so as to more accurately represent the population. I also recommend that future researchers study self-acceptance in new mothers, so as to improve understanding of women's ideas and beliefs about motherhood. Mothers could

benefit from services that would provide a through screening during pregnancy to access the amount of risk factors she may be experiencing in order to provide early detection of PPD. Obstetricians may increase the amount of education to staff and families by providing additional resources when the need arises. Additionally, future research may focus on preventative screenings during the perinatal period that promote early detection of PPD and/or wraparound services aimed at provided services for mothers and families who have been affected by PPD.

Implications for Positive Social Change

The results of this study can be applied to mothers and families who report PPD. Obstetricians and mental health practitioners may become more aware of the seriousness of PPD and how life experiences effect the symptoms felt in PPD. With a heighted awareness of the effect PPD has on mothers due to high-profile cases more attention has been given to PPD through research and treatment options. Mothers who experience PPD are more likely to have infants that are harder to console and have behavioral problems later in life. Furthermore, the children are at an increased risk for mental health disorders themselves as well as developmental delays (Stein et al., 2008). Furthermore, it increases the chances that mothers will receive psychosocial interventions needed to prevent deleterious effects on the family. Ultimately, early detection and treatment of PPD in the early stages prevents cognitive and emotional delays in children, decreases the chances of infanticide and suicide, prevents the mother/infant bond from being broken, and decreases the need for outside resources.

Conclusion

Early detection of PPD is vital to mothers and their families as well as providing wraparound services that offer support to the mothers and education to the community. In this study, I investigated the strength of violent and nonviolent risk factors as predictors for PPD. The study hypotheses were upheld, showing that financial difficulties were the strongest predictor of PPD. Emotional stressors were also shown to have a strong effect on the increase of symptoms in postpartum depressive mothers. IPV was found to effect PPD if violence resulted in a hospital stay or they were struck with objects other than fists. Partner-related stressors were not found to significantly predict PPD; however, not receiving emotional support from partners was found to negatively effect their PPD symptoms. Further research is needed to provide a more thorough representation of PPD across the United States.

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