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PostPartum Depression Educational Intervention

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POSTPARTUM DEPRESSION EDUCATIONAL INTERVENTION

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ABSTRACT

The overall mission of this project was to ensure mothers are knowledgeable about postpartum depression (PPD) risk factors, strategies to address the risk factors, and that they have the confidence to seek help for risk factors of PPD or symptoms of PPD after childbirth. The goals of the project included: 1) increasing the knowledge of women in the perinatal period about PPD and the risk factors for developing PPD, 2) increasing women's intention to address/modify their risk factors for developing PPD, and 3) empowering women to seek help if symptoms of PPD occur. The Health Belief Model was the theoretical framework used to guide this project and consists of six constructs that affect a person's decision to take action to prevent, screen for, and control illness. Using a control and intervention group approach, a ten minute educational presentation was implemented for the intervention group. Both control and intervention groups were provided a PPD test to evaluate their knowledge related to PPD. The results indicated the three goals of this project were achieved and the objectives accomplished; there was an increase in knowledge about PPD, an increase intention to modify risk factors and an increase in help-seeking behaviors for PPD in pregnant women following the PPD educational intervention of this project.

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CHAPTER I

POSTPARTUM DEPRESSION EDUCATIONAL INTERVENTION

Background

Depression creates significant worldwide disability for both genders and all age groups (World Health Organization [WHO], 2010). Unfortunately, women have lifetime rates of depression ranging between 10% and 25%, which is higher than men. By 2020, the World Health Organization (2010) anticipates the global burden of disease of depression in women will be 5.7% (Kessler et al., 2005; Weissman et al., 1996; WHO, 2010). Undeniably, depression is associated with increased healthcare cost as it is the primary cause for women aged 15 to 44 to be hospitalized for non-obstetric reasons in the United States (O'Hara, 2009).

Postpartum depression (PPD) is a unique subcategory of depression with significant cost on healthcare for infant, mother, and family. The fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V; American Psychiatric Association [APA], 2013) only characterized criteria for depression to the general population and did not have separate criteria for postpartum depression. However, there is an onset specifier for PPD within the DSM-V depression criteria that suggests symptoms occur within four weeks of childbirth. Most researchers also include women who have a diagnosis of depression during pregnancy with a continuation of their symptoms after childbirth in the definition of PPD. A meta-analysis and systematic review found prevalence rates of postpartum depression to be 13% and the period prevalence rate to be 19.2% in the first 12 weeks postpartum (Gaynes et al., 2005; O'Hara & Swain, 1996). When depression starts during pregnancy, there is substantial risk for these women to develop postpartum depression after childbirth.

Postpartum depression includes symptoms such as dysphoria, labile mood, insomnia or hypersomnia, confusion, guilt, and suicidal ideation. Although the majority of depressive symptoms ceases within 12 months postpartum, 8% of women have persistent symptoms beyond one year

(Dennis, Heaman, & Vigod, 2012). Postpartum depression is not experienced to the same degree by all women. The intensity of symptoms can range from mild to severe. Women with a greater intensity of depression symptoms are more likely to have symptoms persist and/or intensify (Dennis et al., 2012).

Although PPD affects many women, several factors could help determine who is at risk for developing symptoms. To that end, the World Health Organization (2008) completed a comprehensive review of the literature to examine the risk factors predisposing mothers around the world to PPD and found biological, obstetric, clinical, psychological, socioeconomic, and infant factors contributed to the patient's risk of developing PPD. The strongest risk factors associated with the development of PPD were depression and anxiety during pregnancy, stressful life events, lack of social support (perceived and actual), and previous history of depression. Moderate risk factors for developing PPD were high levels of childcare stress, low self-esteem, neuroticism, and difficult infant temperament. Factors with the smallest influence of developing PPD included obstetric and pregnancy complications, cognitive attributions, quality of partner relationship, and socioeconomic status. Interestingly, factors that have not demonstrated to be significantly associated with PPD development included maternal age, level of education, parity, length of relationship with partner, and sex of the child. These data indicated that elements of clinical, biological, and social domains of a women's life were most affected by PPD and should be of greatest focus (WHO, 2008).

Problem

Developing depression after child birth can be debilitating to the mother and cause substantial health consequences on the mother, infant, and the mother-infant bond. Data reported in the literature found depression in the postpartum period ranged from 10 to 20% (Gaynes et al., 2005; Marcus,

Flynn, Blow, & Barry, 2003). Since a history of depression is largely associated with developing PPD, one would hope sufficient prevention, identification, and treatment of PPD would exist in women with depression histories. Unfortunately, only half of non-pregnant women receive diagnosis and treatment (Ko, Farr, Dietz, & Robbins, 2012). The identification of several health system barriers has helped researchers understand why the knowledge of women's previous history of depression and the diagnosis subsequent treatment of postpartum depression do not occur.

Pediatricians and pediatric nurses report barriers such as insufficient time, inadequate training and knowledge, and inexperience with counseling and resources (Liberto, 2012). Fortunately, in January 2016, the U.S. Preventative Task Force included PPD screening in their depression screening recommendation although the specifics of frequency and timing was not addressed (USPSTF, 2016). Thirteen states are known to have perinatal mental illness related policies with Illinois, Massachusetts, New Jersey, and West Virginia and Connecticut policies mandating screening for PPD (Rowan, Duckett, & Wang, 2015).

Unfortunately, the effects of untreated PPD can have both short- and long-term effects on the mother and child relationship. Quality of life and the mother's ability to bond with her baby are disturbed by postpartum depression. Mothers with postpartum depression provide less affection and responsiveness toward their infants compared to mothers who do not have depression symptoms (Beck, 2006). Withdrawal, disengagement, or hostility characterize the interaction commonly present in the mother-child interaction of untreated women with PPD (Pearlstein, Howard, Salisbury, & Zlotnick, 2009). Studies have also determined that mothers with postpartum depression are not as likely to ensure their babies receive preventive health measures such as breastfeeding or regular use a car seat (Freeman et al., 2005; Pearlstein et al., 2009). Similarly, research has shown infants of women with postpartum depression have a higher incidence of fussiness and excessive crying, sleep issues, and temperamental problems, which stress the mother's delicate mental state further

(Pearlstein et al., 2009). Unfortunately, the compounding effects of PPD can make mothers suicidal, accounting for 10% of mothers' deaths (Oates, 2003). Women with PPD are also at higher risk (40%) of relapse with subsequent pregnancies and during non-partum periods (Farr, Denk, Dahms, & Dietz, 2014).

A growing bed of knowledge has looked at the long-term cognitive, behavioral, and interpersonal delays in children of postpartum depressed mothers (Dennis & Dowswell, 2013; Stewart et al., 2003). It is undebatable that postpartum depression causes the mother's offspring be at increased risk for poorer cognitive functioning (IQ), speech and language delays, and internalization and externalization of behavior problems into infancy (Downey & Coyne, 1990; Gelfand & Teti, 1990; Kingston, Tough, & Whitfield, 2012). It is believed the disturbance of maternal responsiveness created by PPD facilitates this adverse outcome on children's functioning (Murray, Halligan, & Cooper, 2010). In 16-year-old children, there is evidence of lower IQ for children whose mothers suffered from postpartum depression (Murray et al., 2010). The negative effects appeared to be associated with the severity of depression as well as the length of time the mother was depressed (Murray, Arteche, et al. 2010).

CHAPTER II

LITERATURE REVIEW

How can nurses help expectant mothers understand postpartum depression with the goal of decreasing the rates of postpartum depression? Search inclusion criteria included decreasing postpartum depression, expectant and postpartum mother's perceptions of PPD, and community PPD awareness campaigns. This literature review unveiled several themes. First, there were several knowledge deficits women had about PPD. Second, mothers identified many barriers preventing them from seeking evaluation and treatment. Lastly, several examples of effective outpatient interventions were identified that improved knowledge and prevented and reduced symptoms of PPD.

Barriers and Knowledge Deficit

The first article described a large study conducted using Utah PRAMS data and sought to determine the difference between women who reported PPD and sought help versus those who did not seek help (McGarry, Kim, Sheng, Egger, & Baksh, 2009). The study evaluated the responses of 333 mothers who reported PPD and were two to six months postpartum. Analysis revealed women suffering from PPD and did not seek help were more likely to be younger, less educated, Hispanic, non-White, and enrolled in women, infants, and children (WIC) during pregnancy. When comparisons were made between variables and help sought versus non-help-seeking behaviors, mothers of infants who ended up in an intensive care unit (ICU) were more likely to seek help for depression than women who took their babies home right away. Likewise, women of the non-White race had increased odds (12.1 times) of not seeking help for depression than White women. However, these racial differences diminished for women enrolled in WIC during pregnancy; neither group sought help for depression symptoms. These data highlighted the demographics of those less likely to seek help. The drawback of this study related to the use of retrospective data; thus, the participant's reasoning for help seeking behaviors was not identified.

The next articles to be discussed shed light on the reasoning/barriers women have for not seeking help for depressive symptoms. Woolhouse, Brown, Krastev, Perlen and Gunn (2009) recruited 1358 women who gave birth in the prior nine months to participate in a U.S. based telephone survey. The survey sought to inquire about the mothers' help-seeking behaviors and the barriers they experienced to not seeking help for PPD symptoms. Forty-one percent of the 400 women who stated they experienced depressed symptoms did not tell anyone they were feeling depressed. They explained not having anyone to talk to and feeling embarrassed about their feelings were the most common reasons inhibiting their search for help. These women also identified their emotional difficulties as normal or not severe enough to warrant seeking help. Similarly, Whitton, Warner, and Appleby (1996) conducted a quantitative study investigating attitudes of women with postpartum depression that influenced their choice whether or not to receive treatment. The researchers identified 78 mothers who scored high on the Edinburgh Postpartum Depression Survey (EPDS) tool (greater than 10) and were included in the study. Of these women, 90% knew something was wrong with the feelings they were having. Only 26% of the lower income women and 10% of the middle-class women felt they had PPD. When it came to reporting their symptoms to a healthcare professional, 80% of the sample did not. The most common reasons were the symptoms would resolve without drug treatment and/or the women believed they would become addicted to the medication.

In addition, McCarthy and McMahon (2008) and Holopainen (2002) found different barriers to seeking evaluation for PPD. McCarthy and McMahon's qualitative study involved 15 women who received treatment and support for PPD for 3 to 12 months. Women were asked what influenced their decision to accept their PPD diagnosis. Themes identified in the study included a delay in treatment because of the stigma associated with being "unable to cope" and being a "bad mother." In Holopainen's qualitative study, he explored the experiences of support and treatment of seven women

diagnosed with PPD. Women identified not knowing who or where to go for help as a significant barrier to obtaining help. The women also identified hospitals and doctors as barriers to psychological treatment, saying time was limited for counseling and clinicians seemed to prefer prescribing pharmaceutical interventions. Additionally, women vocalized feeling increased adequacy as a mother when they had a supportive spouse and friend-family network with whom to talk.

To further investigate PPD, Goodman (2009) conducted a quantitative study to explore the general female population's perceptions and attitudes about PPD. He used a convenience sample of 509 well-educated, high income, married pregnant women in their third trimester. Results of the survey revealed the greatest barriers to seeking help were the lack of time (65%), stigma (43%), and childcare issues (35%). Although the mental health status of these women was not assessed, the results of these data were strikingly consistent with the barriers identified by women who had PPD.

O'Mahen and Flynn (2008) conducted a qualitative study investigating the beliefs about the helpfulness of mental health treatment around the time of pregnancy. Pregnant women in this study were screened for depression symptoms in the waiting rooms of three obstetrical clinics in the United States. Of the 455 women screened, 177 were found to be at risk for depression according to the EPDS tool (> 10 points). One hour interviews were conducted with each patient who scored above 10 on the EPDS and provided consent. Women in this study reported a concern with structural barriers compared to the knowledge and attitudinal barriers. Structural barriers in order of greatest to least were insurance, inability to pay, transportation, and inadequate child care. Regarding the knowledge barriers, women were most unsure of appropriate healthcare providers to provide treatment and the best treatment options for depression. Lastly, lack of motivation for treatment and hopelessness about treatment working were the most common attitudinal barriers identified in this study. There were no significant differences between Black and White women on the rating of the barriers identified. The drawback of this study was the women were not asked about their specific

knowledge of postpartum depression. Although women in this study said knowledge was not a barrier, this was a self-assessment by the participant and their actual knowledge was not confirmed. Thus, it was possible their PPD knowledge was a deficit as other studies have noted and could be an important barrier to address.

O'Mahen and Flynn (2008) also examined which sources of depression treatment women were confident would resolve their symptoms. African American women had significantly higher confidence in religious-delivered treatment for PPD than did White women. However, all races of women had high confidence in psychosocial-based treatment and family support. Women felt least confident in case management and antidepressant medications to resolve PPD symptoms. With respect to the setting of treatment, women felt very confident in professional and home-based settings as a means to deliver PPD treatment; they had the least confidence in community and internet settings.

Thomas, Scharp, and Paxman (2015) conducted an unsolicited talk study using online discussion to explore behavioral constructs of mothers' experiences of PPD. The researcher used anonymous online discussions so unadulterated information could be shared. Thirty mothers who met inclusion criteria and consented to the study were included. Five main themes arose from the online discussions. The greatest construct noted was the severity of PPD symptoms. Ninety-four percent of participants expressed how the emotional and psychological aspects of self were negatively impacted by PPD. Social norms were the second theme as noted in 44% of the stories. Women vocalized not meeting the standards of "good mothering" and "failing as a mother." This was evidenced by mothers' self-created feelings of inadequacy and friends/family reinforcement of the women's bad mothering behavior. The other constructs were barriers to help-seeking, catalysts for help seeking, and self-efficacy. The study also found barriers women had to seek help included interpersonal relationships, shame and embarrassment, and institutional and financial barriers.

Similar to the previous studies, Negron, Martin, Almog, Balierz, and Howell (2013) sought to explore the social support needs and challenges of mothers with PPD and the perceptions of their social support during PPD. Thirty-three mothers who scored high on the EPDS (>10) and met the inclusion criteria participated in the focus groups. The main social support needs and challenges identified by all racial groups were fulfilling basic personal care needs, household chores, and getting sleep. Women felt these needs were essential to have social support in order to manage the inherent stressors of the postpartum experience. In addition, women who lacked the support for their high priority needs felt the lack of support caused their depression symptoms to worsen.

Finally, the women in the Negron et al. (2013) study felt their mother and partner were the best providers of support during the postpartum period. The emotional support participants felt was helpful to them was being able to talk about their PPD experience, receiving encouraging words, and being pampered. Although counseling was mentioned as a trustworthy source of support, it was less relied upon due to the barriers and constraints of getting to and attending formal sessions. When it came to mothers mobilizing the support of family and friends, many expressed using extreme measures. Women wrote detailed lists and instructions for spouses as their way to get help with child care and some women resorted to reading the instructions out loud to get spouses to listen. More intense behaviors used by women to mobilize their support people included having to beg, cry, and act demanding toward family members.

Likewise, a study by Jaronsinski and Pollard (2014) noted similar findings in their qualitative study of 60 low-income women with peri/postnatal depression in Utah. The women found “garnering support” was critical to their own and their child’s wellbeing. It was commonly expressed that having family and friends support them helped manage depressive symptoms better and provided reassurance. In contrast, not having social support was perceived as both discouraging and stressful.

Educational Interventions

The DNP student sought out literature on the effectiveness of outpatient educational interventions to prevent or reduce PPD. Milgrom, Schembri, Ericksen, Ross and Gemmill (2011) completed an interventional study to determine if an antenatal educational program would reduce depression symptoms, anxiety, parenting dysfunction, and general stress. Participants included 200 pregnant women between 20-32 weeks gestation with varying levels of depression, anxiety, and stress symptoms. The implementation took place as telephone consultations. This study compared randomized participants in the standard care group (routine antenatal class) to the intervention group (comprehensive parenthood transition and PPD education). Intervention group participants were provided pamphlets highlighting support networks and listing contacts of relevant services to encourage help-seeking behaviors. They also were provided a workbook with nine units: eight units to complete weekly during pregnancy and one unit after pregnancy. Each week, the women had telephone consults with a psychologist or trained educator. The units consisted of (a) nurturing the mother-baby bond, (b) nurturing the father-baby bond, (c) facilitating realistic expectations, (d) caring for yourself and baby, (e) managing relationship changes, (f) keeping balance in your life, (g) cognitive strategies to cope with depression and anxiety, (h) developing realistic expectations for caring for baby, and (i) postnatal session to reflect the birth experience, the reality of parenthood, and reinforcing coping strategies. The results found significantly fewer participants scored above the thresholds for mild to severe depression, stress, and anxiety after the intervention ($p < 0.01$). It also found parents in the intervention group experienced significantly lower parenting dysfunction compared to the routine care group ($t = 1.98, p = .05, \text{Cohen's } d = 0.45$). Lastly, women in the intervention group who had higher levels of depression symptoms at baseline had significantly higher help-seeking behaviors during and after childbirth ($\chi^2 = 9.23, p < .01$). This study showed the

effectiveness of their perinatal education program in reducing PPD and improving help-seeking behaviors.

Likewise, the effectiveness of a psychosocial intervention was studied in expectant parents who attended antenatal classes (Matthey, Kavanagh, Howie, Barnett, & Charles, 2004). The study evaluated levels of self-esteem on mothers' feelings of competence, mood, and maternal adjustment. The intervention was comprised of six weekly education sessions that focused on structured and unstructured discussions about hypothetical concerns that arose during and after pregnancy. The group session encouraged discussions of concerns; educated about parenting, baby care, and PPD; taught coping strategies for parenting stress; discussed resources where to seek help; and presented videos about bonding activities to do with the baby. The results concluded women in the intervention group with low self-esteem had significantly better scores on maternal adjustment, mood, and sense of competence compared to women with low self-esteem in the control group at six weeks postpartum. However, at six months, there was no additional improvement in scores. This suggested self-esteem of the mother played an important role in determining how perinatal education impacted her after childbirth and might be particularly beneficial for women with low self-esteem.

Rowe and Fisher (2010) discovered similar results. Their educational intervention took place in a primary care practice as a parenting preparation course. The aim of the course was to reduce the risk of developing PPD by giving couples comprehensive skills with infant care, management strategies for the stressors of parenting, and coping mechanisms for relationship change after childbirth. This intervention found a 14% absolute and 48% relative reduction in risk for developing psychiatric illness for women with no prior history of psychiatric illness. For women with prior psychiatric illness, the risk reduction was much more varied. This finding suggested women with histories of psychiatric illness might not benefit from perinatal education as greatly as women who did not have a history of mental illness.

The above studies had several common themes that made them successful interventional programs. The first commonality was the programs included a wide range of preparatory knowledge from baby care to coping strategies for parenting stressors. The preparatory education was a catalyst in reducing stress and helping parents feel confident in their parenting abilities after the baby arrived. The programs also specifically addressed many aspects of PPD from symptoms, risk factors, prevention, complications, treatment, and resources for help. This part helped the parents understand the seriousness and implications of PPD and encouraged them to report PPD symptoms. This also helped women experience lower rates of depression postpartum because they were more aware of the potential complications of untreated depression. The interventional programs also provided resources to help women know where to find help if they had risk factors for PPD or developed PPD symptoms after birth. Knowing where to seek help improved women's confidence with navigating the health system, which improved their ability to attain help. Finally, the studies included the spouses, which helped the parents better support one another through the transition and struggles of parenting.

Summary of Literature

The literature review found mothers perceived many barriers to identifying and treating their PPD. Although there were commonalities between the studies about barriers identified, variations existed regarding which barriers affected which characteristics of women. In general, mothers tended not to seek help for symptoms due to stigma and embarrassment barriers among other barriers and beliefs. Several knowledge deficits were noted in women's understanding of PPD symptoms and treatment. Women tended to be aware of PPD but unaware of the specific symptoms, facts about treatment options, and where to go for screening/help. When it came to identifying treatments for PPD and whether or not a woman was diagnosed with depression, women who were aware of PPD felt more willing to seek treatment through informal means than formal means, suggesting women

were less willing to take medication prescribed by a clinician and would rather use informal talk therapy.

The review also heavily emphasized the profound desire for and benefit of social support for women experiencing PPD. Women tended to reach out to their partners and to their own mothers for social support. Unfortunately, these primary support systems were not always readily available nor were people understanding of or empathetic to what the women with PPD were experiencing. As a result of their inability to mobilize support systems, women vocalized their need for support in many profound ways. The literature also emphasized how informal talks and having social support greatly helped mothers with PPD cope and work through mild depressive symptoms.

According to the literature, the educational interventions offered through outpatient/community settings were effective with increasing knowledge of PPD and preventing or reducing PPD symptoms. The programs included various strategies that made them effective: having comprehensive infant, parenting, and PPD education; addressing coping strategies for parenting stressors; discussing resources in the community and incorporating the spouse/partner in the program. The studies provided support that outpatient-based perinatal education programs could positively impact the mental health outcomes of mothers.

There were several implications for these results. First, the barriers to seeking help and the knowledge deficits about PPD demonstrated that women need more education about the symptoms of PPD. Women also need to know who and where they can go for evaluation of their symptoms and what treatment options are available for their symptoms. Pregnant and postpartum women should know about formal non-pharmacologic options they can access without requiring clinician referrals such as online support and support groups. Although women still should be encouraged to see a clinician for a formal evaluation of PPD as well as be informed of referrals for specialized treatment, women also need to be empowered to access support services on their own. Since stigma is a major

barrier to seeking help, women need to be empowered to navigate the health system effectively on their own to reduce their experience of stigmatizations, which often times occurs when reaching out to regular PCP or OB/GYN offices. With the use of a community-based PPD awareness campaign focusing on comprehensive PPD education, women will be able to identify and manage their risk factors and feel confident to intervene should symptoms of PPD occur.

Needs Assessment

The DNP student called the Southern Nevada Health District, Nevada Statewide Maternal and Child coalition, March of Dimes, other states, as well as completed an online search to determine the availability of needs assessment data. Presently, no surveillance system exists in Nevada to identify the number of women screened or diagnosed with PPD. However, the Maternal Child Coalition is currently conducting a needs assessment for PPD in Nevada. The data from this assessment should be not have been available during the framework of this project, therefore, due to the limited data reported in Nevada, surrounding states were evaluated for their needs assessment data for PPD. California and Arizona do not participate in PRAMS surveying and did not complete a formal PPD needs assessment. Utah participates in PRAMS surveys and included one question related to PPD in their survey. These data stated moderate to severe depression was experienced by 22,762 (23%) women (Utah Department of Health, 2006). They also found White women, age 20 to 24, married, high school graduates who had delivered normal weight babies ranked highest in having moderate to severe postpartum depression.

The Children at Risk organization in Texas did a PPD needs assessment (Horne, Correa, Moiver, & Vardy, 2014); a conservative estimate of these women who experienced PPD ranged between 69,000 and 79,000. Between 2008 and 2012, Texan women aged 15- to 44-years-old accounted for 89,110 of hospitalizations for mental illness. The trend over the five-year time span showed an increase in women being hospitalized for mental illness from 10.7% in 2008 to 16.0% in

2012. The needs assessment consisted of 54 community participants/members of community organizations who were in frequent contact with women who are pregnant and postpartum. These participants were randomized into four focus groups. Data for this assessment were retrieved from the focus groups and from individual interviews of each participant. The results of the data collection revealed several concerns. The largest barrier to PPD treatment was the lack of referral resources and follow up. In Houston, few facilities treated postpartum depression and none were identified as being specialty services for PPD (Horne et al., 2014). They noted a lack of clinicians specifically educated to treat antepartum and postpartum mental health disorders. Thus, there is a need for greater services and more healthcare workers specially educated to evaluate and treat PPD. Another need identified was improving women's awareness of PPD and improving the knowledge and skills of general practitioners about screening and treatment. Participants acknowledged the stigma and lack of knowledge prevented them from seeking help. Women reported embarrassment and shame with their symptoms of depression. Regarding provider deficits, they found clinicians in the state were not consistently screening for depression.

The focus group participants also indicated medical programs did not always incorporate antepartum or postpartum mental health in their education. Improving education to patients and clinicians would help close these knowledge gaps and also improve help-seeking behaviors of women and screening practices of clinicians. Lastly, there is a need to increase services that address barriers women have in accessing referrals (such as transportation to clinics, child care during appointments, and scheduling appointments); women often times encountered these logistical barriers of making time for, getting to, and coordinating care for children, which were major obstacles to attaining treatment.

The number of women affected with PPD in Nevada was difficult to determine due to the lack of reporting PPD in the state. Reasonable estimates of the incidence and impact of PPD in Nevada

were based on estimates from the literature and from PRAMS data collected from Utah and Texas. As discussed in the literature review, between 10% and 20% of mothers are affected by PPD and approximately are 25% for from low-income populations. According to the U.S. Census American Community Survey data from 2013, between 11,780 and 23,570 women in Nevada suffered from PPD that year.

To identify the resources in Las Vegas that addressed perinatal and postpartum mental illness, the DNP student searched the internet and telephone book. There were two support groups in Las Vegas for PPD and they meet twice a month. Two institutions in Las Vegas offer outpatient postpartum depression treatment to which clinicians can refer their PPD patients. Both facilities offer individual psychological and psychiatric services for PPD women but neither organization offers support groups or group therapy. These institutions accept a wide range of health insurance but many insurance plans have limited coverage for counseling services. The DNP student was told by the facilities that patients have to either pay out of pocket for counseling services or opt not to continue treatment after reimbursement by insurance ceases. No hospitals in Las Vegas have specialty psychiatric wards/beds for mothers with PPD. Women with severe depression are admitted to psychiatric units without having the child stay with the mother. When speaking to the education directors at the hospitals in Las Vegas, none of the facilities have mandatory PPD screening protocols after childbirth. Instead, they screen women for PPD after delivery on a case by case basis. Childbirth classes are offered at Las Vegas hospitals but only cover baby blues and PPD symptoms briefly in their lectures.

Available data indicate Nevada needs to (a) have increased education for providers to interact and screen pregnant and postpartum women, (b) have greater amounts of resources and specialists to evaluate and treat PPD, (c) address barriers that prevent mothers from accessing health care for postpartum mental illness, (d) provide educational programs focused on preparing parents and

reducing PPD rates, (e) educate the public about the resources available for PPD assessment and treatment, and (f) and institute policies to improve reimbursement for maternal mental illness services. Although the Nevada Statewide Maternal and Child Health Coalition was projected to complete the PPD needs assessment in summer 2015, the initiative was postponed and will be considered again in 2018.

Population Identification

This project provided education for woman who were pregnant, knowing that up to 20% of women experience some form of PPD. These women were in their second to third trimester of pregnancy.

Organizational Assessment

The directors of education for Mountain View Hospital and Southern Hills Hospital were approached about the need for an additional educational intervention about PPD. Currently, these two affiliated hospitals offer different options for taking perinatal classes; over one weekend or one class weekly for three weeks. The directors explained the educational classes contain a variety of perinatal, labor, and postnatal information but the PPD component is small. After discussing various deficits in Nevada about PPD awareness, screening, and treatment rates, the Director agreed more comprehensive PPD education was needed and would be beneficial in hospital perinatal classes.

Assessment of Available Resources

The resources required for the implementation of this project were space, supplies, and time. Space was needed to educate the participants about PPD depression. Supplies were needed to create appropriate educational materials for the participants such as individual materials and supplies and to display educational information to the group as a whole. Time was needed to develop the educational materials, to educate the participants, and to gather and analyze the results of the project.

Cost

The educational campaign was part of current perinatal classes held at the hospitals; therefore, teaching equipment (e.g., computer, projector, facility space, seating, and etc.) were provided by the hospital at no cost. The DNP student was in charge of developing and implementing the PPD educational component of the class (Appendix C). For the DNP student's intervention, the PPD test, contact lists, and the EPDS materials were printed at the expense of the student.

Scope of the Project

Relevant literature was reviewed about PPD awareness in the United States; the review established a need for improved PPD awareness in Nevada and verified the site of implementation. The literature review indicated depression in the postpartum period ranged from 10 to 20% (Gaynes et al., 2005; Marcus et al., 2003). Unfortunately, only half of non-pregnant/postpartum women received the diagnosis and/or treatment (Ko et al., 2012). This educational intervention project was designed to improve expectant mothers' understanding of risk factors for PPD during pregnancy and health-seeking behaviors related to PPD risk factors during and symptom development after pregnancy. The sponsor for this project was the Education Director at Southern Hills Hospital, who fully supported this educational intervention.

This project operated within the policies of the hospitals where classes were held. The intervention focused on educating women about PPD risk factors, symptoms, prevention/risk factor management strategies, treatment, local resources, and the confidence for women to seek help. Although spouses/significant others were included in the educational intervention, the mothers were the target for the PPT test completion. The development and implementation of the PPD educational intervention was the responsibility of the DNP student. Had an expectant mother vocalized to the DNP student that she was concerned about her feelings and expressed that she might be a threat to her herself or others, the DNP student arranged for the individual to be walked over to the hospital's

emergency department. If she was not an immediate threat to herself or others but was experiencing distressing symptoms, she was encouraged to contact her primary care provider or obstetrical provider for prompt evaluation.

Mission, Goals, and Objectives

The mission of this project is to ensure mothers were or became knowledgeable about PPD risk factors, strategies to address the risk factors, and the confidence to seek help for risk factors of PPD or symptoms of PPD after childbirth.

The first goal of this project was to increase the knowledge of women in the perinatal period about PPD and the risk factors for developing PPD. The second goal was for women to have increased intention to address/modify their risk factors for developing PPD. The third goal was for women to feel empowered to seek help if symptoms of PPD occur. If an individual expressed that she was feeling depressed but does not feel she was an immediate threat to herself or others, she was encouraged to go to her primary care provider or urgent care for evaluation.

The objectives of this project are for women to be able to identify (a) the symptoms of PPD, (b) effects of untreated PPD, (c) the risk factors for developing PPD, (d) how to address risk factors for developing PPD, and (e) who and where to go to seek help for PPD if symptoms should occur, and (f) the confidence for women to seek help.

CHAPTER III

THEORETICAL FRAMEWORK

To develop educational projects or undertake a research utilization project, it is imperative a theoretical framework is utilized (White & Dudley-Brown, 2012). The theory used to guide the development of this educational awareness project is the health belief model (HBM). This model is rooted in psychology and explains and predicts health-related behaviors. Six constructs affect a person's decision to take action to prevent, screen for, and control illness (National Cancer Institute, 2005). This model can be applied to an evidence-based education awareness campaign to increase the knowledge of women about PPD and increase screening rates.

When the six constructs are present, the HBM suggests people will be equipped to make a health decision. The first construct is perceived susceptibility; a belief about whether one will get a condition. The second construct involves a person's perceived severity, which encompasses the belief about the seriousness or consequences of a condition. Perceived benefits are the third construct. This construct entails the belief in a person's effectiveness in reducing the risk or seriousness of an illness by taking action. The belief about the cost of taking action defines the perceived barriers construct. Cues to action are the fifth construct in the HBM. This belief encompasses the factors that activate the "readiness to change." Many factors can impact a person's readiness and are pivotal to preparing them to take action. The sixth and final construct is self-efficacy; in order for a person to be able to take action, there must be a feeling of confidence in one's abilities to follow through and be successful.

The HBM can be applied to a situation where an expectant mother and father are receiving standard perinatal care. The pregnant mother attends perinatal classes and learns about PPD and risk factors for PPD (perceived susceptibility). The expectant woman learns that PPD affects women with a variety of risk factors; recognizing PPD early can prevent or reduce the severity of PPD (perceived

benefit). She learns that untreated postpartum depression can have long-term effects on the motherchild bond and on the child's behavioral, cognitive, and intellectual abilities into the teen years (perceived severity). She also learns strategies to manage PPD risk factors, there are resources for support, and clinicians are available to provide screening and intervention for risk factors and PPD symptoms (perceived barriers). After hearing the information, the expectant mother will utilize the knowledge gained to address the risk factors she might have for PPD. She will also have the PPD screening tool to take home and complete after childbirth should she be concerned about having PPD symptoms (cue to action and self-efficacy).

CHAPTER IV

PROJECT PLAN

Setting and Population of Interest

This DNP project used an educational intervention as the method for research translation and the Plan-Do-Study-Act (PDSA) model as a guide for implementation of the project. The PDSA model is a four stage cycle of adapting changes aimed at improving outcomes (Taylor et al., 2013). The Plan stage is where the identification of the improvement is made, the Do stage tests the change, the Study stage examines the success of the change, and the Act stage identifies future adaptations (Taylor et al., 2013). This model will be used to develop an intervention to educate perinatal women about PPD risk factors, strategies to address risk factors, and resources to seek help for PPD.

The Plan component of the PDSA model-guided project represents the method by which the educational intervention was completed. Evidence indicates when mothers are educated about PPD in formal outpatient environments during pregnancy, their risk for PPD is dramatically reduced (Rowe & Fisher, 2010). From the literature, a protocol was developed to educate pregnant women about PPD and risk factors for PPD, be self-efficacious to address the risk factors they may have currently for PPD after childbirth, and seek help if PPD occurs after childbirth.

The DNP student attended the childbirth preparation classes at the Mountain View and Southern Hills Hospital to teach about PPD and the importance of prevention and early identification of PPD. The DNP student gave a 10-minute presentation during the afterbirth section of the course curriculum. These courses took place over a single weekend or over three two-hour classes for three consecutive weeks. The information presented to the women was derived from the World Health Organization (WHO; 2008) literature and presented with an interactive presentation and education handout. The attending women were provided with a resource list for postpartum support networks in the Las Vegas, Nevada area. They also received the Edinburgh PostPartum Depression Screening

tool (EPPDS) that they could complete after childbirth. At the beginning of the education intervention, a demographic instrument and test were administered to the control group after receiving their standard childbirth class education (see Appendix C). The control group education included one slide differentiating the difference between PPD and baby blues. The slide listed the symptoms of each and the lecturer elaborated about if the signs or symptoms of PPD occur to go to their “doctor” to be evaluated. The intervention group received the same instrument and test after the educational intervention. This concluded the Do section of the PDSA model.

The Study aspect of the PDSA model entailed evaluating the project outcomes. Two instruments were used for this project: demographic instrument and the PPD test the DNP student developed based on the CHBM. Neither of these instruments required identifiers; thus, consisted of anonymous reporting. The first goal of the project was to increase the knowledge of pregnant women about PPD by informing participants about the PPD and administering it test in a control and intervention group. Analyses of the scores comparing the control and intervention group were reported in percentages of each item. A statistically significant increase in the percentage of scores for each item from the control to the intervention group was considered demonstrative of the effectiveness of the intervention. The three goals of the project were addressed by asking questions related to the project's goals on the PPD test. The women’s answers to the questions determined if the goals of this project were attained (Study).

The Act stage of the model was completed after analysis of the study findings had been made. A discussion of the results, implications, and recommendation for changes to the educational intervention identified adaptations to inform a new PDSA cycle of implementation. As well, discussion with the Educational Directors of both hospitals about sustaining the educational section in the childbirth classes occurred in the Act stage.

Instruments and Activities

The instruments used for this project included a demographic data sheet and the PPD test (Appendix A) developed from the CHBM. The demographic data sheet was based on pertinent demographic data the DNP student felt was consistent with the diversity of citizens of Nevada. The Champion Health Belief Model (CHBM) instrument was reviewed for applicability for this project and was used as a guide to develop the PPD test used in this project. The CHBM instrument was originally a 53 item tool developed in 1984 and revised in 1998. The original scale focused on mammogram screening and had gone through a rigorous analysis by experts to determine content for the scale. The revised version of the CHBM scale utilized two focus groups of women to exhaust potential questions for the scale. The scale consisted of 58 items and 8 categories: Susceptibility, seriousness, benefits, barriers, confidence, health monitoring, benefits to mammogram screening, and barriers to mammogram screening. The scale underwent testing using control and intervention groups to determine construct validity and reliability. The Goodness of fit value was 0.87 for construct validity and 0.88 standardized alpha for reliability. The results of the revised Champion instrument provided strong validity and reliability related to breast cancer screening (Champion, 1999).

Since the CHBM focuses on screening related behaviors, rather than risk factor identification, the CHBM instrument was adapted to apply to this project's constructs. Ten multipart questions made up the PPD test adapted from CHBM instrument. The choice of questions to include in the PPD test was based on the goals and objectives of the project. Permission was obtained by Dr. Champion on February 20th, 2015 to adapt the items on the CHBM instrument to be congruent with the PPD variables addressed in this project (Appendix B). The women's identification of risk factors and their intention to take action if they identified risk factors, and their intention to seek help if PPD symptoms occurred were addressed in the newly developed PPD test. After development/adaptation of the PPD test by the DNP student was complete, the student's DNP Committee Chair and Nursing

Faculty Committee Member to determine inter-rater reliability. The two committee members reviewed, analyzed, commented, made changes as appropriate to the test items, and finally had a conversation together about each item on the PPD test before coming to consensus about its reliability.

Timeline

Once the DNP project was approved by the student's DNP Committee in early April 2015, the DNP student began work on the next phase of the project. Below is the chronology that was followed.

May to August 2015

- Curriculum development for the educational intervention
- Printing instruments and resource material.

January to April 2016

- Implementation of the education intervention

April to December 2016

- Clean and Analyze the data

January to February 2017

- Writing the results of the paper

February to March 2017

- DNP Project Oral Defense April 2017
- Submission of the manuscript to the Graduate College April 2017.

Project Tasks and Personnel

The project's tasks included developing the educational intervention and developing and printing the instrument and resource materials that were distributed at the time of presentation and PPD test administration. The DNP student was the sole individual developing and printing the material for this intervention (see Appendix A and C). The personnel involved in the project include

the DNP student conducting the intervention and the childbirth educator(s) who coordinated and taught the other main aspects of the course. The other aspects of the child birth course included what to expect during pregnancy, child birth, and the weeks after child birth including basic baby care. Since this project was an add-on to an existing course, coordination of the facility and time of the course to be held was predetermined.

Resources and Supports

The World Health Organization website/database was the primary resource for developing the educational information for the intervention. Computer technology and word processing software (power point) was required to aid in the effective delivery of the intervention. A few support persons were needed for the project. The support persons for this project were the Education Directors of both hospitals and the childbirth educators of the courses were needed to ensure access to the desired population of interest was obtained.

Risks and Threats

There were a few threats to the DNP project implementation. Since the educational intervention was capturing an audience that may not have willingly chose to learn about PPD, they may not have been interested or willing to participate in the intervention or test. Another threat was the placement of the educational intervention. The content for PPD was added at the end of the final class day included in the class section discussing after birth issues. Therefore, participants may not have been inclined to stay for the DNP student's part, which would have threatened not only the potential to educate the women on this topic but also would have impacted data collection. There was also a threat that the course may be canceled or rescheduled due to small classes or illness of the class instructor. Since the Educational Directors were responsible for this course, the ideal placement of the educational intervention was not in the purview of the DNP student.

There was also a risk to the mother or father's emotional wellbeing. The material covered in the educational class related to PPD may have evoked disturbing realizations and feelings in the individual about the mother's current health situation which could have threatened the individual's willingness to complete the PPD test. The afterbirth education, as discussed earlier briefly discussed the symptoms of PPD compared to the baby blues, whereas, the educational intervention when in depth about the symptoms, risk factors, complications to mother and child, treatment, resources for help, and confidence to seek help related to PPD. The detailed information in the educational intervention about the risks and complications could have scare mothers and thus create a reluctance to learn admit or learn more about PPD.

Evaluation Plan

The cost of the project was just under \$200. Most of the cost was associated with printing the educational and resources material. There were costs associated with driving to the facility for data collection and accessories for data collection (pens, clip boards for the tool, scan disk, file folders, stapler/staples, and laser pointer). Snacks, refreshments, and a gift bag with various new mom products was offered to mothers and were included in the fee for the course (charged by the hospital). Thus, the student did not provide any additional compliments/incentives to the participants.

Institutional Review Board Approval

This DNP project was approved by the University of Nevada Las Vegas's Institutional Review Board (IRB) and the Sunrise Hospital IRB. No identifying information was collected from the women participating in the educational intervention, and all efforts were expended to protect the participants from harm. See Appendix D for the IRB approved consent form.

CHAPTER V

IMPLEMENTATION, RESULTS, and DISCUSSION

Summary of Implementation

The overall mission of this project was to ensure mothers are knowledgeable about PPD risk factors, strategies to address the risk factors, and when risk factors are identified, participants have the confidence to seek help to address risk factors of PPD or symptoms of PPD after childbirth. The PPD test was administered to control group participants one time during the standard childbirth classes while the intervention group received the educational intervention and received the PPD test one time immediately after the intervention. Therefore, this project involved comparing a standard control group PPD educational and intervention group receiving the educational intervention using a PPD test administered one time for each group. Responses to the various postpartum depression (PPD) test items were used to determine if this project's goals and objectives were accomplished, thereby evaluating if the overall mission of the project was achieved. The goals of the project included: 1) increasing the knowledge of women in the perinatal period about PPD and the risk factors for developing PPD including the symptoms of PPD and the consequences of untreated PPD, 2) increasing women's intention to address/modify their risk factors for developing PPD, and 3) empowering women to seek help if symptoms of PPD occur. The objectives of this project were that women would be able to identify (a) the symptoms of PPD, (b) effects of untreated PPD, (c) the risk factors for developing PPD, (d) how to address risk factors for developing PPD, (e) who and where to go to seek help for PPD if symptoms should occur, and (f) increasing confidence in pregnant women's intention to seek help.

Threats and Limitations

During the implementation phase of the educational intervention, there were some threats to the project. Of all the potential women asked to participate in the project, all but one consented to participate. The one woman who did not participate volunteered the reasoning for not participating; it was because she was in her last weeks of pregnancy and was very uncomfortable sitting down and staying focused on the PPD test. The originally perceived threat that the information would be uncomfortable for women causing them to be reluctant to participate was not voiced by the participants. The participants appeared to be receptive to the information and asked questions of inquiring wanting to learn more. During the project, there were no participants that vocalized being in acute distress from either the information covered during the project or vocalized they were having symptoms they felt needed to be acutely addressed. There were no course cancellations which enabled the timing for completion of the implementation phase to remain on schedule with the outlined time frame of the project. A large majority of the participants did bring their baby's father to the class. The presence of the spouse, as suspected would occur, could have affected how the participants' answers to the PPD test questions. The fathers often times stayed by the participant's side while the participants were completing the PPD test. Although it did not appear the spouses/fathers were directly influencing how participants answered test questions, the proximity of the fathers to the participants while they completed the test could have caused pressure for the participants to answer items a certain way.

The PPD test was administered to control group participants one time during the standard childbirth classes while the intervention group received the educational intervention and received the PPD test one time immediately after the intervention. Therefore, this project involved comparing a standard control group PPD educational and intervention group receiving the educational intervention using a PPD test administered one time for each group.

A limitation of the project is that the PPD test did not measure help seeking behavior rather intention to seek help. Without objectively measuring help seeking behavior it cannot be inferred that the educational intervention has an effect on women following through with seeking help.

Monitoring

The project was monitored by the DNP student in collaboration with the two hospital educational directors at the respective locations where the project was implemented. The DNP student was in regular communication with the directors of the education departments regarding the dates and times of the childbirth classes and coordinating the time during each class the intervention and/or PPD test was conducted. The DNP student was in contact with the education directors at the beginning, middle and end of the implementation phase and as needed for updates and check-ins. Since there were no events that occurred during the project, no additional monitoring or adjustments to the original monitoring plan were required.

Data Collection and Analysis

The data collection phase involved the participants completing the PPD test during the childbirth classes at a predetermined and consistent time for all classes (regardless of control or intervention group) at the two designated locations. The childbirth classes where the project was implemented consisted of one whole day courses and courses broken up over three classes weekly. Both hospitals offered these options on different days and times. The DNP student planned to implement the educational presentation and the PPD test administered after the standard childbirth class postpartum depression education sections for both the control and intervention groups. Having consistent timing for the implementation of the intervention and PPD test administration to the participants would have improved the reliability. However, since there were variations in length of program, days, times, and locations the intervention and data collection were not implemented

consistently, the standard child birth class information related to PPD was not consistently taught by the child birth educator to participants prior to the intervention and/or PPD test. Thus, both the control and intervention group had data collected on the first or last day of a course and before or after a break or standard childbirth class PPD education.

Following the PPD test in the intervention group, many of the women asked several questions about PPD and the different types of symptoms. The DNP student spent between five and 25 minutes answering questions or discussing information with participants at each session. The participants were interested in the resources that were available in the community and many expressed knowing other women they were concerned about that they felt should know about the resources. There were three women who expressed having had PPD in the past and were afraid of developing it again, but they denied any serious acute symptoms requiring emergent action. Since participants received a flyer with information of the resource they were encouraged to share this information with friends, partners, and other pregnant or postpartum women.

These three women were encouraged, per the presentation and hospital protocol, to address their symptoms with their obstetrical/gynecological physician or primary care providers in order to develop a postpartum plan anticipating the possibility of PPD reoccurring. None of the participants vocalized that they were having any new onset mental health symptoms. Compared to the control group, the intervention group's question and answer period expressed substantially more interest in the topic and helping other women through the information. In the control group, the longest time spent answering questions was five minutes. This was the case even though the sizes of the control and intervention groups were similar in number per session. There were no vocalizations by participants in the control group that the information was particularly interesting to them or motivated them to help themselves or others.

There was some risk of the fathers/spouses presence during the PPD test data collection phase. The accompanying companion ended up staying in the room seated by the participant during PPD test completion. The PPD test did not take participants very long to complete (which was demonstrated after the first two sessions) to warrant a break. As well, since the intervention took place usually after a break, the DNP student was not able to request another break so soon after their last one. The DNP student did request the spouses/partners accompanying the participants remain quiet and give the participants privacy to complete the test. No specific instructions were given by the DNP student about how to give privacy but the DNP student observed most of the spouses/partners were either looking at their phones, left the tables briefly, or were looking through the childbirth course materials. It did not appear that the presence of the accompanying individual had any visible effect on participants' PPD test responses. The partner's being by the participants' side may have threatened the participants' answers; however, from the DNP student's perceptions, there were minimal interactions noted between the participants and their spouses/significant others during the PPD test completion.

The DNP student entered all PPD test data collected from the control and intervention group into an Excel spreadsheet. Only the participants who completed the demographic data sheet and the entire PPD test were included in the analysis. For this DNP project, descriptive statistics were used for frequencies and percentages for responses to the PPD test items and the demographic data, independent *t*-tests were used to compare selected test question responses (interval level data) and Chi-square tests were used to compare nominal level data between the groups.

Results and Discussion

Data were collected between January 2016 and April 2016. The total sample included 68 women; there were 32 participants in the control group and 36 in the intervention group. The average age of the participants was 31 year (range 19-41 years). Race/ethnicity distribution of the sample was 71% white, 18% Hispanic, 9% African-American, and 2% Asian; no participants selected other for

their response. Sixty-nine percent of respondents were married, 25% were single, and 6% indicated common law as their status.

Goal One

The first goal of this project was to increase knowledge in pregnant women about PPD and the risk factors for PPD; this goal was achieved. Questions one, two and five on the PPD test addressed this goal and were evaluated as individual items (not summed). For each of the items, the intervention group had significantly higher percentages in identifying the correct answers compared to the control group and significantly lower percentages in selecting incorrect answers. These data appear to indicate the intervention may have improved participants' accurate knowledge of PPD and the associated risk factors for PPD (Tables 1 and 2).

Table 1. Comparison of mean percentage of correct responses for questions one and two on the Postpartum Depression Test

Postpartum Depression Test Items	Control (n = 32)	Intervention (n = 36)	Mean difference	p value
<i>Postpartum depression causes</i>	- -	--	- -	- -
Sleep problems	0.67	0.88	0.21	0.001
Fatigue	0.53	0.91	0.38	0.001
*Hearing voices	0.26	0.04	0.22	0.001
Being moody	0.89	0.97	0.08	0.001
<i>Risk factors to develop PPD</i>	- -	--	- -	- -
Prior Mental illness	0.34	0.97	0.63	0.001

Poor support systems	0.36	0.98	0.62	0.001
*Low education	0.67	0.04	0.63	0.001
Low income	0.81	0.98	0.17	0.001

*Incorrect answers

**Independent T-test used for this analysis

Table 2. Comparison of responses for questions five on the Postpartum Depression Test: *Can PPD start anytime in the first year after birth?*

Answers	Yes	No	Unsure	<i>p</i> value*
Control (<i>n</i> = 32)	14	13	5	--
Intervention (<i>n</i> = 36)	35	1	0	0.001

* χ^2 test used for this analysis

As well, responses on questions one and two support the first two steps of the Health Belief Model's theory. The participants learned about PPD and risk factors for PPD (perceived susceptibility) and then learned that PPD affects women with a variety of risk factors and that recognizing PPD early can prevent or reduce the severity of PPD (perceived benefit). The PPD test results indicated that when the intervention (addressing the perceived susceptibility and benefit) was successfully taught to the participants, an increase in knowledge occurred. This increase in knowledge, about the fundamentals of PPD, is the foundation for which the other steps to action and self-efficacy can occur.

Goal Two

The second goal of this project, for women to have increased intention to address/modify their risk factors for developing PPD, was addressed by question three on the PPD test; this goal was also fully

achieved. The intervention group answered the question correct significantly more often than the control group (Table 3). Additionally, question seven on the PPD test indicated that the participants in the intervention group had increased their likelihood of addressing PPD risk factors. The intervention group had significantly higher ratings related to whether participants would address risk factors for PPD compared to the control group. These data appear to indicate the intervention may have increased participant's intention to address or modify their risk factors for developing PPD.

These data also indicated consistency with the results found in studies discussed in the literature review. In the control group, 67% of women thought low education was a correct risk factor for developing PPD. This is a common misconception that was addressed in the intervention and as hoped, this misconception that low education is a risk factor for PPD was reduced to 4% for the intervention group's participants. Similarly, 54% of the control group's participants thought feeling they could manage their baby on their own would reduce their risk for developing PPD. This is also consistent with the literature that women tend to believe they should and can manage to raise a baby with minimal difficulty on their own are at risk for PPD.

The responses to questions three and seven on the PPD test were consistent with what the Health Belief Model which supports certain methods can improve intention to modify a behavior. To develop an intention to modify a risk factor, the participant needed to learn about the perceived severity and barriers to overcoming the obstacle. This project addressed the perceived severity and barriers by teaching the participants the profound long term effects untreated PPD can have on their baby. They also were taught strategies to manage PPD risk factors, discussing the available resources available for support, and the clinician types available to provide screening/intervention for PPD risk factors and symptoms.

Table 3. Comparison of mean percentage of correct responses for question three on the Postpartum Depression Test.

Postpartum Depression Test Items	Control (<i>n</i> = 32)	Intervention (<i>n</i> = 36)	Mean difference	<i>p</i> value**
<i>Factors that lower risk for PPD</i>	--	--	--	--
Adequate support systems	0.13	0.93	0.80	0.001
What to expect to care for baby	0.73	0.96	0.23	0.001
Feeling you can care for baby on your own	0.54	0.03	0.51	0.001
Having adequate resources	0.66	0.97	0.31	0.001

* a lesser value is desirable

**Independent *t*-test used for this analysis

Goal Three

The third and final goal, related to empowering pregnant women to seek help for PPD, was successfully met as exemplified by four PPD test items (questions four, nine and 10a, 10b, and 10c) which addressed the participants help-seeking behavior. The intervention group had significantly more correct responses when asked where they could get help compared to the control group (Table 4). Question nine asked "If I develop PPD symptoms after having my baby, I would seek professional help"; respondents were significantly more likely to seek professional help in the intervention group compared to the control group (Table 5).

Regarding questions 10a and 10b, the between-group differences were not as dramatic as in previous test items. However, on question 10c, the intervention group responded significantly higher in recognizing inappropriate resources compared to the control group (Table 6).

These data support the Health Belief Model’s theory of cues to action and self-efficacy. During the intervention, the participants were encouraged to vocalize their knowledge to seek help, and they were also provided with a screening tool to take home with them to fill out and give to their health care provider. This strategy provided a cue to participants to take action and be confident in that action to seek help if PPD occurs.

In summary, the three goals of this project were achieved and the objectives accomplished; there was an increase in knowledge about PPD, increase intention to modify risk factors and increase in help-seeking behaviors for PPD in pregnant women following the PPD educational intervention of this project.

Table 4. Comparison of percentage of correct responses for question four on the Postpartum Depression Test.

Postpartum Depression Test Items	Control (<i>n</i> = 32)	Intervention (<i>n</i> = 36)	Mean difference	<i>p</i> value**
<i>I know I can get help from:</i>	--	--	--	--
Primary Care Provider	0.43	0.98	0.55	0.001
Obstetrical/gynecological physician	0.11	0.91	0.80	0.001
Pediatrician	0.03	0.67	0.64	0.001
Counselor	0.16	0.89	0.73	0.001
Psychiatrist	0.06	0.98	0.92	0.001

**Independent *t*-test used for this analysis

Table 5. Comparison of responses for question nine on the Postpartum Depression Test.

Postpartum Depression Test Item	Control (n = 32)	Intervention (n = 36)
<i>If I develop PPD symptoms, ...I would seek professional health</i>	--	--
Not likely	2	0
Somewhat unlikely	4	0
Neutral	5	0
Somewhat likely	9	4
Very likely	12	32

** χ^2 test was used for this analysis, $p = 0.000$

Table 6. Comparison of responses for question 10 on the Postpartum Depression Test.

Postpartum Depression Test Item	Control (n = 32)	Intervention (n = 36)
<i>If you develop symptoms of PPD would you talk to?</i>	--	--
Family/Friends	28	32
Support group	24	31
Online chat room blog	21	5*

χ^2 test was used for this analysis, * $p = 0.000$

Potential for Sustainability

The project has the potential for being sustainable in the setting in which it was conducted. Since the childbirth classes already exist and the topic is already addressed within the classes, there are few limitations to why the educational intervention couldn't be implemented with ease as a sustainable part of the current class. The educational intervention is approximately seven minutes and it flowed very well within the time frame for the class. For the minimal amount of time invested in educating the participants compared to the significant outcomes achieved from the intervention, the motivation to incorporate this into the course content appears reasonable and manageable. Speaking with the hospital education directors, they said they would be willing to either lengthen the class or reduce other areas of material to incorporate this material into their current childbirth classes. However, since the hospitals (although affiliated) each have their own childbirth preparation slides and instructors, there would be some concern about keeping the presentation intact long-term. Instructors have the choice whether to cover certain material and at what pace. The instructors teach based on the knowledge and feel of the room and if the class is on schedule for the day. Although the findings of the project have not been discussed with the Educational Directors of the hospitals yet, the DNP student is concerned whether the intervention would be presented in its entirety and/or to what degree in the future.

Utilization and Dissemination of Results

The results of this project showed an increase in knowledge about PPD, increase intention to modify risk factors and increase in help-seeking behaviors for PPD in pregnant women. The DNP student is in the process of discussing with the participating hospitals the possibility of incorporating the education intervention used in this project as part of their regular childbirth preparation courses. Since the intervention is a corporate decision and may require national corporate office approval to make changes to the current education, this may be a delayed process. Eventually, the DNP student

would like to approach all the hospitals in the Clark County area to incorporate this intervention into their hospital based childbirth preparation classes. As well, the DNP student plans to publish the findings of this project to disseminate the findings to healthcare professionals across the United States. The DNP student is a member of several nursing organizations and plans to present these data in poster presentations at national/local/state level conferences.

As for additional scholarly activities, it would be interesting to replicate this project in not-forprofit hospitals and alternate setting (private childbirth prep classes) to determine if this intervention is effective in other settings. The intervention should be tested in other venues to determine the reliability and validity of the program's effects. In addition, it is important to study the long-term effectiveness of this intervention. Because there is a time delay from when the education takes place and when the symptoms of PPD may occur, it is imperative to understand if the knowledge presented in the childbirth classes is retained and helps women seek help months later when PPD is likely to occur. Therefore, I would recommend follow up testing of the participant's using the PPD test at specific times within one year postpartum. This will allow for evaluation of the long-term impact/outcomes of the educational intervention done during childbirth classes.

APPENDIX A

DEMOGRAPHIC INFORMATION AND PPD TEST

Participant # _____

Demographic Information

Circle the best answer or fill in the blank for all the questions below.

1) My age is:

2) I am:

Hispanic

White

African America/Black

Asian

Native American

Native Hawaiian/Pacific Islander

Multi-Race, Non-Hispanic

3) I am:

Single

Common Law/Co-living

Married

Other _____

Participant #_____

Postpartum Depression Test

Circle the best answer for each question relating to postpartum depression (PPD).

- 1) Postpartum depression causes: (circle all that apply) Sleep problems
Fatigue
Hearing voices
Being moody
- 2) Risk factors to develop postpartum depression include: (circle all that apply) Prior episodes of anxiety or depression
Poor family and spouse support
Have low education
Have low income
- 3) Which factors can lower my risk for getting postpartum depression: (circle all that apply)
Have adequate family/friend support
Know what to expect and being prepared to care for a baby
Feeling you can care for your baby on your own
Have adequate resources to support the baby (diapers, child care, food, etc)
- 4) If I am at risk for getting postpartum depression, I know I can get help from: (circle all that apply)
Primary Care Provider
Obstetrical (OB) Provider
Pediatric Provider
Counselor
Psychiatrist
- 5) Postpartum depression can start anytime in the first year after having a baby:
True False Unsure
- 6) How important is having family/friend support after having a baby? (Circle one answer)

Unimportant Somewhat Unimportant Neutral Somewhat Important Very Important

For the next questions circle a number that best represents your answer:

7. If I have risk factors for postpartum depression, I plan to address them.
Not likely Somewhat unlikely Neutral Somewhat likely Very likely

8. If I need emotional help after having my baby I would ask others to help me.
 Not likely Somewhat unlikely Neutral Somewhat likely Very likely
9. If I develop PPD symptoms after having my baby I would seek professional health
 Not likely
 Somewhat unlikely Neutral Somewhat likely Very likely
10. If you develop symptoms of postpartum depression how likely would you talk to:
- 10a. Family/friends
 Not likely Somewhat unlikely Neutral Somewhat likely Very likely
- 10b. A support group
 Not likely Somewhat unlikely Neutral Somewhat likely Very likely
- 10c. An online chat room/blog.
 Not likely Somewhat unlikely Neutral Somewhat likely Very likely

APPENDIX B

CHBM PERMISSION LETTER



INDIANA UNIVERSITY

SCHOOL OF NURSING

Center for Research and Scholarship

February 23, 2015

Leslie Feth
Doctoral Student
University of Nevada, Las Vegas

Dear Ms. Feth,

Thank you for your interest in my work. You have permission to view, modify, and use the Champion Health Belief Model as long as you cite my work and send me an abstract of your completed project.

Sincerely,

A handwritten signature in black ink that reads "Victoria Champion".

Victoria Champion, Ph.D., R.N., F.A.A.N.
Distinguished Professor
Edward W. and Sarah Stam Cullipher Endowed Chair
Associate Director Cancer Prevention and Control/Population Sciences
Indiana University Simon Cancer Center

VC:dg

APPENDIX C

POSTPARTUM DEPRESSION PRESENTATION

POSTPARTUM DEPRESSION

Leslie Bell, MSN, APRN, FNP-BC
University of Nevada, Las Vegas

What is PPD?

- Broad range of psychological and physical symptoms that start after child birth
- Irritability/anxiety
- Difficulty bonding with baby
- Feelings of shame, guilt, and inadequacy
- Severe mood swings
- Withdrawal from family and friends
- Overwhelming fatigue
- Insomnia
- Loss of appetite
- Thoughts of harming self or baby



- Can start anytime in the first year after childbirth
- Can range from mild to severe
- Happy, energetic, mild to severe
- Can happen any time in the first year
- It may resolve after 1 year (but it may not)

Who gets PPD?

20% of women develop PPD

History of anxiety or depression, poor social support, life stress

Childhood abuse, history of perinatal loss, poor social support, low education, low socioeconomic status



Why is it important?

- Short term and long term mother effects:
- Poor quality of life
- Disrupted family dynamics
- Influencing future family planning
- Less likely to ensure babies receive preventive health measures



Continued...

- Short and long term child effects:
- Future infant sleep problems, excessive crying...
- Speech and language delays
- Internalization and externalization of behavior in infancy
- Poor socialization and interpersonal skills
- Repeat IQ into teenage years
- Link to child developing depression as adult



APPENDIX C

POSTPARTUM DEPRESSION PRESENTATION

What can help?

Prevention

- Risk factor identification and modification can prevent PPD from occurring or reduce severity
- Improve social support and family functioning to help before and after childbirth
- Develop a plan to manage life stressors and care needs
- Identify community resources
- Get experience with babies
- Attend postpartum preparation classes
- Talk to your doctor, primary care provider, pediatrician, or mental health professional



What can you do?

Treatment

- Counseling alone can help mild PPD
- Medication can effectively treat all severities of PPD
- Find support groups and family or friend support



** Treatment can prevent the long-term effects of PPD on mother and child.

Barriers to getting help?

- Breaking the barriers to getting help:
- Stigma- not as a stigma
- Knowledge deficit about PPD- something is wrong
- Who and where to go for help- health care professionals and resource list
- Not being heard- Use the screening tool.

Take Away Points

- Assess your risk factors and modify them
- PPD can be effectively treated, earlier the better
- When something feels wrong, Seek help
- Use the depression screening tool.



Questions



References

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[Wu, S. Y., Fan, S. L., Mats, J. M., & Robbins, C. L. \(2011\). Depression and treatment among U.S. pregnant and nonpregnant women of reproductive age, 2001-2009. *Journal of Women's Health, 21*\(8\), 820-826.](#)

APPENDIX D
IRB APPROVAL



**UNLV Biomedical IRB - Exempt Review
Exempt Notice**

DATE: December 10, 2015

TO: Mary Bondmass, PhD
FROM: Office of Research Integrity - Human Subjects

PROTOCOL TITLE: [754410-1] Postpartum Depression Educational Intervention: DNP Project

ACTION: DETERMINATION OF EXEMPT STATUS
EXEMPT DATE: December 10, 2015
REVIEW CATEGORY: Exemption category # 2

Thank you for your submission of New Project materials for this protocol. This memorandum is notification that the protocol referenced above has been reviewed as indicated in Federal regulatory statutes [45CFR48.101\(b\)](#) and deemed exempt.

We will retain a copy of this correspondence with our records.

PLEASE NOTE:

Upon final determination of exempt status, the research team is responsible for conducting the research as stated in the exempt application reviewed by the ORI - HS and/or the IRB which shall include using the most recently submitted Informed Consent/Assent Forms (Information Sheet) and recruitment materials. The official versions of these forms are indicated by footer which contains the date exempted.

Any changes to the application may cause this protocol to require a different level of IRB review. Should any changes need to be made, please submit a **Modification Form**. When the above-referenced protocol has been completed, please submit a **Continuing Review/Progress Completion report** to notify ORI - HS of its closure.

If you have questions, please contact the Office of Research Integrity - Human Subjects at IRB@unlv.edu or call 702-895-2794. Please include your protocol title and [IRBNet](#) ID in all correspondence.

Office of Research Integrity - Human Subjects
4505 Maryland Parkway, Box 451047, Las Vegas, Nevada 89154-1047
(702) 895-2794, FAX: (702) 895-0805, IRB@unlv.edu

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CURRICULUM VITA

Leslie Feth BScN, MSN APRN, FNP-BC

Goals: To deliver high quality evidenced based care to patients in a timely and cost-effective manner.

Qualifications:

Values challenging work and learning new things
Energetic and has extroverted personality
Confident and competent working independently and in teams
Detail oriented

Work Experience:

May 2016 to
Present

Human Behavior Institute- Full Time- APRN

Provide medication management for all psychiatric diagnoses
Treat adult and adolescent mental illness (11 years and up).
Work in an interdisciplinary team to manage the entire spectrum of factors influencing a patient's mental health.
Manage patient's with substance abuse (active and recovering).

January 2014 to
May 2016

H2U Healthcare Clinic- Mountain View– Full Time- APRN

Provide high quality health care for patients 2+ years old
Perform preventative and Urgent Care, and manage chronic disease
Dispense medication to patients via on-site pharmacy.
Management skills: efficacy managing/ordering office supplies, manage newsletter and clinic promotions, develop proficiency managing CLIA lab and on-site dispensing pharmacy.

February 2014 to
December 2014

Walgreens Health Care Clinic- Per Diem- APRN

Manage care for 2 + year old patients, independently, with acute and chronic diseases, as well as, vaccine admin. and travel counselling
Developed proficiency with accurate coding, training newly recruited providers, oversee Medical technician, and master utilizing EMR.

October 2012 to

Forte Family Practice – Part time- APRN

May 2013

Manage patients 3 months old and up with complex health conditions Effectively manage 30 patients daily.
Clinical skills: Suturing, lesion removal, interpreting blood work/radiology, annual fe/male exams, Dermal fillers, neurotoxin injection, and responsibly manage patients with acute/chronic pain.

August 2008 to July 2012 *Pulmonary Associates, Pulmonary division- Full Time- APRN*

Diagnose, treat, prescribe medication, and monitor various pulmonary diseases such as: COPD, interstitial lung disease, lung cancer, asthma, pulmonary emboli, sleep disorders, and Pulmonary Artery Hypertension
Clinical Skills: PFT, blood work, and chest x-ray/CT interpretation.
Management skills: Train and perform reviews for both medical support staff and Nurse Practitioners on staff.

Education:

September 2014 to April 2017

Doctorate in Nursing Practice, Clinical Track – *UNLV*

September 2010 to April 2011

PhD (Urban Sustainability) in Nursing- *UNLV*
Completed 1st year of research courses.

August 2008

Completed Master's Degree as FNP (with Thesis on depression screening in primary care) - *UNLV*

Volunteer/Professional

Experience:

October 2016 to Present

President of the Nevada Chapter of Postpartum Support International

Provide resources to women suffering from PP depression (PPD).
Developing a support group with Dignity health for PPD
Working with local coalitions to educate healthcare professional to screen women for PPD
Improve referral networks for more prompt treatment of PPD

June 2012 to June 2014

Elected AANP Nevada State Representative

Developed bill language and lobbied for bill AB170 (2013)
Travel around the state encouraging AANP membership
Speak at national AANP conferences about Nevada health policies

Assisting local APRN organizations and nursing schools to become consistent with the Consensus Model.

June 2011 to
June 2012

Recipient of the AANP Fellowship with mentor Louise Kaplan, PhD.

Focus of fellowship- legislative change: Working with Senator and APRN organizations on various bills for 2013 legislative session.

Develop strategies to promote policy/legislative change that is consistent with the Consensus Model.

Memberships/Scholarly Activities: _____

Volunteer work: Subcommittee for postpartum mental health program development (2014), Nevada state board of Nursing subcommittee member for implementation of bill AB170 (2014), voting member of NAPNA, and AANP, Nevada Nurses Association, Phi Kappa Phi, and Sigma Theta Tau.

2007- 2010

Awarded Fellowship/scholarships for Masters and Doctorate