Early Recognition of Postpartum Depression Through Education: A Quality Improvement Initiative

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Abstract

Many women have misplaced high expectations after giving birth to care for themselves, the newborn, the home, and breastfeeding with little to no sleep. As a result, they may feel inadequate in their role and ashamed to ask for assistance and suffer from postpartum depression (PPD). Although the mother may not be willing to admit these feelings and concerns, if properly educated, her support systems may recognize early signs of PPD and encourage her to seek medical attention. Studies have shown that the support system of the woman plays a crucial role in the prevention, diagnosis and effective treatment of PPD. This quality improvement (QI) initiative utilized the existing literature to formulate an educational pamphlet geared towards the support system. The initiative was implemented over four weeks in a women's health clinic. A sample size of 183 participants partook in a pre and post-test in order to measure the knowledge gained. Categorical variables were evaluated using the Chi-square test between the pre and post questions. Continuous variables were evaluated using t-test between the percentage of pre and post proportion correct. The findings of the study suggest that support system education increases PPD awareness and knowledge.

Keywords: postpartum depression, support system, education, prevention, awareness

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Chapter 1. Problem

Introduction

The birth of a child is often viewed as a joyful occasion, but for women experiencing postpartum depression (PPD), it is a vulnerable and highly stressful period. Some women have only minor concerns, whereas others "…experience a grave and debilitating" emotional change (Zauderer, 2009, p. 23). PPD is undetected and untreated in many women. Over fifty percent of women experiencing PPD are undiagnosed due to the unwillingness of the mother to expose how she feels to her support system or health care provider (Zauderer, 2009).

Often, women who seek help from the health care provider are more symptomatic or have had a previous diagnosis of depression (Zauderer, 2009). The decision not to seek assistance is often due to embarrassment and feelings of being an inadequate mother. They are fearful of the possible consequences of hospitalization or separation from the child if they verbalize their thoughts (Zauderer, 2009). Also, there is stigmatization associated with depression, and disapproval by society that fuels the mother's sense of apprehension (Zauderer, 2009).

Mauthner interviewed women diagnosed with PPD to assess how they perceived themselves; there was a common theme of "guilt, humiliation, and a feeling of not being an average mother" (Zauderer, 2009, p. 27). According to Mauthner, "postpartum depression occurs when women are unable to experience, express and validate their feelings and needs within supportive, accepting and non-judgmental interpersonal relationships and cultural context" (Zauderer, 2009, p. 27). Many women have misplaced high expectations to care for themselves,

the newborn, the home, and breastfeeding with little to no sleep. They feel that admitting their inability to maintain these demands makes them incompetent and verbalizing these concerns shows weakness (Zauderer, 2009). Although the mother may not be willing to admit these feelings and concerns, if properly educated, her support systems may recognize early signs of PPD and encourage her to seek medical attention (Zauderer, 2009).

Clinical needs assessment and specific aim

In a North Texas women's health clinic, the education provided to the pregnant woman on PPD is at the initial prenatal care visit, during the third trimester, and during her postpartum hospitalization. The education is reinforced again at the postpartum clinic visit. During the postpartum visit, the mother completes the Edinburgh Postnatal Depression Scale (EPDS) screening tool for PPD. If she scores ≥ 10, a referral is placed to the mental health counselor (MHC) for further evaluation of PPD using the Patient Health Questionaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) screening tools for diagnosing, monitoring, and measuring depression (Pfizer Inc., 1999). If the patient is considered moderate to high on the depression tools, she is referred to the maternal-fetal medicine (MFM) psychiatric clinic for treatment. If she is considered low-risk, she can continue her treatment with the MHC for an individualized period.

Currently, the MHC gets an average of 72 maternal depression referrals annually, with approximately 10% of them being referred to MFM psychiatry. This number may seem low, but there are exclusions to the referrals to MFM psychiatry such as a previous history of depression or other mental health disorders, county of residency, financial responsibility/funding, and patient refusal of treatment.

This project aims to provide a 15% increase in the awareness and knowledge of PPD in the community served by educating the support systems of pregnant patients. By doing so, mental health promotion and prevention of complications associated with PPD is addressed.

Background

PPD is a mental health disease and form of major depression diagnosed in approximately 20% of live birth deliveries (Xie et al., 2010). It has an onset of approximately four weeks postpartum and can last up to one year (Ugarte et al., 2017). It has symptoms, developments and outcomes like other non-postpartum related depressions per the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorder (DSM-V) (Habel, Feeley, Hayton, Bell, & Zelkowitz, 2015). It is often difficult to diagnose due to the similarities to other perinatal diseases like anemia, thyroid disorder and gestational diabetes (Zauderer, 2009).

The risks associated with postpartum depression are enhanced after birth, due to the neuroendocrine changes and the increase in stressors (Drury, Scaramella, & Zeanah, 2016). Some significant risk factors for the diagnosis of postpartum depression are elevated financial stress, heightened marital stress, and the lack of a support system (Drury et al., 2016). The support system can be the "…family members, colleagues, friends, neighbors, professionals and organizations" (Xie et al., 2010, p. 340). A cohort study in Hunan, China resulted in the lack of a support system, more so that of the husband was the most critical risk factor for postpartum depression (Xie et al., 2010). There is a high incidence of postpartum depression in unmarried, multiparous, low-income, and ethnic minority women (Drury et al., 2016). These risk factors are associated with over 90% of the patient population seen in a North Texas women's health clinic.

Over the last nine years, PPD awareness has been a motivator in health care reform. The 2010 Affordable Care Act enactment of the Moms Opportunity to Access Help, Education

Research and Support for Postpartum Depression Act (MOTHERS Act) provided education, screening, and treatment to new mothers and their families on PPD (Massachusetts General Hospital Center for Women's Mental Health [MGH], 2007). The purpose of the act is to encourage Health and Human Services to facilitate research on the understanding, awareness, and treatment of postpartum depression and psychosis (Massachusetts General Hospital Center for Women's Mental Health [MGH], 2010).

Most recently, the Texas House Bill 2466 focused on educating and screening mothers for PPD at the initial pediatrician appointment (Evans, 2017). From 2011-2012, 189 Texas women died within the first year of giving birth, with mental health as one of the causative diagnosis (Evans, 2017). HB2466 was proposed and passed to address the rise in Texas maternal mortality and morbidity rates (Evans, 2017). The question of study for this quality improvement (QI) initiative is: will increasing community awareness of PPD by providing basic education at the prenatal care visit encourage early recognition and treatment, thereby decreasing PPD associated complications?

Problem Statement.

Postpartum depression is a public health problem that can plague the mother, the newborn and the whole family dynamic with long-term implications. It is a highly "…treatable condition, especially when identified early…", yet it is extremely underdiagnosed and is associated with severe complications like psychosis, homicidal and suicidal ideations or actions (National Institute for Health Care Management [NIHCM], 2010, p. 6). Of the 4 million live births a year, approximately 800,000 American women will experience a variety of postpartum depression symptoms. It is estimated that 14.7% of women with a live birth in 2018 suffered from PPD in Texas (United Health Foundation [UHF], 2018).

If postpartum depression is not treated, it may last for years affecting the mother's health mentally and physically (U.S. Department of Health and Human Services [HHS], n.d.). It prevents the mother from caring and bonding with her newborn which can result in problem behavior and growth in the child (HHS, n.d.). Postpartum depression is also a financial constraint on American healthcare. Although the specific cost of PPD cannot be determined, depression cost over $210 billion a year with "…women with depression having more expensive medical claims than men…" (NIHCM, 2010, p. 10). Many women are hesitant to admit or seek help for postpartum depression until their symptoms are severe. With adequate education, early recognition and treatment may be encouraged by the support system of the mother and as a result, decrease the mental and physical complications.

PICOT Question.

The PICOT question guiding the quality improvement initiative is: In the support system of the pregnant woman, would educating on postpartum depression via a pamphlet, increase their knowledge on the subject matter by 15% as measured by a pre and posttest over four weeks? The PICOT guiding the quality improvement initiative is as follows:

- Population (P) – Support system of the pregnant woman (male and female 18 years and older)
- Intervention (I) – Educating the support system on PPD via a pamphlet
- Compare (C) – Administer and compare the pretest scores with the posttest scores
- Outcomes (O) – Increase knowledge and awareness of PPD
- Time (T) – 4-week implementation period

The population of interest is the adult (18 years and older) support systems of pregnant patients. The support system is defined as the spouses/partners, immediate or extended family

members, and friends because they are closest to the patient and will notice changes in the behavior first. The intervention includes administering a pretest to assess the current basic knowledge of PPD the member of the support system has. Afterward, the PPD education pamphlet will be given and a posttest administered to assess the knowledge gained during the obstetric appointment. Currently, a document or educational session for the support system of the pregnant woman in the women's health clinic is not available, and consequently, there is no comparative data for this specific project. The desired outcome is the immediate increase in basic support system knowledge of PPD by 15%. As mentioned previously, there was not a formal support system education process. Therefore the measurability of the success of the project relies on the results of the pre and posttest. This pamphlet will be administered to the population of interest of each pregnant woman over four weeks.

Objectives

Postpartum depression education is essential to the expectant mother, but the support system is a crucial element in the support and awareness of PPD. The support system can help preserve the mental well-being of the mother throughout the pregnancy and postpartum periods. The objectives of the postpartum depression educational program include:

1. Provide postpartum depression education to the support system of the pregnant woman in all trimesters.
2. Increase the support system's postpartum depression knowledge by an average of 15% as measured by a pre and post test

Intervention

The proposed intervention required the development of an educational pamphlet on PPD geared toward the support system (*Appendix A*). The pamphlet defines PPD including early signs and symptoms as well include tips for prevention and online resources. This document is to be given to the support system during the patient's obstetric care visit. A 5-question pretest will be administered by the advanced practice provider (APP) to gauge the level of understanding of PPD (*Appendix B*). The pretest includes un-identifying demographic questions for data collection. The member of the support system will then be given the pamphlet to read during the obstetric visit and the opportunity for a 5-minute educational question and answer session on PPD with the APP. In order to measure the level of knowledge gained, the APP will administer a posttest (*Appendix C*).

Chapter 2. Literature Review

Review of Literature

The literature review for postpartum depression was initiated through the university online library. The following databases were reviewed for information: CINAHL Complete, Pub Med Remote, Cochrane, and Medline with Full Text. Specific keywords included in this search include *postpartum depression, prevention, risk factors, support, family support, stigma, prenatal, interventions, complications, and education*. The use of the Boolean operator "AND" was applied to the keywords to define the search. Inclusion criteria for the searched literature consisted of full text, human studies published between 2013-2018 in the English language. The last search was performed on October 11, 2018, resulting in a total of 271 articles.

In order to narrow down the results, the titles and abstracts were read, leading to twenty-four articles. The articles discussing pharmacological treatment, domestic violence, and non-maternal depression were excluded. Eighteen final articles were deemed appropriate and in line with the quality improvement project includes clinical trials, interviews, meta-analysis, observational studies, and systematic reviews. The literature was divided into five themes: risk factors, complications, the stigma associated with PPD, prenatal interventions to prevent PPD and support as an intervention for early recognition. Appendix E: Synthesis of literature and levels of evidence provides a summary of the articles applicable to the qualitative improvement (QI) initiative.

Risk Factors Associated with Postpartum Depression.

The cause of PPD is multifactorial with psychosocial factors of stressful life events, marital conflict and lack of social support being of high importance (Dennis & Doswell, 2013).

Risk factors associated with PPD, in relation to social support, are explicitly discussed in three articles.

Burke & Perndorfer (2016) conducted a qualitative study to assess the implications of motherhood-related and motherhood-unrelated support receipt for daily distress during pregnancy and test whether or not negative responsiveness to motherhood-related support predicts postpartum depression risk. Thirty-one women were recruited in three waves, surveyed and asked to keep a record of mood, stress, and support at 26-weeks gestation, 34-weeks gestation and four weeks postpartum (Burke & Perndorfer, 2016). Twenty-seven of the recruits completed two phases of the survey, while twenty-two recruits completed all three phases (Burke & Perndorfer, 2016). Although there was approximately 71% of participants who completed the three waves, all data collected was used for the study.

The average age of participants was 30.2 with 94% Caucasian and 64% with a bachelor's degree or higher (Burke & Perndorfer, 2016). A multilevel model analysis concluded that motherhood-related support predicted more significant increases in daily distress when compared to motherhood-unrelated support (Burke & Perndorfer, 2016). A follow-up regression analysis concluded that those who responded most negatively to motherhood-related support reported higher postpartum depression symptoms (Burke & Perndorfer, 2016). Although the participant demographic does not mimic that of the women's clinic, this study is relevant to the quality improvement by supporting the idea of lack of a support system increases a mother's risk for postpartum depression.

Leung, Letourneau, Giesbrecht, Ntanda & Hart (2017) utilized data from the Alberta Pregnancy Outcomes and Nutrition (APrON) study to determine the predictors of depression at three months postpartum while comparing depressed couples to couples with only one depressed

partner or no depressed partner. There were 2,189 pregnant women ≥ 16 years of age and at least 27-weeks gestation and their partners (1,417 men) recruited (Leung et al., 2017). The available participants included married or common-law couples (1,043 participants) with 846 couples having prenatal and postnatal data available for analysis (Leung et al., 2017). Of the participants, 78.5% were non-depressed couples, 9.5% were couples with a depressed mother, 9.8% were couples with depressed fathers, and 2.3% were couples with both parties depressed (Leung et al., 2017). The average age for women was 31.0 and men 33.0 (Leung et al., 2017). Of the participants,15.2% of the mothers had an EPDS score greater than or equal to ten prenatally and 11.8% postnatally (Leung et al., 2017). The fathers were 14% and 12.1% respectively (Leung et al., 2017).

The study included a social support questionnaire that focused on an emotional, instrumental, informational and affirmational support (Leung et al., 2017). In order to identify the predictors of each type of couple, a stepwise procedure was used to select covariates in the baseline category logit (BLC) model (Leung et al., 2017). The non-depressed couples are the baseline group for the BLC regression (Leung et al., 2017). In the depressed mother-non-depressed father pair, postnatal social support was a protective factor for PPD and associated with a lower chance of diagnosis (Leung et al., 2017). In the depressed father-non-depressed mother, low income, paternal smoking, history of prenatal paternal depression was associated with PPD, while social support decreased the odds (Leung et al., 2017). The depressed couple, low income and prenatal depression increased the odds of depression, while prenatal paternal social support demonstrated a decrease in PPD chances (Leung et al., 2017). Overall, the study revealed social support as a protective factor against PPD and is applicable to the QI initiative.

The retrospective study conducted by Nunes & Phipps (2013) assessed whether postpartum depression factors differed between adolescent and adult mothers. It was conducted from the Rhode Island Pregnancy Risk Assessment Monitoring System (RI PRAMS) and used to create predictive models of PPD symptoms (Nunes & Phipps, 2013). 6,959 women responded, divided by age group; 676 adolescents (15-19), 1,387 young adults (20-24), 1,735 adults (25-29), and 3,161 adults over 30 responded to the RI PRAMS (Nunes & Phipps, 2013). According to the study, race was not a factor of PPD amongst the adolescents, whereas, in mothers over 25, minorities had increased odds (Nunes & Phipps, 2013). Candidate risk factors for PPD included socio-demographics, maternal morbidity, neonatal outcomes, stressors, social support and pregnancy intention (Nunes & Phipps, 2013).

According to the study, the presence of social support across all ages reduced the odds of PPD symptoms (Nunes & Phipps, 2013). The study revealed that PPD symptoms in adolescents were most influenced by social support (Nunes & Phipps, 2013). In contrast, adult PPD symptoms were influenced by multiple risk factors such as pregnancy intention, race, stress, economics as well as social support (Nunes & Phipps, 2013). The study revealed that regardless of age, social support is still a key risk factor for PPD.

Complications of Postpartum Depression.

Postpartum depression has adverse consequences for the mother, child, and family. Research shows there can be a delay in the development of newborn physically, socially and cognitively (Ugarte et al., 2017). PPD is also associated with marital strain and social functioning (Werner, Miller, Osborne, Kuzava, & Monk, 2014). Nieto, Lara, and Navarrete (2017) conducted secondary data analysis to assess at-risk Mexican American women at six months for predictors of PPD in attempts to prevent maternal-child attachment disorders. There

was a convenience sample of 156 high-risk women utilized, divided into a control and intervention group equally (Nieto et al., 2017).

The study identified multiple variables affecting maternal attachment such as demographics, pregnancy intention, relationship with a partner, social support and a history of childhood sexual abuse (Nieto et al., 2017). Most importantly to the QI initiative, the study revealed an increase of impaired maternal-child attachment by a factor of 2.90 in women with low social support (Nieto et al., 2017). This article is relevant to the QI initiative because it relates to the patient population of the women's clinic. It also shows the need for support of the family and friends to prevent the complications associated with a lack of maternal-child bonding.

Rode & Kiel (2016) used a prospective observational design to survey 168 women during pregnancy and postpartum to examine maternal depression and its relationship to infant temperament. The participants included Caucasian (89%), African American/Black (6%), Hispanic/Latina (<2%), Asian American (<2%), and other (<2%) (Rode & Kiel, 2016). A condensed version of the Infant Characteristic Questionnaire (ICG) was created with 15 questions; the reliability of the screening tool was supported with a Cronbach alpha of .92 (Rode & Kiel, 2016). Excessive crying and fussiness, inadaptability, unpredictability, and negative affect are the behaviors associated with difficult infant temperament (Rode & Kiel, 2016). The data analysis proved that infant temperament was affected the most by maternal depression (sr^2= .124, p<.001) (Rode & Kiel, 2016). This study supports the need to reduce PPD complications snowball effect associated with PPD, infant temperament, and maternal attachment/role evaluation (Rode & Kiel, 2016).

Wouk, Stuebe, & Meltzer-Brody (2017) conducted a meta-analysis of the 2010-2011 Pregnancy Risk Assessment Monitoring System (PRAMS) to estimate the association between

PPD and breastfeeding. The data set consisted of 73,894 participants (Wouk et al., 2017). A multivariable logistic regression explored the association between pre-pregnancy mental health appointments, breastfeeding initiation, PPD and any or exclusive breastfeeding at three months (Wouk et al., 2017). The variables of measure included a history of depression or anxiety, PPD, postpartum anxiety breastfeeding outcomes and demographics (Wouk et al., 2017). Findings reported women at three months postpartum with PPD since birth had 0.79 times (95% CI 0.70, 0.88) the odds of initiating breastfeeding and even reduced odds of exclusive breastfeeding (Wouk et al., 2017). Exclusive breastfeeding is recommended for a minimum of six months by the World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF), but the data proves it is often jeopardized in women with PPD (World Health Organization [WHO], 2018).

The stigma associated with postpartum depression.

According to Gress-Smith, Lueken, Lemery-Chalfant, & Howe, 38% of new mothers of color will have PPD, and have a higher risk of complications associated with lacking treatment (Keefe, Brownstein-Evans, & Polmanteer, 2016). There is very little research addressing the cultural needs of women of color and postpartum depression (Keefe et al., 2016). A qualitative interview of 30 Christian, African American and Latina mothers with a history of PPD discuss how being active in the church, their faith and spiritual practices helped them heal (Keefe et al., 2016). The participants were 18 years or older, with at least one child and had experienced PPD symptoms (Keefe et al., 2016). Eleven of the women were currently pregnant (Keefe et al., 2016).

Frequent church attendance has been recognized as a PPD protector for women of color in previous studies because the church provides support, health education and assessment (Keefe

et al., 2016). Six themes were identified: relief from stress, feeling valued and less alone, experiencing gratitude, developing relationships, and preventing self-harm (Keefe et al., 2016). Women of color are less likely to take advantage of formal services for the management of PPD compared to white mothers (Keefe et al., 2016). The article encourages the reader to consider cultural differences in the management and prevention of PPD.

Frankhouser & Defenbaugh (2017) conducted an autoethnography or "…a type of qualitative research…" focusing on "…the individual story and describes, analyzes, and examines personal experiences to better understand larger cultural constructs" (Franhouser & Defenbaugh, 2017, p. 541). The autoethnography aims to study the perceived normalcy of the idea of intensive mothering, or the belief of providing continuous nurturing, expert guidance, and focusing on the child's needs above her own, resulting in an emotionally drained mother (Franhouser & Defenbaugh, 2017). The author collects, manages, analyzes and interprets data from memory, observation, reflections from self, as well as external data from literature and research (Franhouser & Defenbaugh, 2017).

The author is a white middle-class, highly educated woman (Franhouser & Defenbaugh, 2017). Four themes emerged: Intensive mothering: Isolated failures, Intensive mothering: essentialist guilt, Stigma: Avoiding help, and Stigma: For shame (Franhouser & Defenbaugh, 2017). Although the author does not fit the demographics of the QI initiative, studies show that lower-income minorities relate to the themes found in the article.

Boath, Henshaw, & Bradley (2013) conducted a qualitative study to exam teenage mothers with postpartum depression. They focused on their experiences, support needs and the opportunities for support and education from healthcare workers and peers (Boath et al., 2013).

Participants were 15, English-speaking, first-time mothers between 16 and 19 years old, with PPD; ten were single, four cohabitating and one married (Boath et al., 2013).

The study resulted in four themes: stigma and perceptions of being judged, social and professional support, knowledge and information, and barriers to utilizing support (Boath et al., 2013). Stigma was a consistent theme and led many of the participants to attempt to hide their symptoms of PPD due to fear of admitting how they felt, and the possibility of losing their children because they were unable to cope (Boath et al., 2013). The study revealed real and perceived stigmas associated with PPD and the need for innovative methods for PPD prevention and management.

Bodnar-Deren, Benn, Balbierz, & Howell (2017) addresses the stigma associated with PPD treatments amongst black and white women. The study utilized data from two postpartum depression randomized trials that included 481 women (30% black) (Bodnar-Deren et al., 2017). The study examined race, stigma and treatment acceptability using bivariate and multivariate analyses (Bodnar-Deren et al., 2017). Black were less likely to accept prescription medication (64 vs 81%, p=0.0001) and counseling (87 vs. 93%, p=0.001), but more like to utilize spiritual (70 vs 52%, p=0.0002) treatment (Bodnar-Deren et al., 2017). Blacks were less likely to be ashamed to report to friends and family members these same treatment options (Bodnar-Deren et al., 2017). The study revealed stigma was associated with lower PPD therapy acceptance, but it did not explain the low acceptance for all therapies amongst black women leading to the need for exploration of other factors (Bodnar-Deren et al., 2017).

Prenatal interventions for postpartum depression prevention.

There is a high incidence of depressive symptomology during the prenatal period. Thirty-three percent of women with PPD report depressive symptoms during the pregnancy (Hain,

Oddo-Sommerfeld, Bahlmann, Louwen, & Schermelleh-Engel, 2016). Zhao, Munro-Kramer, Shi, Wang, and Luo (2017) conducted a randomized controlled trial to evaluate the effects of prenatal depression interventions on birth outcomes and Chinese maternal postpartum health. Inclusion criteria for participation included an obstetric complication, high risk for PPD, less than 28 weeks gestation, and a primigravida, resulting in 342 (Zhao et al., 2017).

The intervention group (n=176) underwent a six-session psychoeducation program; five of the sessions focused on maternal mental health and the last on the husbands (Zhao et al., 2017). All participants completed a survey after 28 weeks, three days postpartum and 42 days postpartum (Zhao et al., 2017). The intervention group had a lower rate of Cesarean delivery and shorter third stage of labor ($p < .05$), less depression, more sleep, marital satisfaction, and less concern regarding care and breastfeeding the baby ($p < .05$) (Zhao et al., 2017). The study was successful in providing a prenatal psychological intervention as a preventative of adverse postpartum outcomes (Zhao et al., 2017).

Broberg et al. (2017) are conducting a randomized control trial to assess whether a group exercise session as a prenatal intervention increases psychological well-being in women with depression or a history of depression. The study has been in the implementation phase since 2016 and will complete in 2019 (Broberg et al., 2017). Inclusion criteria for the participants are singleton pregnant women 18 years or older with depression and anxiety, Danish-speaking, and 17-22 weeks gestation (Broberg et al., 2017).

The intervention group will have a 70-minute, in-hospital group exercise with 10-12 women, twice a week for 12 weeks (Broberg et al., 2017). While psychological well-being is the primary expectant outcome, there are five secondary outcomes to be measured: symptoms of depression, functional ability, clinical symptoms of anxiety, sleep quality and disturbance, and

pregnancy/delivery outcomes (Broberg et al., 2017). Although there is not any statistical analysis available, the study is expected to provide the evidence needed to implement a prenatal intervention to prevent PPD (Broberg et al., 2017).

Ramezani, Khosravi, Motaghi, Hamidzadeh, & Mousavi (2017) conducted a randomized control trial to evaluate the effects of a cognitive-behavioral approach and solution-focused counseling on the prevention of PPD. There were 85 Iranian nulliparous pregnant (30-35 weeks gestation) women that did not participate in childbirth preparation classes (Ramezani et al., 2017). The participants were randomly divided in to groups: cognitive-behavioral (n=25), solution-focused counseling (n=25), and control (n=35) (Ramezani et al., 2017). The cognitive behavioral group received four weekly counseling sessions, the solution-focused group received three weekly sessions, and the control group received routine obstetric services (Ramezani et al., 2017).

The participants were given the EPDS screening at fifteen days postpartum, and the scores revealed a significant difference between intervention groups and the control groups (Ramezani et al., 2017). There was a statistically significant (chi-sq=8.3, p=0.016) difference with four women (17.4%) with an EPDS score of >13 in the cognitive-behavioral group, two (8.7%) in the solution-focused group and thirteen (40.6%) in the control group. The results suggest that a prenatal preventative approach will decrease PPD and therefore is in line with QI initiative.

Support as an intervention for early recognition of Postpartum Depression.

Increased knowledge and early recognition of PPD are the goals of the prenatal education of support system. Often the mother is reluctant to verbalize her thoughts and concerns while suffering thru PPD. If the husband, partner, or someone close to the mother is educated on the

early warning signs of PPD, encouragement of the mother to seek help during the early phase could prevent long-term consequences (Zauderer, 2009).

Anokye, Acheampong, Budu-Ainooson, Obeng, & Akwasi (2018) produced a descriptive cross-sectional study design with a quantitative approach to determine the prevalence of PPD and effective interventions for management in Ghana. The study participants consisted of mothers (257) and healthcare workers (56) (Anokye et al., 2018). In order to screen for depression, a patient health questionnaire (PHQ) was utilized, and a closed-ended questionnaire was used to collect data on PPD interventions (Anokye et al., 2018).

Interventions for PPD used by the healthcare workers included psychosocial support (34%), cognitive therapy (18%), interpersonal psychotherapy (20%), and professionally based postpartum home visits (28%) (Anokye et al., 2018). According to Anokye et al., the interventions had no significant impact on PPD symptoms except psychosocial support (2018). Psychosocial support was the only intervention ($p=0.001$) found to have a significant influence on PPD symptomatology reduction (Anokye et al., 2018).

Kim and Dee (2017) conducted a descriptive cross-sectional study on rural Hispanic women and factors that affect self-care. The basis of the study is Orem's Self-care Deficit Nursing theory (Kim & Dee, 2017). The study sample size consisted of 223 women, ranging from 18 and 42 years old (Kim & Dee, 2017). Maternal age, social support, spirituality and the ability to care for self, were evaluated (Kim & Dee, 2017). Of the women at risk for PPD, perceived social support from significant others ($t(180.10) = -4.92, p < .01.$), family ($t(143.98) = -4.96, p < .01.$) and friends ($t(182.92) = -4.78, p < .01.$) was significantly less than those without a risk (Kim & Dee, 2017). The findings also revealed women at risk for PPD had a decreased ability for self-care: nutrition, psychological well-being, exercise and responsible

health practices directly related to social support from the significant other, family or friends (Kim & Dee, 2017).

Pilkington, Whelan, and Milne (2016) conducted a cross-sectional survey of first-time mothers (N=137) within the first year of giving birth to assess maternal crying as a sign of distress and request for support. The average age of the women was 32 years old (Pilkington et al., 2016). Mothers with a diagnosis of severe mental health disorders were excluded (Pilkington et al., 2016). Multiple scales were used to measure depression, postpartum partner emotional support, maternal crying, sleep quality, and sociodemographic (Pilkington et al., 2016). The frequency of crying and poor global sleep quality was correlated positively with depressive symptoms (Pilkington et al., 2016). There was a negative association between emotional support and PPD symptom severity; women who reported frequently crying with low partner support described more severe symptomatology (Pilkington et al., 2016).

The thematic analysis of the qualitative data in Sampson, Duron, Torres and Davidson's (2014) is a reliable indicator of the need for support system education and care of PPD. The study utilized focus group interviews of low-income African American women in Houston, Texas (Sampson et al., 2014). There were 16 participants with a mean age of 23 and an average annual income of $13,200 (Sampson et al., 2014). 75% of the participants reported a minimum of one episode of PPD (Sampson et al., 2014).

There were three focus groups conducted over three weeks, where each woman was asked four questions regarding PPD: "when I say PPD, what does it mean to you?," "what do other women, men, family, community say about PPD?," "what have people from your cultural group said about getting treatment from a therapist for PPD,?" and "what do you think might help or stop moms from getting help for depression after childbirth?" (Sampson et al., 2014).

Five themes were the result of the analysis: lack of support, differences between participants' own experiences and their perception of their community's beliefs about PPD, participants' perception of their community's belief that strong mothers do not catch PPD, a belief that mothers have everything to lose by seeking help for PPD and a need for culturally relevant education on PPD (Sampson et al., 2014). Although this was a small, homogeneous sample size, the themes are relevant to most women suffering from PPD.

Habel et al. (2015) conducted a qualitative-descriptive study with semi-structured individual interviews from 30 heterosexual couples with women scoring 12 or more on the Edinburg Postnatal Depression Scale (EPDS). The average age of the women and men were 32.5 and 35.0 years old (Habel et al., 2015). Both parties had to accept mental health assessments to be included (Habel et al., 2015). Over 50% of the participants were first-time parents (Habel et al., 2015).

There were nine causes identified as contributors to women's PPD symptoms: societal pressure, physical health concerns, transition to parenthood, social connectedness and support, personality and past psychological history, child health and temperament, unmet care needs, unmet birth expectations, and other life stressors (Habel et al., 2015). Both men and women reported a lack of support as a cause of PPD symptoms. In some of the interviews, the support received from those closest to the mother did not coincide with or meet the needs of the woman (Habel et al., 2015).

In summary, the relevant articles discussed PPD, its associated risk factors, associated stigma, prevention, and complications. The majority of the studies interviewed at risk or depressed mothers to gain knowledge of their perception of PPD and in their opinion, how

support is the most significant intervention. The data promotes the need for improved awareness and support from those closest to the mother during this mind-altering and life-changing phase.

Chapter 3. Methods

Project Setting

The QI initiative took place in a large women's health clinic in North Texas. The clinic provides Obstetric, Gynecologic, and Family Planning services to over 30,000 women annually. The clinic is staffed with seven APPs, six unit techs (UT), a licensed vocational nurse (LVN), four certified women's health educators (WHEs), a general clerk, five financial counselors, and an MHC.

Sampling and Data Collection Plans

The support system of the pregnant woman constitutes the target population for the project. The support system can be male or female, 18 years and older. Inclusion criteria are persons who speak English or Spanish and will have direct access to the patient. A power analysis was conducted to determine the recommended sample size. A sample size of 173 achieves 80% power to detect a mean of paired differences of 0.15 (pre:0.40 post:0.55) with an estimated standard deviation of differences of 0.7 and with a significance level.

A PPD packet was printed and given to each APRN for implementation. Each packet was marked with the coinciding APRN #1-6/ Test # 1-50 to keep track of which provider administered the test. The project manager kept a data log with the last four digits of the patient's medical record number, gestational age as well as the un-identifying support member demographics. The demographic data included relationship to the patient, age group, race, and educational level. This data was collected on the pretest.

Statistical Analysis Plans

Data analysis was a result of the interprofessional collaboration with the Biostatistician employed at the healthcare institution. After collecting the data, it was transcribed onto a

Microsoft Excel spreadsheet with each category of data coded (Appendix F); this includes the relationship to the patient, sex, age group, and educational level. For example, the relationship to the patient will have a code associated with it, i.e., Spouse/significant other-1, Mother-2, Mother in Law-3, and so forth. Each question and answer option to the pre/posttest questions was coded as well. A data dictionary and tables were provided to assist the Biostatistician.

The data was given to the Biostatistician; the descriptive analysis used percentages and means with standard deviations to describe demographic data. Categorical variables were evaluated using the Chi-square test between the pre and post questions. Continuous variables were evaluated using the paired t-test between the pre and post proportion correct. The project manager will interpret the analysis. The expectant outcome was to have a 15% increase in basic knowledge of PPD by the support system of the pregnant patient. The data analysis results were evaluated to determine if the outcome was met or if changes need to be made for future implementation.

Characteristics Likely to Influence Improvement

The predicted characteristics to influence the improvement of PPD knowledge in this QI initiative included patient visitor permission, support system literacy, support system level of interest and APP reliability. The APP's preparedness and enthusiasm to educate the support system had a significant impact on the outcome of the QI initiative.

Identification of the Intervention

The QI initiative was identified to improve the well-being of women, infants, and families as stated by Healthy People 2020 (U.S. Department of Health and Human Services [US DHHS], 2018). The intervention included utilizing information readily available to pregnant

women and transformed in order to focus the information on the support system's role and knowledge.

Planning of the Intervention and Its Components

Planning the intervention involved recognizing an area of improvement and developing a tool to address it. The educational tool needed to be given to the support system of pregnant women and ensure it was effective in improving the current knowledge. Presentation of the tool to the support system would be employed during the obstetric care visit by the APP after the pretest has been completed. PPD is reviewed throughout the pregnancy by the WHEs and APPs. Therefore, obstetric care visits were identified as the optimum time to educate the support system. Finally, a posttest will be administered after completion of the PPD education.

Planning the Study and Plans for Evaluation

The request for project permission was initiated on October 9, 2018, by submitting a project request to be reviewed by the Institutional Review Board (IRB) and the hospital system's Office of Research Administration in order to implement the project at the women's health clinic. Project approval was granted on October 16, 2018, and deemed a Quality Improvement Initiative at the health institution, and as such will not be formally supervised by the Institutional Review Board. The QI initiative was reviewed by the scholarly institution's Quality Improvement team in November 2018 and permission granted for initiation. There was not a requirement for patient identifying information besides the last four number of the medical record number (to avoid duplicates) and the gravida/parity. The data collected on the support system came from the pre and posttest. The data was used to determine the success of the project as measured by an average increase of 15% on the pre and posttest comparison.

Study Design and Approaches for Implementation

In this project, the project manager was the innovator in developing an educational pamphlet and a pre/posttest on PPD geared toward the support system. Developing these documents required the interprofessional collaboration with the APP, the MHC, and the certified Spanish translator. The information provided on the pamphlet was derived from evidence-based articles as mentioned in the literature review. The pamphlet defined PPD, provided signs and symptoms, and included treatment options and online resources. The verbiage was kept at a 3rd-grade reading level as measured by a CEFR B1 level and given to an 8-year-old male and bilingual female to check for readability (Education First [EF], 2018). The pre- and posttest were designed based on the information provided in the pamphlet. Five questions were constructed using True/False and multiple choice format. A Content Validity Index (CVI) using the Lynn method of analysis was conducted (Lynn, 1986). A panel of six subject matter experts evaluated the relevance of each item to the goal. Thus, the CVI for the current study was calculated to be 100% using six subject matter experts (Appendix G). The questions remained the same for both the pre and posttest but were reordered. The documents were translated into Spanish by a certified Spanish translator in the hospital system.

Implementation of the QI initiative involved administering the PPD packet to the support system of pregnant patients at the obstetric care visit. An in-service was conducted to the APPs and UTs of the clinic to explain the process of administering the documents and data collection. Each APP was administered implementation guidelines (Appendix D) and 50 packets containing a pretest, posttest, and pamphlet.

The 5-question pretest was administered to measure the level of understanding of PPD. The member of the support system was provided the pamphlet and a 5-minute educational

question and answer session on PPD. In order to measure the level of knowledge gained, a post-test was administered. The patients who were Spanish speaking required the use of the certified Spanish translator, or the institution provided language line. The documents were returned to the project manager for grading and data collection for analysis.

Project Objectives

The objectives of the postpartum depression educational program include:

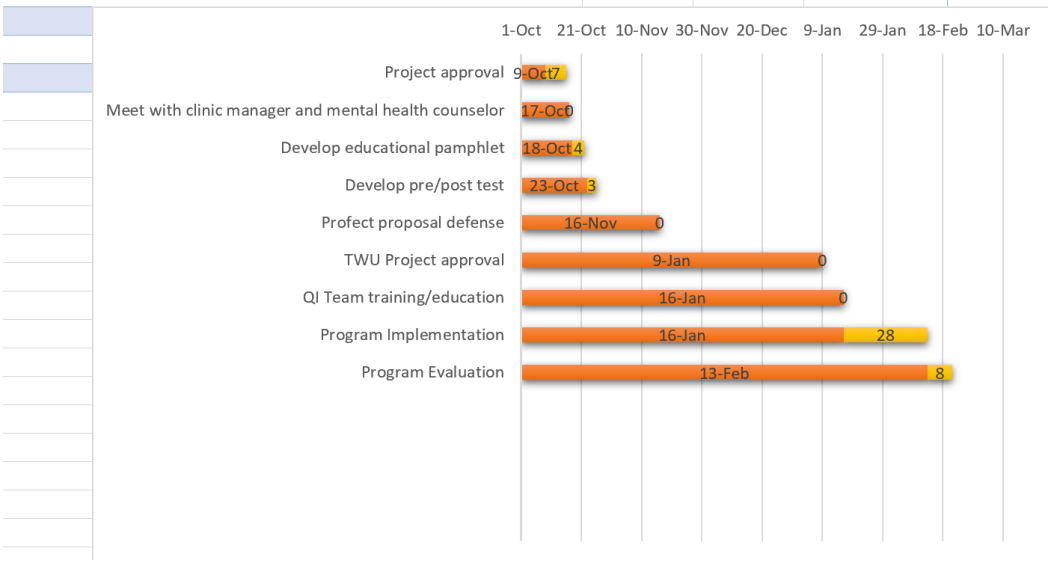
1. Provide postpartum depression education to the support system of the pregnant woman at the obstetric care visit.
2. Increase the support system's postpartum depression knowledge by an average of 15% as measured by a pre and post test

Timeline

The timeline for the QI initiative will take place from January 2019 when the data collection began until March 2019 when the results will be presented to the capstone committee. The feasibility and implementation of the project will be low maintenance due it being an extension of the current process. Specifics for the timeline are shown in *Table 1*.

Table 1. Gantt Chart PPD QI initiative

Task	Start Dat	Duration	End Date
Project approval	9-Oct	7	16-Oct
Meet with clinic manager and mental health counselor	17-Oct	0	17-Oct
Develop educational pamphlet	18-Oct	4	22-Oct
Develop pre/post test	23-Oct	3	26-Oct
Profect proposal defense	16-Nov	0	16-Nov
TWU Project approval	9-Jan	0	9-Jan
QI Team training/education	16-Jan	0	16-Jan
Program Implementation	16-Jan	28	13-Feb
Program Evaluation	13-Feb	8	21-Feb



SWOT Analysis

A *Strength*, *Weaknesses*, *Opportunities*, and *Threats* (SWOT) assessment was used to evaluate the PPD support system education initiative. The SWOT assessment examines internal and external attributes and threats in the quality improvement project (Moran, Burson, & Conrad,

2017). The strengths and weaknesses are shown in the SWOT analysis (*Figure 1*). A strength of the PPD support system education includes the incorporation of the family or support system in the care of the patient.

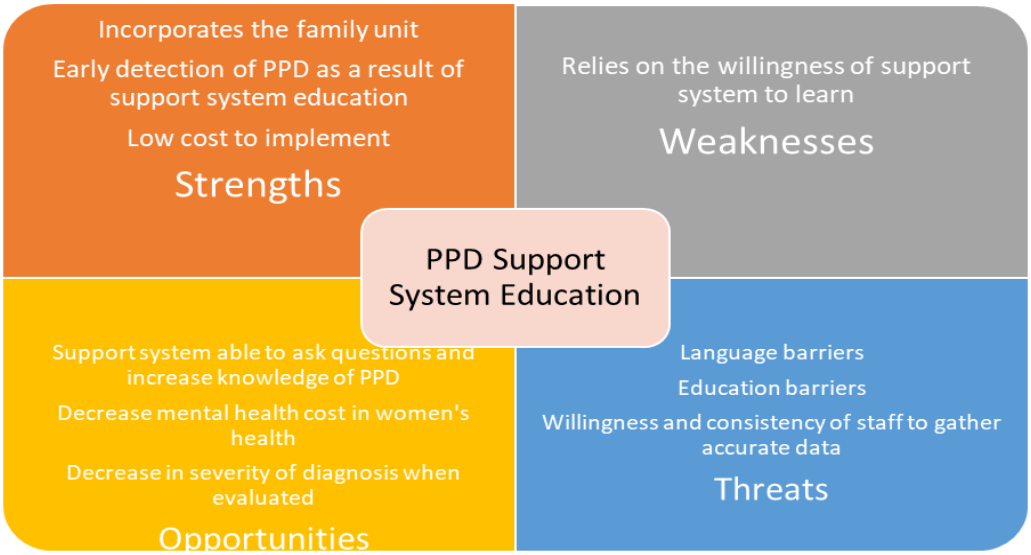


Figure 1. SWOT analysis of PPD quality improvement project. (Moran, Burson, & Conrad, 2017)

The inclusion of the family unit provides emotional support while promoting patient-centered care (Finkelman, 2018). This, in turn, will promote prevention and early detection of PPD at a low risk to the patient and low cost to the institution. The availability of APPs certified interpreters, and an on-site MHC provides a conducive environment for a successful project.

On the contrary, the project relies on the support system's willingness to learn and is a significant weakness and threat to the success of the project. The initiative provided an opportunity for the support system to ask questions to the provider and increase their awareness of PPD. It provided an opportunity for a decrease in women's mental health cost as well as complications associated with PPD. Potential threats or barriers to the project include non-English/non-Spanish speaking patients, persons with a low level of education/illiterate, and the consistency of the APP's to gather accurate information.

Congruence of Project to Organization Strategic Plan

The women's health clinic is a specialty clinic for a large health system. The health system has evidence-based policies and procedures in place that are in line with Healthy People 2020 and Pathways to Excellence. In the Maternal, Infant, Child health initiative, improving their well-being is a public health goal (US DHHS, 2018). This includes maternal mental health to prevent future public health concerns for "…families, communities, and health care systems" (US DHHS, 2018, para. 1). The education opportunities given to the pregnant woman on PPD is available throughout the obstetric care visits and during her postpartum hospitalization. The education is reinforced again during the postpartum clinic visit. During the obstetric care visits, implementation of the QI initiative to the support member would be in line with the organization.

Cost-Effectiveness Analysis

Postpartum depression is a population health concern, as evident by the recent congressional steps towards programs for education, diagnosis, and treatment. The proposed educational program is in alignment with the Texas task force for Maternal Mortality and Morbidity (Evans, 2017). The program provides support system education and provides a window of communication with the patient and support system. The QI initiative has the potential to decrease the time between diagnosis and treatment as well as decrease the number of patients referred out due to more severe symptoms and complications. Comparative effectiveness research (CER) approach is appropriate to this initiative because this is a complementary approach to PPD education compared to the current policy. It allows the institution to evaluate an alternative means to improve PPD awareness in the community, all while reducing detrimental PPD complications. A CER emphasizes effectiveness and may not necessarily focus on cost,

understanding that the benefit outweighs the cost of implementation (Finkler, Jones, & Kovner, 2013).

Guiding Framework

The healthcare institution utilizes the Iowa Model of Evidence-Based Practice as the conceptual model and a guiding framework for organizing practice changes to enhance the quality of care provided to the patient population (White, Dudley-Brown, & Terhaar, 2016). The Iowa Model of Evidence-Based Practice was developed by registered nurses in 1994 and revised in 2001, as a decision-making algorithm to utilize research findings to improve quality of care (White et al., 2016). The Iowa Model is a seven-step process summarized in *Figure 2*. The QI initiative will be following the steps of the Iowa Model to promote population/community health and prevention.

Figure 2. Iowa Model of EBP: PPD education initiative

To implement the expansion of postpartum depression education to the support system of the patient, the quality improvement tool *Plan Do Study Act*, or PDSA will be used (*Figure 3*).

The PDSA is a rapid-cycle change method, used to assist in responding to change and planning (Finkelman, 2018). In the *Plan* step, the objectives are determined as well as the predictions of what will happen (Finkelman, 2018). For this initiative, postpartum depression awareness in the community was an area of improvement. In the planning phase, the project manager produced an educational pamphlet focused on the role and education of the support system. The goal of the initiative is the immediate increase of PPD education by 15% as measured by a pre and posttest.

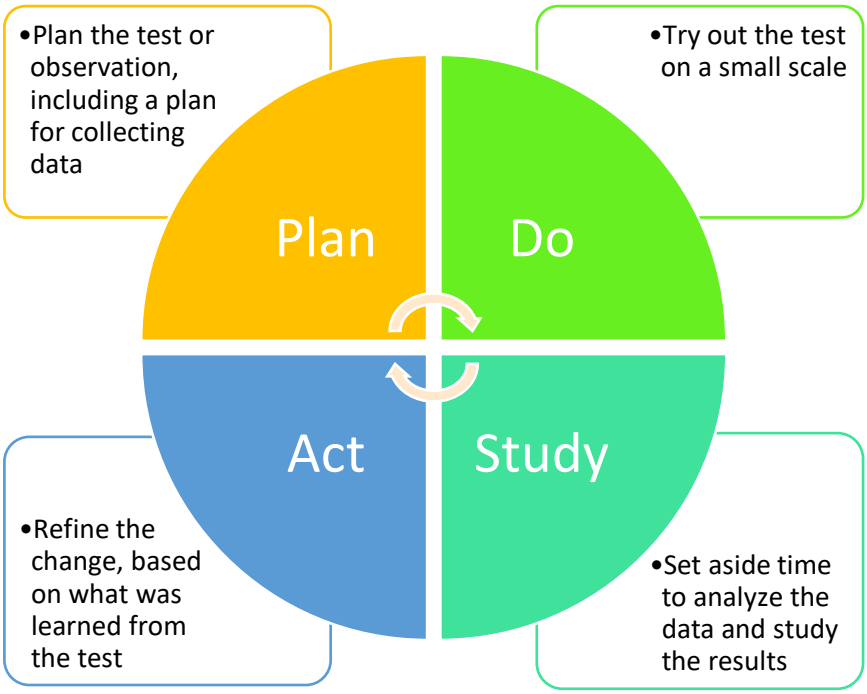


Figure 3. PDSA change model. This figure illustrates how the quality improvement tool will be utilized for the project (Finkelman, 2018).

The *Do* step is implementing the planned change as a pilot test (Finkelman, 2018). The QI initiative was implemented over four weeks to the support system of the obstetric patients at a North Texas women's health clinic. The *Study* step is focused on collecting and analyzing data to compare with the predictions made in the *Plan* step (Finkelman, 2018). After gathering the data, it was analyzed to determine if the goal was met and to recognize the areas of improvement. The

final step is *Act*, where the change is adjusted based on the analysis, then implemented into the next pilot test or a change made to the more extensive system (Finkelman, 2018).

In summary, the support system plays a crucial role in the maintenance of maternal mental health. The QI initiative will ensure that the support system has a basic knowledge of PPD while promoting awareness and prevention.

Chapter 4. Results/Outcomes

Study Question

In the support system of the pregnant woman, would educating on postpartum depression via a pamphlet, increase their awareness and knowledge on the subject matter and promote improved community mental health?

Implementation of the Intervention

Phase 1 – Approval of the intervention. On November 16, 2018, the project manager presented the scholarly project at the proposal, and the changes to the initiative were determined. The committee members approved the QI initiative proposal. It was submitted to the Texas Woman's University QI panel November 19, 2018. The project was deemed QI and approved by the panel on January 9, 2019.

Phase 2 – Data collection. The project manager gave an implementation in-service to the participants on January 16, 2019. Participants included the project manager, APPs, UTs, and the MHC of the project setting. The APPs were given the implementation guidelines and 50 packets. Each role associated with implementation was discussed. Data collection began on January 16, 2019 and completed on February 13, 2019.

Phase 3 – Analysis of data. The data collected was analyzed and results interpreted in February of 2019. Participants for this phase include the project manager and the health institution's Biostatistician. The project manager organized the data and collaborated with the Biostatistician for the utilization of statistical methods to determine the outcome of the initiative.

Phase 4 – DNP scholarly project defense. On March 8, 2019, the project manager will defend the DNP scholarly project to the TWU DNP scholarly project committee. Changes to the QI initiative exposition will be determined.

Phase 5 – Plan for dissemination. In April of 2019, the project manager will present the QI initiative to the TWU Graduate Student Research Symposium. The project manager will present the QI initiative at the health institution educational update for APPs.

Measurements of Each Objective

There were two measurements for each objective. The measurements were as follows:

- To encourage community mental health by sampling a minimum of 178 members of the community
- To determine if the pamphlet provided PPD awareness and education to the support system of the pregnant patient.

Descriptive Statistics

The demographic data were collected from the supports systems of pregnant patients ranging from 5 weeks to 40 weeks gestational age (Table 21). The descriptive data of the participants included sex, language spoken, age group, race/ethnicity, the relationship to the patient, and educational level. The QI initiative was conducted over four weeks with a total of 183 participants in the North Texas women's health clinic. The data dictionary for the variables is included (Appendix E).

Table 2. Gestational Age

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Gestational age	182	5	40	25.10	10.054

The participants were made up of 56.8% males and 43.2% females (Table 3). Similar to the sex breakdown was the distribution of the language with 52.5% of the participants speaking Spanish (Table 4).

Table 3. Sex

Sex			
		Frequency	Percent
Valid	Male	104	56.8
	Female	79	43.2
	Total	183	100.0

Table 4. Language

Language			
		Frequency	Percent
Valid	English	87	47.5
	Spanish	96	52.5
	Total	183	100.0

The age of the participants was divided into four groups with the majority of the participants falling into the 18-25 range (30.1%), followed by the 31-40 range (21.9%). The smallest age group was 26-30 (16.9%). Twenty-two of the participants did not disclose their age group (Table 5).

Table 5. Age Group

Age Group			
		Frequency	Percent
Valid	Blank	22	12.0
	18-25	55	30.1
	26-30	31	16.9
	31-40	40	21.9
	41+	35	19.1
	Total	183	100.0

Race/Ethnicity was divided into six categories: White/Caucasian, Black/African American, Hispanic/Latino, Native American/American Indian, Asian/Pacific Islander, and

Other (Table 6). All participants were identified as White/Caucasian (2.7%), Black/African American (14.2%), Hispanic/Latino (79.8%), or Other (1.6%).

Table 6. Race/Ethnicity

Race/Ethnicity			
		Frequency	Percent
Valid	Blank	3	1.6
	White/Caucasian	5	2.7
	Black/African American	26	14.2
	Hispanic/Latino	146	79.8
	Other	3	1.6
	Total	183	100.0

The support system includes anyone helping the patient. The relationship of the participant to the patient was divided into ten categories: Husband/Significant Other, Mother, Mother in law, Sister, Child, Friend, Father, Sister in law, Aunt, and Other (Table 7). Over half of the participants were the Husband/Significant other (58.5%) of the patient. The smallest categories included Child, Father, and Other (.5%).

Table 7. Relationship to the patient

Relationship			
		Frequency	Percent
Valid	Blank	2	1.1
	Husband/Significant Other	107	58.5
	Mother	44	24.0
	Mother in law	4	2.2
	Sister	9	4.9
	Child	1	.5
	Friend	6	3.3
	Father	1	.5
	Sister in law	4	2.2
	Aunt	4	2.2
	Other	1	.5
	Total	183	100.0

The final description was the level of education divided into seven categories: None, Middle School, Some High School, High School/GED, Some College, College Graduate, and Masters/Doctorate (Table 8). Thirteen participants did not respond. Majority of the participants were High School Graduates or had a GED (31.7%), whereas the smallest group of participants was the Masters/Doctorates degree category at .5%.

Table 8. Level of Education

Education			
		Frequency	Percent
Valid	Blank	13	7.1
	None	10	5.5
	Middle school	14	7.7
	Some High School	47	25.7
	High School/GED	58	31.7
	Some College	33	18.0
	College Graduate	7	3.8
	Masters/Doctorates	1	.5
	Total	183	100.0

Upon final review of the demographic data, the project manager did not find any unexpected results. The results were similar to the patient demographics of the clinic. Of interest was the low percentage of completion of higher education at 4.3% of the participants.

Statistical Methods and Analysis

Ethical implications. The initiative was presented to the hospital system's Office of Research Administration and deemed a quality improvement project and therefore exempt from formal supervision by the institutions IRB. The QI initiative was reviewed by the scholarly institution's Quality Improvement Board and was exempt from IRB review. The data collection did not include any identifying information; therefore the risk to the participants was minimal.

Methods of evaluation. A priori power analysis was conducted to determine the minimum sample size. It was determined that a minimum sample size of 173 achieves 80% power to detect a mean of paired differences of 0.15 (pre:0.40 post:0.55) with an estimated standard deviation of differences of 0.7 and with a significance level (alpha) of 0.05 using a two-sided paired t-test. Descriptive analysis used percentages and means with standard deviations to describe demographic data. Categorical variables were evaluated using the Chi-square test between the pre and post questions. Continuous variables were evaluated using t-test between the percentage of pre and post proportion correct.

Instruments used to assess effectiveness. A pre and posttest was created to assess the effectiveness of the educational pamphlet. The test included five questions rearranged in order (see Appendix C and Appendix D). The Lynn method of analysis was conducted and produce a CVI of 100% using six subject matter experts (Lynn, 1986).

Methods used to ensure quality. To ensure the quality of data collection, the project manager gathered the test from the APPs and entered the data into an Excel spreadsheet daily. The data was checked weekly and once again before transferring to the IBM SPSS v.25 for statistical analysis. The statistical analysis and results were reviewed by the Biostatistician for accuracy.

Data analysis and statistical methods. Cross-tabulations analyzed the data with Chi-square utilizing multiple variables of the pre and post-test to determine the knowledge of the participant on postpartum depression. The components of time included the participant's knowledge before and after receiving the intervention. The data entered into the five Chi-Square cross tabulation tables demonstrate the answers provided pre and post the intervention.

Expected versus actual outcome. In this QI initiative, the expected outcome was to increase the knowledge of PPD in the support system of the pregnant patient. As a result of the

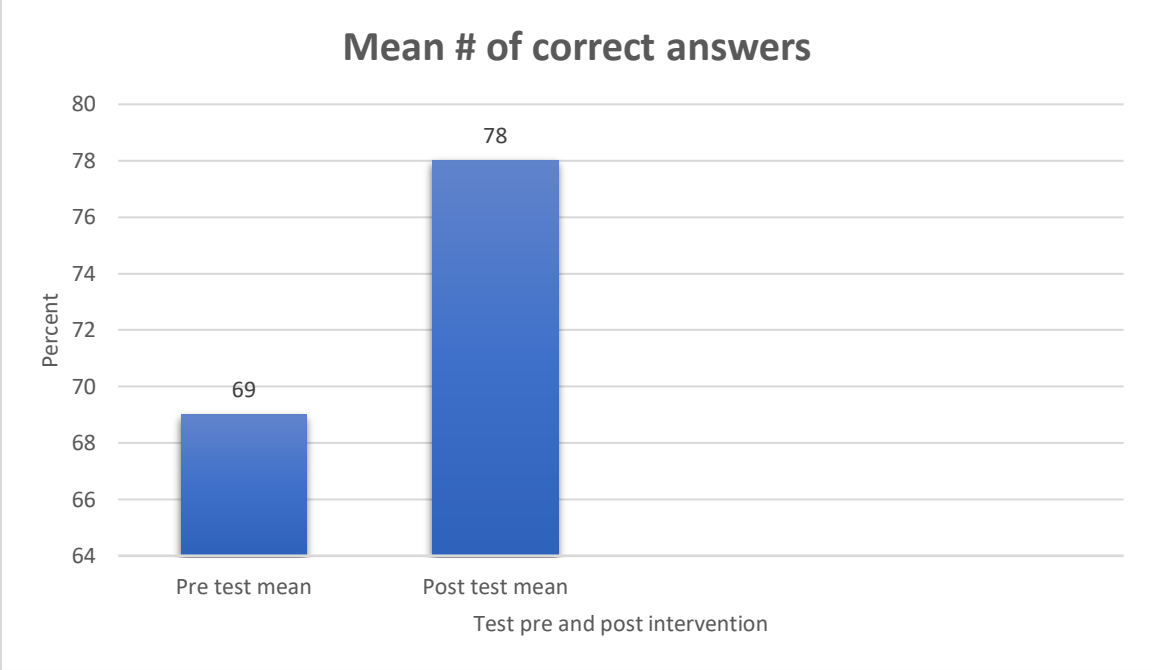


Figure 3. Comparison of mean number of correct answers

QI initiative, there was an 8.89% increase in knowledge (Figure 3). While this is an increase, unfortunately, the goal of a 15% increase in knowledge was not obtained.

Quality Indicators and Resources

The Biostatistician from the health care institution served as the quality resource for the QI initiative. His role in the statistical analysis and confirmation of accuracy ensured that the results of the study were valid.

Barriers

Barriers to the success of the QI initiative included the APPs willingness to implement the intervention into practice. Increased time spent with the patient and her support system was another barrier. A final barrier was the illiteracy or unwillingness of the support system member to read the questions and pamphlet.

In summary, statistical methods and analysis were utilized to answer the research question. The QI initiative was IRB exempt and had very low risk to the participants. The quality resource was identified, and barriers were addressed.

Chapter 5. Discussion

Interpretation of Findings

A Chi-square test for independence was performed using cross-tabulation tables to examine the relationship between the pre and post responses. The tables vary in the number of variables based on the configuration of the question. It was predicted that the QI initiative would increase the knowledge of PPD. All five cross tabulation tables resulted in a Chi-square p-value <0.01, indicating strong evidence of dependence between the pre and post questions (Table 9, 10, 11, 12, 13).

Regarding the *All women are at risk of postpartum depression* question, there were 26 participants who answered the question incorrectly prior to the intervention. After the intervention, 18 of those participants answered the question correctly after the intervention. The Pearson Chi-Square value of this particular question was 16.738 with an associated significance value of .002. Therefore one can conclude the results of the question answered before the intervention compared to after are significant. There is a medium effect size of this particular question as measured by the phi coefficient (.302) and Cramer's V (.214) statistics. This indicates a significant association between both pre and post responses.

Regarding the *Postpartum depression is the same as postpartum blues* question, there were 106 participants who answered the question incorrectly prior to the intervention. After the intervention, 32 of those participants answered the question correctly after the intervention. The Pearson Chi-Square value of this particular question was 60.044 with an associated significance value of .000. Therefore one can conclude the results of the question answered before the intervention compared to after are significant. There is a large effect size of this particular

question as measured by the phi coefficient (.573) and Cramer's V (.405) statistics. This indicates a significant association between both pre and post responses.

Table 9. Cross Tabs 3x3 with Chi-Square Test

All women are at risk of postpartum depression (PRE). * All women are at risk of postpartum depression (POST).						
			All women are at risk of postpartum depression (POST).			
			Blank	True	False	Total
All women are at risk of postpartum depression (PRE).	Blank	Count	0	1	0	1
		% of Total	0.0%	0.5%	0.0%	0.5%
	True	Count	1	146	9	156
		% of Total	0.5%	79.8%	4.9%	85.2%
	False	Count	0	18	8	26
		% of Total	0.0%	9.8%	4.4%	14.2%
Total		Count	1	165	17	183
		% of Total	0.5%	90.2%	9.3%	100.0%

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.738[a]	4	.002
Likelihood Ratio	12.492	4	.014
Linear-by-Linear Association	15.714	1	.000
N of Valid Cases	183		

a. 6 cells (66.7%) have expected count less than 5. The minimum expected count is .01.

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.302	.002
	Cramer's V	.214	.002
	Contingency Coefficient	.289	.002
N of Valid Cases		183	

Table 10. Cross Tab 3x3 with Chi-Square Test

Postpartum depression is the same as postpartum blues (PRE). * Postpartum depression is the same as postpartum blues (POST).						
			Postpartum depression is the same as postpartum blues (POST).			
			Blank	True	False	Total
Postpartum depression is the same as postpartum blues (PRE).	Blank	Count	2	0	7	9
		% of Total	1.1%	0.0%	3.8%	4.9%
	True	Count	1	74	32	107
		% of Total	0.5%	40.4%	17.5%	58.5%
	False	Count	1	15	51	67
		% of Total	0.5%	8.2%	27.9%	36.6%
Total		Count	4	89	90	183
		% of Total	2.2%	48.6%	49.2%	100.0%

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	60.044[a]	4	.000
Likelihood Ratio	54.786	4	.000
Linear-by-Linear Association	18.558	1	.000
N of Valid Cases	183		

a. 5 cells (55.6%) have expected count less than 5. The minimum expected count is .20.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.573	.000
	Cramer's V	.405	.000
	Contingency Coefficient	.497	.000
N of Valid Cases		183	

Regarding the *Postpartum depression affects the baby* question, there were 20 participants who answered the question incorrectly prior to the intervention. After the intervention, 12 of those participants answered the question correctly after the intervention. The Pearson Chi-Square value of this particular question was 27.648 with an associated significance value of .000. Therefore one can conclude the results of the question answered before the intervention compared to after are significant. There is a medium effect size of this particular question as measured by the phi coefficient (.389) and Cramer's V (.275) statistics. This indicates a significant association between both pre and post responses.

Regarding the *How is postpartum depression treated* question, there were 56 participants who answered the question incorrectly prior to the intervention. After the intervention, 31 of those participants answered the question correctly after the intervention. The Pearson Chi-Square value of this particular question was 94.105 with an associated significance value of .000. Therefore one can conclude the results of the question answered before the intervention compared to after are significant. There is a large effect size of this particular question as measured by the phi coefficient (.717) and Cramer's V (.414) statistics. This indicates a significant association between both pre and post responses.

Regarding the *Which of the following are signs of postpartum depression* question, there were 48 participants who answered the question incorrectly prior to the intervention. After the intervention, 24 of those participants answered the question correctly after the intervention. The Pearson Chi-Square value of this particular question was 213.599 with an associated significance value of .000. Therefore one can conclude the results of the question answered before the intervention compared to after are significant. There is a large effect size of this particular question as measured by the phi coefficient (1.080) and Cramer's V (.540) statistics. This indicates a significant association between both pre and post responses.

The paired sample t-test was used to compare the percent of correct answers received on the pre and posttest (Table 14). There was a statistically significant increase in the percentage of correct answer from the pretest (M = .6934, SD = .205) to the post-test (M = .7813, SD = .199), t (181) = -5.775, p < 0.01(two-tailed). The mean increase in the percentage of correct answers was 8.89% with a 95% confidence interval ranging from -.118 to -.058. The eta squared statistic (.16) indicated a large effect size.

Table 11. Cross Tab 3x3 with Chi-Square Test

Postpartum depression affects the baby (PRE). * Postpartum depression affects the baby (POST).						
			Postpartum depression affects the baby (POST).			
			Blank	True	False	Total
Postpartum depression affects the baby (PRE).	Blank	Count	0	1	0	1
		% of Total	0.0%	0.5%	0.0%	0.5%
	True	Count	2	152	8	162
		% of Total	1.1%	83.1%	4.4%	88.5%
	False	Count	0	12	8	20
		% of Total	0.0%	6.6%	4.4%	10.9%
Total		Count	2	165	16	183

	% of Total	1.1%	90.2%	8.7%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	27.648[a]	4	.000
Likelihood Ratio	18.216	4	.001
Linear-by-Linear Association	24.214	1	.000
N of Valid Cases	183		

a. 6 cells (66.7%) have expected count less than 5. The minimum expected count is .01.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.389	.000
	Cramer's V	.275	.000
	Contingency Coefficient	.362	.000
N of Valid Cases		183	

Table 12. Cross Tab 4x5 with Chi-Square test

How is postpartum depression treated (PRE)? * How is postpartum depression treated (POST)? Crosstabulation								
			How is postpartum depression treated (POST)?					Total
			Blank	Medication only	Counseling only	Counseling and/or medication	There is no treatment	
How is postpartum depression treated (PRE)?	Medication only	Count	0	4	1	8	0	13
		% of Total	0.0%	2.2%	0.5%	4.4%	0.0%	7.1%
	Counseling only	Count	0	1	14	13	1	29
		% of Total	0.0%	0.5%	7.7%	7.1%	0.5%	15.8%
	Counseling and/or medication	Count	1	1	6	117	2	127
		% of Total	0.5%	0.5%	3.3%	63.9%	1.1%	69.4%
	There's no treatment	Count	0	0	1	10	3	14
		% of Total	0.0%	0.0%	0.5%	5.5%	1.6%	7.7%
Total		Count	1	6	22	148	6	183
		% of Total	0.5%	3.3%	12.0%	80.9%	3.3%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	94.105[a]	12	.000
Likelihood Ratio	58.390	12	.000
Linear-by-Linear Association	29.942	1	.000
N of Valid Cases	183		

a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .07.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.717	.000
	Cramer's V	.414	.000
	Contingency Coefficient	.583	.000
N of Valid Cases		183	

Table 13. Cross Tab 7x5

Which of the following are signs of postpartum depression (PRE)? * Which of the following are signs of postpartum depression (POST)?								
			Which of the following are signs of postpartum depression (POST)?					Total
			Blank	Crying often	Avoiding family/friends	all of the above	Partially correct	
Which of the following are signs of postpartum depression (PRE)?	Blank	Count	0	0	0	2	0	2
		% of Total	0.0%	0.0%	0.0%	1.1%	0.0%	1.1%
	Crying often	Count	0	20	0	20	1	41
		% of Total	0.0%	10.9%	0.0%	10.9%	0.5%	22.4%
	Avoiding family/friends	Count	0	1	2	3	1	7
		% of Total	0.0%	0.5%	1.1%	1.6%	0.5%	3.8%
	No desire to take a bath	Count	0	0	1	0	0	1
		% of Total	0.0%	0.0%	0.5%	0.0%	0.0%	0.5%
	Forgetful	Count	0	0	0	1	0	1
		% of Total	0.0%	0.0%	0.0%	0.5%	0.0%	0.5%
	all of the above	Count	2	2	0	116	3	123
		% of Total	1.1%	1.1%	0.0%	63.4%	1.6%	67.2%
	Partially correct	Count	0	0	1	1	6	8
		% of Total	0.0%	0.0%	0.5%	0.5%	3.3%	4.4%
Total		Count	2	23	4	143	11	183
		% of Total	1.1%	12.6%	2.2%	78.1%	6.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	213.599[a]	24	.000
Likelihood Ratio	113.119	24	.000
Linear-by-Linear Association	45.924	1	.000
N of Valid Cases	183		

a. 28 cells (80.0%) have expected count less than 5. The minimum expected count is .01.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	1.080	.000
	Cramer's V	.540	.000
	Contingency Coefficient	.734	.000
N of Valid Cases		183	

Table 14. Paired T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre Correct percentage	.6934	182	.20454	.01516
	Post Correct percentage	.7813	182	.19912	.01476

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre Correct percentage - Post Correct percentage	-.08791	.20536	.01522	-.11795	-.05788	-5.775	181	.000

The results of each table are compounded into *Table 15*. The largest knowledge increase was by 18.6% for the question *Postpartum depression is the same as postpartum blues*, followed by *How is postpartum depression treated* (17%). The least amount of knowledge gained was from Postpartum depression affects the baby (6.7%) yet it has the highest percentage of correct responses (84.4%).

Table 15. Result of knowledge gained

	Both correct	Pre correct Post not correct	Pre not correct and post correct (learn)	Both not correct
All women are at risk of postpartum depression	146 (80.7%)	9 (5%)	18 (9.9%)	8 (4.4%)
Postpartum depression is the same as postpartum blues	51 (29.7%)	15 (8.7%)	32 (18.6%)	74 (43%)
How is postpartum depression treated	117 (64.3%)	9 (4.9%)	31 (17%)	25 (13.7%)
Which of the following are signs of postpartum depression	116 (69.9%)	2 (1.2%)	24 (14.5%)	24 (14.5%)
Postpartum depression affects the baby	152 (84.4%)	8 (4.4%)	12 (6.7%)	8 (4.4%)

Limitations and Recommendations

Limitations of the QI initiative included the exclusion of persons who did not speak English or Spanish as their first language. As a result, there was no representation from other foreign languages. Another limitation associated was the inability to observe the implementation process with all APPs to ensure consistency. The clinic location limited the cultural representation with approximately 80% of the participants being of one race/ethnicity. A final limitation was the lack of educational diversity. The results of the study may have been different in an area with more persons of higher education.

For future studies, it is recommended to extend the study time to gather more data. It is also recommended to implement the study in other women's health clinics to include a more diverse population. The women's health center can implement this tool to also increase mental health referrals and evaluations in order to decrease associated complications.

DNP Role Implications

The QI initiative allowed the project manager to integrate the foundational doctoral competencies, the Doctor of Nursing Practice (DNP) Essentials into practice (Zaccagnini & White, 2017). The DNP essentials addressed in the initiative include Essentials I, II, III, VI, VII, and VIII.

Essential I: Scientific Underpinnings for Practice. The essential focus on the integration of nursing science, organization science, ethical, biophysical, psychosocial, and analytical knowledge as the basis for the highest level of nursing (American Association of Colleges of Nursing [AACN], 2006). The initiative allowed the DNP candidate to acknowledge a health care delivery gap in community education on postpartum depression. The initiative

developed a new approach, utilizing nursing theories to improve the current process while evaluating the outcome for future implementation.

Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking. The essential focus on effective strategies for addressing healthcare disparities on an organizational level (AACN, 2006). The DNP candidate had to focus on the needs of the community in which she served and develop an initiative promoting improved patient health while remaining in line with the organizational goals and policies. The DNP candidate had to be cognizant of the ethical, financial, and cultural risks associated with implementation.

Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice. The essential focus on scholarly nursing practice to discover and implement evidence-based practice to improve health outcomes (AACN, 2006). The initiative allowed the DNP candidate to translate nursing research into practice by designing and implementing a quality improvement project to enhance maternal mental health promotion and disseminate the new knowledge to other advanced practice providers.

Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes. The essential has collaboration between professionals to enhance health outcomes as the focal point. The DNP candidate led a collaborative team of a Mental Health Counselor, Advanced Practice Providers, and support staff to design and implement a quality improvement initiative. The initiative not only brought about awareness in the community, but it increased awareness of available resources.

Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health. The essential focus on the promotion of population health. The quality

improvement initiative is in line with the Healthy People 2020 Maternal, Infant, Child Health initiative promoting maternal mental health awareness and education. The DNP candidate analyzed the clinic data on postpartum depression and synthesized psychosocial and cultural dimensions to develop, implement and evaluate the intervention for population health promotion.

Essential VIII: Advanced Nursing Practice. The essential focus on the expert assessment skills and provide comprehensive practice utilizing biophysics, psychosocial, behavioral, culture, economic aspects and nursing science (AACN, 2006). The DNP candidate developed, implemented and evaluated the QI initiative to improved health outcomes. The DNP candidate established therapeutic relationships with the patients and their support systems to enable postpartum depression awareness in the community.

Plan for Dissemination

The initiative and the results of the study will be presented at the Texas Woman's University Graduate Research Symposium in April 2019. Another presentation will be held at the health care institution's Advanced Practice Provider's quarterly update in May 2019 amongst physicians, advanced practice nurses, nurse leaders, support staff, women's health educators and mental health counselors.

In summary, the project manager presented the interpretations of the statistical analysis presented in Chapter 4. The limitations and recommendations for future implementation were addressed. The DNP role implications were explained and plans for dissemination revealed.

Conclusion

In America, one in every ten women will experience postpartum depression symptoms (HHS, n.d.). The literature reveals low social support to be a predictor for postpartum depression in numerous studies. Yet there is very little education focused on the role of the support system in the prevention and awareness of PPD. The APP plays a fundamental role in educating both the patient and her support system on the mental illness to promote maternal, infant, and population health. During the implementation, the project manager had increased dialogue with the support system, more so the significant other of the patient. The QI initiative not only promoted increased knowledge and awareness, but it encouraged a quality of health partnership between the patient, family, and the provider. The QI initiative did not meet the goal of 15% increase, but it had a positive impact on the knowledge and awareness of PPD by the support system. There were limitations with the initiative but will hopefully be a building block to future research and ingenuities to encourage support system education.

References

American Association of Colleges of Nursing. (2006). The essentials of doctoral education for Advanced Nursing Practice. Retrieved from https://www.aacnnursing.org/Portals/42/Publications/DNPEssentials.pdf

Anokye, R., Acheampong, E., Budu-Ainooson, A., Obeng, E., & Akwasi, A. (2018, May 9). Prevalence of postpartum depression and interventions utilized for its management. *Annals of General Psychiatry*, *17*(1). https://doi.org/http://dx.doi.org/10.1186/s12991-018-0188-0

Boath, E., Henshaw, C., & Bradley, E. (2013, September). Meeting the challenges of teenage mothers with postpartum depression: overcoming stigma through support. *Journal of Reproductive & Infant Psychology*, *31*(4), 352-369. https://doi.org/http://dx.doi.org/10.1080/02646838.2013.800635

Bodnar, S., Benn, E., Balbierz, A., & Howell, E. (2017, July). Stigma and postpartum depression treatment acceptability among black and white women in the first six-months postpartum. *Maternal & Child Health Journal*, *21*(7), 1457-1468. https://doi.org/http://dx.doi.org/10.1007/s10995-017-2263-6

Broberg, L., Backhausen, M., Damm, P., Bech, P., Tabor, A., & Hegaard, K. (2017, May 5). Effect of supervised exercise in groups on psychological well-being among pregnant women at risk of depression (the EWE study): Study protocol for a randomized controlled trial. *Trials*, *18*, 1-10. https://doi.org/http://dx.doi.org/10.1186/s13063-017-1938-z

Burke, C., & Perndorfer, C. (2016, September). Negative emotional responses to motherhood-related support receipt during pregnancy predict postpartum depressive symptoms.

Anxiety, Stress & Coping, *29*(5), 580-588. https://doi.org/http://dx.doi.org/10.1080/10615806.2015.1092023

Dennis, C. L., & Doswell, T. (2013). Psychosocial and psychological interventions for preventing postpartum depression (Review). *Cochrane Database of Systematic Reviews*. http://dx.doi.org/10.1002/14651858.CD001134.pub3

Drury, S. S., Scaramella, L., & Zeanah, C. H. (2016). The neurobiological impact of postpartum maternal depression: Prevention and intervention approaches. *Child & Adolescent Clinics*, *25*, 179-200. http://dx.doi.org/http://dx.doi.org/10.1016/j.chc.2015.11.001

Education First. (2018). The CEFR and EF SET. Retrieved from https://www.efset.org/english-score/cefr/b1/

Evans, M. (2017). Postpartum depression screening bill gets Abbott's signature. Retrieved from https://www.texastribune.org/2017/06/15/postpartum-depression-screening-bill-gets-abbotts-signature/

Finkelman, A. (2018). *Quality improvement: A guide for integration in nursing*. Burlington, MA: Jones & Bartlett Learning.

Finkler, S. A., Jones, C. B., & Kovner, C. T. (2013). *Financial management for nurse managers and executives* (4th ed.). St. Louis, MO: Elsevier Saunders.

Frankhouser, T., & Defenbaugh, N. (2017, November/December). An autoethnographic examination of postpartum depression. *Annals of Family Medicine*, *15*(6), 540-545. https://doi.org/http://dx.doi.org/10.1370/afm.2107

Habel, C., Feeley, N., Hayton, B., Bell, L., & Zelkowitz, P. (2015, July). Causes of women's postpartum depression symptoms: Men's and women's perceptions. *Midwifery*, *31*, 728-734. http://dx.doi.org/http://dx.doi.org.ezp.twu.edu/10.1016/j.midw.2015.03.007

Hain, S., Oddo-Sommerfeld, S., Bahlmann, F., Louwen, F., & Schermelleh-Engel, K. (2016). Risk and protective factors for antepartum and postpartum depression: a prospective study. *Journal of Psychosomatic Obstetrics & Gynecology*, *37*(4), 119-129. https://doi.org/http://dx.doi.org/10.1080/0167482X.2016.119790

Keefe, R., Brownstein-Evans, C., & Polmanteer, R. (2016, September). "I find peace there": how faith, church, and spirituality help mothers of colour cope with postpartum depression. *Mental Health, Religion & Culture*, *19*(7), 722-733. https://doi.org/http://dx.doi.org/10.1080/13674676.2016.1244663

Kim, Y., & Dee, V. (2017, January). Self-care for health in rural Hispanic women at risk for postpartum depression. *Maternal & Child Health Journal*, *21*(1), 77-84. https://doi.org/http://dx.doi.org/10.1007/s10995-016-2096-8

Leung, B., Letourneau, N., Giesbrecht, G., Ntanda, H., & Hart, M. (2017, May). Predictors of postpartum depression in partnered mothers and fathers from a longitudinal cohort. *Community Mental Health Journal*, *53*(4), 420-431. https://doi.org/http://dx.doi.org/10.1007/s10597-016-0060-0

Lynn, M. R. (1986, November). Determination and quantification of content validity. *Nursing Research*, *35*(6), 382-385. https://doi.org/10.1097/00006199-198611000-00017

Massachusetts General Hospital Center for Women's Mental Health. (2007, October 24). Support for the MOTHERS Act by calling your Senator. *Postpartum Psychiatric Disorders*. Retrieved from https://womensmentalhealth.org/posts/support-the-mothers-act-by-calling-your-senator/

Massachusetts General Hospital Center for Women's Mental Health. (2010, March 10). MOTHERS Act becomes law. *Postpartum Psychiatric Disorders*. Retrieved from

https://womensmentalhealth.org/posts/mothers-act-becomes-law/?doing_wp_cron=1522432501.8548319339752197265625

Moran, K., Burson, R., & Conrad, D. (2017). *The doctor of nursing practice scholarly project: A framework for success* (2nd ed.). Burlington, MA: Jones & Bartlett Learning.

National Institute for Health Care Management. (2010). Identifying and treating maternal depression: strategies & considerations for health plans. Retrieved from https://www.nihcm.org/pdf/FINAL_MaternalDepression6-7.pdf

Nieto, L., Lara, M., & Navarrete, L. (2017, June). Prenatal predictors of maternal attachment and their association with postpartum depressive symptoms in Mexican women at risk of depression. *Maternal & Child Health Journal*, *21*(6), 1250-1259. https://doi.org/http://dx.doi.org/10.1007/s10995-016-2223-6

Nunes, A., & Phipps, M. (2013, August). Postpartum depression in adolescent and adult mothers: Comparing prenatal risk factors and predictive models. *Maternal & Child Health Journal*, *17*(6), 1071-1079. https://doi.org/http://dx.doi.org/10.1007/s10995-012-1089-5

Pfizer Inc. (1999). The patient health questionnaire (PHQ-9)-Overview. Retrieved from http://www.cqaimh.org/pdf/tool_phq9.pdf

Pilkington, P., Whelan, T., & Milne, L. (2016, February). Maternal crying and postpartum distress: the moderating role of partner support. *Journal of Reproductive & Infant Psychology*, *34*(1), 64-76. https://doi.org/http://dx.doi.org/10.1080/02646838.2015.1067884

Ramezani, S., Khosravi, A., Motaghi, Z., Hamidzadeh, A., & Mousavi, S. (2017, April). The effect of cognitive-behavioural and solution-focused counseling on prevention of postpartum depression in nulliparous pregnant women. *Journal of Reproductive & Infant*

Psychology, *35*(2), 172-182. https://doi.org/http://dx.doi.org/10.1080/02646838.2016.1266470

Rode, J., & Kiel, E. (2016, February). The mediated effects of maternal depression and infant temperament on maternal role. *Archives of Women's Mental Health*, *19*(1), 133-140. https://doi.org/http://dx.doi.org/10.1007/s00737-015-0540-1

Sampson, M., Duron, J., Torres, M., & Davidson, M. (2014, November). A disease you just caught: Low-income African American mothers' cultural beliefs about postpartum depression. *Women's Healthcare: A Clinical Journal of NPs*, *2*(4), 44-50. Retrieved from http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=29&sid=dab78ec3-94e2-410e-ab70-fb0b357e0e0c%40pdc-v-sessmgr02

Ugarte, A. U., Lopez-Pena, P., Vangeneberg, C. S., Royo, J. G., Ugarte, M. A., Compains, M. T., ... Gonzalez-Pinto, A. (20*17*, January 13). Psychoeducational preventive treatment for women at risk of postpartum depression: Study protocol for a randomized controlled trial, PROGEA. *BioMed Central*, 17(1), 13-19. http://dx.doi.org/10.1186/s12888-016-1162-5

United Health Foundation. (2018). America's health rankings analysis of CDC, pregnancy risk assessment monitoring system. Retrieved September 24, 2018, from https://www.americashealthrankings.org/explore/health-of-women-and-children/measure/postpartum_depression/state/ALL

U.S. Department of Health and Human Services. (2018). Maternal, infant, and child health. Retrieved November 8, 2018, from https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health

U.S. Department of Health and Human Services. (n.d.). Postpartum depression facts. Retrieved from https://www.nimh.nih.gov/health/publications/postpartum-depression-facts/index.shtml

Werner, E., Miller, M., Osborne, L. M., Kuzava, S., & Monk, C. (2014, November 25). Preventing postpartum depression: review and recommendations. *Archives Women's Mental Health*, *18*, 41-60. http://dx.doi.org/10.1007/s00737-014-0475-y

White, K. M., Dudley-Brown, S., & Terhaar, M. F. (2016). *Translation of evidence into nursing and health care* (2nd ed.). New York, NY: Springer Publishing Company.

Wouk, K., Stuebe, A., & Meltzer-Brody, S. (2017, March). Postpartum mental health and breastfeeding practice: An analysis using the 2010-2011 pregnancy risk assessment monitoring system. *Maternal & Child Health Journal*, *21*(3), 636-647. https://doi.org/http://dx.doi.org/10.1007/s10995-016-2150-6

Xie, R., Yang, J., Liao, S., Xie, H., Walker, M., & Wen, S. (2010). Prenatal family support, postnatal family support and postpartum depression. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, *50*, 340-345. http://dx.doi.org/ 10.1111/j.1479-828X.2010.01185.x

Zaccagnini, M. E., & White, K. W. (2017). *The doctor of nursing practice essentials: A new model for advanced practice nursing*. Burlington, MA: Jones & Bartlett Learning.

Zauderer, C. (2009). Postpartum depression: How childbirth educators can help break the silence. *Journal of Perinatal Education*, *18*(2), 23-31. http://dx.doi.org/10.1624/105812409X426305

Zhao, Y., Munro-Kramer, M., Shi, S., Wang, J., & Luo, J. (2017, April). A randomized controlled trial: Effects of a prenatal depression intervention on perinatal outcomes

among Chinese high-risk pregnant women with medically defined complications. *Archives of Women's Mental Health*, *20*(2), 333-344. https://doi.org/http://dx.doi.org/10.1007/s00737-016-0712-7

Appendix A

What is my role in postpartum depression?

You are part of her support team! Postpartum depression can affect any woman without warning. Therefore, there is not a guaranteed way to prevent it. You can help her by understanding that it is real and be patient with her. Encourage her and let her know she is a good mother. Tell her she is beautiful. Offer to help her with the baby, other children, or household chores.

What if she doesn't get treatment?

Postpartum depression can last for years if not treated. It not only affects mom, but how she cares for the baby. The baby may cry often and have problems with eating, sleeping and behavior in later years

What do I do if I think my loved one has postpartum depression?

Family and friends are the first ones to see the signs and symptoms of postpartum depression. If you think your loved one is depressed, encourage her to speak with her health care provider. Continue to give her emotional and physical support.

Resources

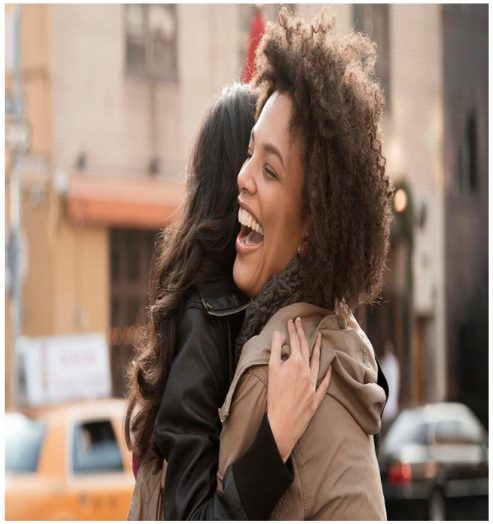
If you feel your loved one is in danger of hurting themselves or someone else, call 911.

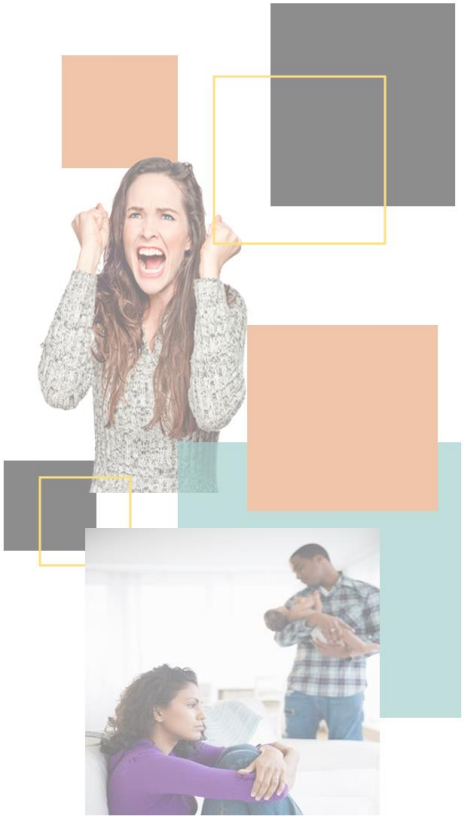
Southeast Women's Health Center of Parkland Hospital System 214-266-1500

www.postpartumdepression.org

www.cdc.gov/reproductivehealth/depression/resources.htm

https://www.womenshealth.gov/mental-health/mental-health-conditions/postpartum-depression





Postpartum Depression: What is it and how can I help?

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Texas Woman's University, DNP Scholarly Project 2018-2019

What is Postpartum Depression?

Postpartum depression is a serious mental health illness that affects mom's after giving birth. It is different from postpartum "blues", that may resolve a few days after delivery. For every 9 women, there is 1 woman who has postpartum depression. A drastic decrease in hormone levels can trigger postpartum depression.

(Womenshealth.gov, 2018)

(CDC.gov, 2018)

Who is at risk?

All women are at risk! Some women are at a higher risk of postpartum depression. These risks include:

-Previous history or family history of depression

-Complications during delivery or breastfeeding

-Financial or emotional stress

How is it treated?

Postpartum depression is treatable especially when caught early. Her health care provider will determine if she needs counseling or medication. Ask your loved one if you can come with her to a counseling session so you can better understand how she feels and how you can help.

"I can't think clearly…"

What are the signs?

- Crying often
- Forgetful or difficulty concentrating (brain fog)
- Overwhelmed
- Eating too little/much
- Easily irritated or angry
- Avoiding family and friends
- Avoiding the baby
- Sleeping too little/much
- Anxious or nervous
- She feels she is weak or a bad mother/wife
- No desire for normal activities like brushing teeth, bathing or sexual intercourse
- Frequent pain like headaches, body aches, and stomach aches
- Thoughts of harming herself or others

¿Cuál es mi role en la depresión postparto?

¡Tú eres parte de su equipo de apoyo! La depresión postparto puede afectar a cualquier mujer sin ningún aviso. Por lo tanto, no hay ninguna forma garantizada de poder prevenirla. Tú le puedes ayudar comprendiendo que lo que siente es real y teniéndole paciencia. Anímala y déjale saber que ella es una madre excelente. Dile que es bella. Ofrécele ayuda con su bebé, sus otros niños o con los quehaceres del hogar.

¿Qué si ella no obtiene tratamiento?

La depresión postparto puede durar años si no es tratada. No solo afecta a la mamá sino también en el cuidado del bebé. El bebé puede llorar seguido, tener problemas años más tarde con la alimentación, el sueño y el comportamiento.

¿Qué hago si pienso que uno de mis seres queridos tiene depresión postparto?

Familiares y amigos son los primeros en ver las señales y síntomas de la depresión postparto. Si tú piensas que un ser querido está deprimida, motívala a hablar con su proveedor de cuidado en la salud. Continua dándole apoyo emocional y físico.

Recursos

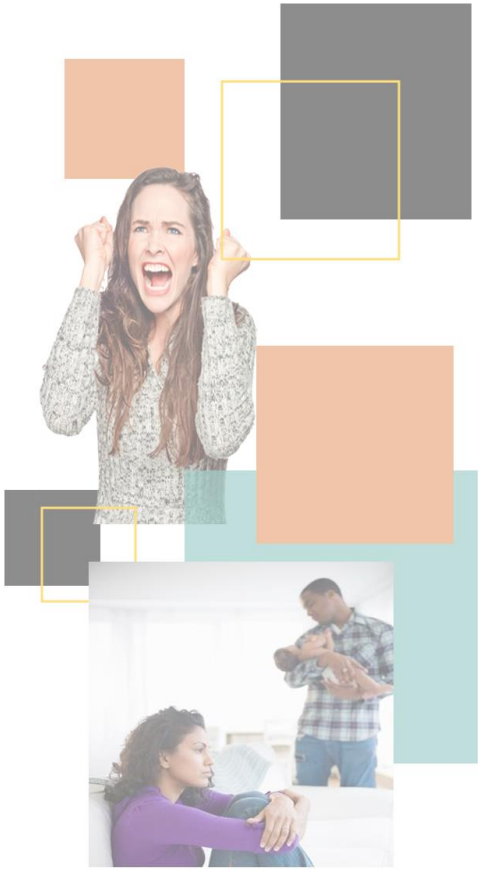
Si usted siente que su ser querido está en peligro de hacerse daño a si misma o a alguien más, llame al 911.

Southeast Women's Health Center Parkland Hospital System 214-266-1500

www.postpartumdepression.org

www.cdc.gov/reproductivehealth/depression/resources.htm

https://www.womenshealth.gov/mental-health/mental-health-conditions/postpartum-depression



Depresión postparto: ¿Qué es y cómo puedo ayudar?

LaSteshia Ekeocha, MSN, WHNP-BC, DNP resident

Texas Woman's University, DNP Scholarly Project 2018-2019

¿Qué es la depresión postparto?

Es una enfermedad de salud mental muy seria que afecta a la mamá después de haber dado a luz. Es diferente de la melancolía postparto que se puede resolver en unos cuantos días después del parto. Por cada 9 mujeres, hay 1 mujer que tiene depresión postparto. Una disminución drástica de los niveles de hormona pueden desencadenar en depresión postparto.

(Womenshealth.gov, 2018) (CDC.gov, 2018)

¿Quién está en riesgo?

Algunas mujeres están a un riesgo más alto de sufrir depresión postparto. Estos riesgos incluyen:

-Historial previo o historial familiar de depresión

-Complicaciones durante el alumbramiento o si da pecho

-Estrés financiero o emocional

¿Cómo es tratada?

La depresión postparto es tratable especialmente si es descubierta en etapa temprana. Su proveedor en cuidado de la salud puede determinar si ella necesita consejería o medicamento. Pregunte a su ser querido si usted puede ir con ella a una sesión de consejería; de esa forma usted puede entender como ella se siente y como puede ayudar.

"No puedo pensar claramente…"

¿Cuáles son las señales?

- Llanto frecuente
- Olvidadiza o dificultad para concentrarse (mente confusa)
- Abrumada
- Comiendo muy poco/mucho
- Fácilmente irritada o enojada
- Evita familiares y amigos
- Evita el bebé
- Duerme muy poco/mucho
- Ansiosa o nerviosa
- Ella se siente débil o una mala madre/esposa
- No tiene ganas de hacer sus actividades normales como: cepillarse los dientes, bañarse o tener relaciones sexuales
- Frecuentes dolores tales como dolores de cabeza, dolores de cuerpo y dolores de estomago
- Pensamientos de querer hacerse daño así misma o a otros

Appendix B

APRN _____ MRN (last 4-digits) _____
Quiz # _____

Postpartum Depression Pretest

Relationship to patient: _____ **Age group (circle one):**

Sex (circle one): Male Female 18-25 26-30 31-40 41+

Race/Ethnicity (circle one): White/Caucasian Black/African American Hispanic/Latino

Native American/American Indian Asian/Pacific Islander Other

Level of education (circle one):

None Middle School Some High School High School/GED

Some College College Graduate Masters/Doctorates

1. All women are at risk of postpartum depression. True/False
2. Postpartum depression is the same as postpartum blues. True/False
3. How is postpartum depression treated? (circle one)
   a. medication only
   b. counseling only
   c. counseling or medication
   d. there's no treatment
4. Which of the following are signs of postpartum depression?
   a. crying often
   b. avoiding family/friends
   c. no desire to take a bath
   d. forgetful
   e. all the above
5. Postpartum depression affects the baby. True/False

APRN _ _ _ _ MRN (Last 4-digits) _____
Quiz # _ _ _ _

Depresión postparto Pretest

Relación con el paciente: _____ **Grupo de edad (círculo uno):**

Sexo (círculo uno): Mujer/Masculino 18-25 26-30 31-40 41 +

Carrera/Ethnicity (círculo uno): Blanco/caucásico Negro/afroamericano Hispana/Latino

Indígena americano/americano indio asiático/isleño del Pacífico otro

Nivel de Educación (círculo uno):

Ninguna / Escuela secundaria / Algunas escuelas secundarias / Escuelas secundarias-GED
Algunos estudios superiores

1. Todas las mujeres están en riesgo de depresión posparto. Verdad/Falso
2. La depresión posparto es lo mismo que los azules posparto. Verdad/Falso
3. ¿Cómo se trata la depresión posparto? (un círculo)
   A. solo medicación
   B. sólo Consejería
   C. consejería y/o medicación
   D. no hay tratamiento
4. ¿Cuáles de los siguientes son signos de depresión posparto?
   A. llorando a menudo
   B. evitando la familia/amigos
   C. ningún deseo de tomar un baño
   D. olvidadizo
   E. todo lo anterior
5. La depresión postparto afecta al bebé. Verdad/Falso

Appendix C

APRN _____ MRN (last 4-digits) _____
Quiz # _____

Postpartum Depression Posttest

1. Which of the following are signs of postpartum depression?
   a. crying often
   b. avoiding family/friends
   c. no desire to take a bath
   d. forgetful
   e. all the above

2. Postpartum depression affects the baby. True/False

3. Postpartum depression is the same as postpartum blues. True/False

4. How is postpartum depression treated? (circle one)
   a. medication only
   b. counseling only
   c. counseling or medication
   d. there's no treatment

5. All women are at risk of postpartum depression. True/False

APRN _ _ _ _ MRN (Last 4-digits) _____
Quiz # _ _ _ _

Depresión postparto Postest

1. ¿Cuáles de los siguientes son signos de depresión posparto?
   A. llorando a menudo
   B. evitando la familia/amigos
   C. ningún deseo de tomar un baño
   D. olvidadizo
   E. todo lo anterior

2. La depresión postparto afecta al bebé. Verdad/Falso

3. La depresión posparto es lo mismo que los azules posparto. Verdad/Falso

4. ¿Cómo se trata la depresión posparto? (un círculo)
   A. solo medicación
   B. sólo Consejería
   C. consejería y/o medicación
   D. no hay tratamiento

5. Todas las mujeres están en riesgo de depresión posparto Verdad/Falso

Appendix D

Early Recognition of Postpartum Depression Through Education: A Quality Improvement Initiative Guide

Project manager: LaSteshia Ekeocha, MSN, WHNP-BC, DNP resident

Project Sponsor: Celia Dolinta, DNP, WHNP-BC, Clinic Manager

Committee Chair: Dr. Lois O'Quin DNP, APRN-BC, NCSN, NE-BC

Committee Co-Chair: Dr. Margarita Menendez Bobseine DNP, RN, WHNP-BC

Objectives

Postpartum depression education is essential to the expectant mother, but the support system is a crucial element in the support and awareness of PPD. The support system can help preserve the mental well-being of the mother throughout the pregnancy and postpartum periods. The objectives of the postpartum depression educational program include:

3. Provide postpartum depression education to the support system of the pregnant woman from January 16-February 13, 2019 or until 180 samples are obtained.
4. Increase the support system’s postpartum depression knowledge by an average of 15% as measured by a pre and post test

Intervention

1. Identify patients who are pregnant with a family member or friend present over the age of 18. The visitor must speak English or Spanish as their first language.
2. Obtain verbal consent from the patient to speak with the visitor present at the obstetric visit on postpartum depression. Inform the patient and visitor that no identifying information will be obtained.
3. After obtaining consent, inform the patient and visitor there is a 5-question pretest to take to measure their current knowledge on postpartum depression, a pamphlet to read during the visit and a 5-question posttest to complete before discharge.
4. Administer the pretest to the visitor with a pen. Each pretest and posttest have a corresponding number. After completion, collect from the visitor.
5. Administer the pamphlet to the visitor in their primary language of English or Spanish. Allow the visitor a 5-minute education session on postpartum depression as needed.
6. Administer the corresponding posttest to the visitor. Collect the posttest before discharging the patient or sending out of the examination room.
7. Return all test to the Quality Improvement Initiative manager at the end of the day.

Appendix E

SYNTHESIS OF LITERATURE AND LEVELS OF EVIDENCE

Synthesis Section	Specific Themes	Variations: Concepts	Variations: Methods and Design	Citations: Author and Year	Level of Evidence
1	Postpartum depression risk factors	Assessment of the implications of motherhood-related and motherhood-unrelated support receipt for daily distress during pregnancy and test whether negative responsiveness to motherhood-related support predicts postpartum depression risk	Qualitative study	Negative emotional responses to motherhood-related support receipt during pregnancy predict postpartum depressive symptoms. Burke & Perndorfer, 2016	VI
	Postpartum depression risk factors	Determine the predictors of depression at three months postpartum, and comparing depressed couples to couples with only one depressed partner or no depressed partner	Longitudinal/Cohort study	Predictors of postpartum depression in partnered mothers and fathers from a longitudinal cohort. Leung, Letourneau, Giesbrecht, Ntanda, Hart, & The APrON team, 2017	IV

	Postpartum depression risk factors	To assess whether postpartum depression factors differ between adolescent and adult mothers	Retrospective Cohort study	Postpartum depression in adolescent and adult mothers: Comparing prenatal risk factors and predictive models. Nunes & Phipps, 2013	III
2	Complications associated with postpartum depression	Assess several risk factors for maternal attachment at six months postpartum in a sample of Mexican women at risk of depression.	Randomized Controlled Trial	Prenatal predictors of maternal attachment and their association with postpartum depressive symptoms in Mexican women at risk of depression. Nieto, Lara, & Navarrete, 2017	II
	Complications associated with postpartum depression	Examine the effects of maternal depression and maternal perceptions of infant temperament on a mother's perception of her maternal role in a mediation model	Prospective study	The mediated effects of maternal depression and infant temperament on the maternal role. Rode & Kiel, 2016	II
	Complications associated with postpartum depression	Association between preexisting mental health symptoms and breastfeeding initiation	Systematic review & meta-analysis of RCT	Postpartum mental health and breastfeeding practices: An analysis using the 2010-2011	I

				pregnancy risk assessment monitoring system. Wouk, Stuebe, & Meltzer-Brody, 2017	
3	The stigma associated with postpartum depression	Investigate the effect of church participation and spiritual practices on PPD	Qualitative interview	"I find peace there": how faith, church, and spirituality help mothers of colour cope with postpartum depression Keefe, Brownstein-Evans, & Polmanteer, 2016	VI
	The stigma associated with postpartum depression	Examine postpartum depression to explore the stigmatization of depression and cultural expectations of motherhood	Qualitative interview	An autoethnographic examination of postpartum depression Frankhouser & Defenbaugh, 2017	VI
	The stigma associated with postpartum depression	Explore the experiences of teenage mothers with PPD	Qualitative interview	Meeting the challenges of teenage mothers with postpartum depression: overcoming stigma through support Boath, Henshaw & Bradley, 2013	VI
	The stigma associated with	To measure stigma associated with four	Systematic review	Stigma and postpartum	III

	postpartum depression	PPD therapies and to estimate the association between stigma and the acceptance of the therapies for black and white postpartum mothers		depression treatment acceptability among black and white women in the first six-months postpartum Bodnar-Deren, Benn, Balbierz & Howell, 2017	
4	Prenatal interventions for preventing postpartum depression	Evaluation of the effects of a prenatal depression intervention on birth outcomes and maternal physical and psychological status	Randomized control trial	A randomized controlled trial: effects of a prenatal depression intervention on perinatal outcomes among Chinese high-risk pregnant women with medically defined complications Zhao, Munro-Kramer, Wang, & Luo, 2017	I
	Prenatal interventions for preventing postpartum depression	Describe the study protocol of an RCT on a supervised group exercise intervention for pregnant women with a current or previous history of depression and/or anxiety	Randomized control trial	Effect of supervised exercise in groups on psychological well-being among pregnant women at risk of depression (the EWE study): study protocol for a	I

				randomized controlled trial Broberg, Backhausen, Damm, Bech, Tabor, & Hegard, 2017	
	Prenatal interventions for preventing postpartum depression	Evaluate the effect of cognitive-behavioral approach and solution-focused counseling on prevention of postpartum depression in nulliparous pregnant women	Randomized control trial	The effect of cognitive-behavioral and solution-focused counseling on prevention of postpartum depression in nulliparous pregnant women Ramezani, Khosravi, Motaghi, Hamidzadeh, & Mousavi, 2017	I
5	Support as an intervention for early recognition of Postpartum Depression	Determine the prevalence of postpartum depression and interventions utilized for its management in a Health facility in Ghana	Descriptive Cross-sectional study	Prevalence of postpartum depression and interventions utilized for its management. Anokye, Acheampong, Budu-Ainooson, Obeng, & Akwasi, 2018	VI
	Support as an intervention for early recognition of	Determine factors that affect self-care of rural Hispanic women at risk for	Descriptive Cross-Sectional study	Self-care for health in rural Hispanic women at risk for	VI

	Postpartum Depression	postpartum depression		postpartum depression. Kim & Dee, 2017	
	Support as an intervention for early recognition of Postpartum Depression	Investigate maternal crying as a signal of distress and request for support in the postpartum period	Cross-sectional/Randomized Control Trial	Maternal crying and postpartum distress: the moderating role of partner support Pilkington, Whelan, & Milne, 2016	II
	Support as an intervention for early recognition of Postpartum Depression	Explore the experience and cultural beliefs regarding postpartum depression in a small group of urban, low income, African American women	Qualitative study	A disease you just caught: Low-income African American mothers' cultural beliefs about postpartum depression Sampson, Duron, Torres, & Davidson, 2014	VI
	Support as an intervention for early recognition of Postpartum Depression	To describe men's and women's perception of the causes of women's PPD symptoms and to explore similarities and differences between men's and women's perceptions	Qualitative-descriptive study	Causes of women's postpartum depression symptoms: Men's and women's perceptions. Habel, Feeley, Hayton, & Zelkowitz, 2015	VI

Key to Evidence Levels:

Level I Evidence — From systematic review or meta-analysis of all relevant randomized controlled trials (RCT's), or evidence-based clinical practice guidelines based on systematic reviews of RCT's

Level II Evidence	From at least one well-designed RCT
Level III Evidence	From well-designed controlled trials without randomization
Level IV Evidence	From well-designed case-control and cohort studies
Level V Evidence	From systematic reviews of descriptive and qualitative studies
Level VI Evidence	From single descriptive or qualitative study
Level VII Evidence	From the opinion of authorities and/or reports of expert committees

Adapted from Melnyk, & Fineout-Overholt (2005). Evidence-based practice in nursing and healthcare: A guide to best practice, Rating system for the Hierarchy of Evidence, page 10.

Appendix F

Table 16. Data Dictionary

PID GA	Provider Identification Gestational age in weeks	No response = 0
Relationship to patient	1=Husband/Significant Other 2=Mother 3=Mother in law 4=Sister 5=Child 6=Friend 7=Father 8=Sister in law 9=Aunt 10=Other	
Sex	1=Male 2=Female	
Age Group	1=(18-25) 2=(26-30) 3=(31-40) 4=(41+)	
Race/Ethnicity	1=White/Caucasian 2=Black/African American 3=Hispanic/Latino 4=Native American/American Indian 5=Asian/Pacific Islander 6=Other	
Education	1=None 2= Middle School 3=Some High School 4=High School/GED 5=Some College 6=College Graduate 7=Masters/Doctorates	
PreQ1	All women are at risk of postpartum depression.	1=True 2=False
PreQ2	Postpartum depression is the same as postpartum blues.	1=True 2=False

PreQ3	How is postpartum depression treated? (circle one)	1=Medication only 2=Counseling only 3=Counseling and/or medication 4=There's no treatment
PreQ4	Which of the following are signs of postpartum depression?	1=Crying often 2=Avoiding family/friends 3=No desire to take a bath 4=Forgetful 5=All of the above 6=Partially Correct
PreQ5	Postpartum depression affects the baby.	1=True 2=False
PostQ1	Which of the following are signs of postpartum depression?	1=Crying often 2=Avoiding family/friends 3=No desire to take a bath 4=Forgetful 5=All of the above 6=Partially Correct
PostQ2	Postpartum depression affects the baby.	1=True 2=False
PostQ3	Postpartum depression is the same as postpartum blues.	1=True 2=False
PostQ4	How is postpartum depression treated? (circle one)	1=Medication only 2=Counseling only 3=Counseling and/or medication 4=There's no treatment
PostQ5	All women are at risk of postpartum depression.	1=True 2=False

Appendix G

Texas Woman's University, College of Nursing – Dallas Center

Content Validity Testing:
Survey of: Early Recognition of Postpartum Depression Through Education:
A Quality Improvement Initiative

Concept: Increase the support system's postpartum depression knowledge by an average of 15% as measured by a pre and posttest.

Target population: The target population includes men and women of the age of 18, who's primary language is English/Spanish, who accompany the obstetric patient to the prenatal visit.

Instructions:
Read each of the following items, then for each item, consider the extent to which it may or may not apply to the concept described above.

Using the 1 to 4 rating scale below, mark (X) in the column of the number that best reflects the relevance of each item to the above named concept. The relevance score is the 1 – 4 scale is:

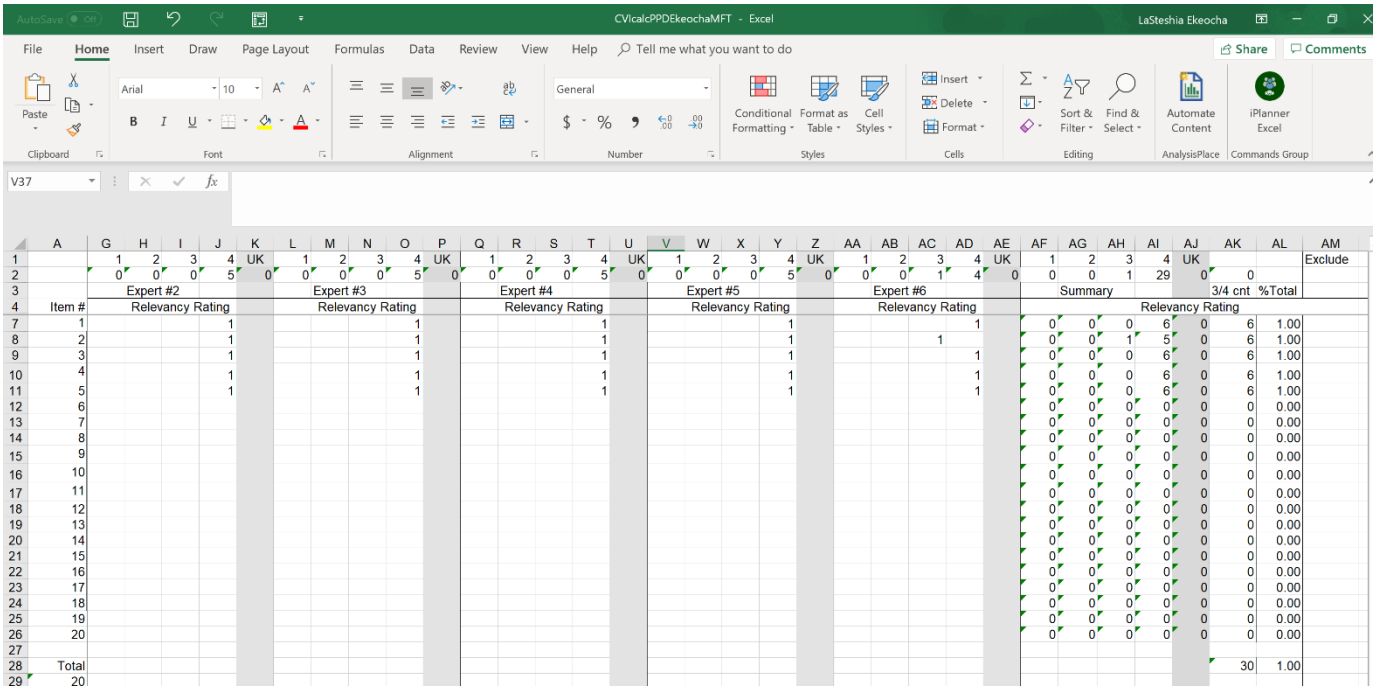
1 = Item does not measure concept
2 = Item measures concept but is not clearly stated
3 = Item measures concept but needs minor revision for clarity
4 = Item measures concept and it is clearly stated
UK = Unknown/No opinion can be used when you cannot assess the relevance

If you believe that an item is not clearly stated or needs revision for clarity, please make your suggestions or changes on the form. Feel free to add any items that you think are missing.

1 = Item does not measure concept
2 = Item measures concept but is not clearly stated
UK = Unknown/No opinion
3 = Item measures concept but minor needs revision for clarity
4 = Item measures concept and it is clearly stated

#	Survey question	1	2	3	4	UK	Please feel free to comment
I.	**SECTION ONE: :**						
1.	All women are at risk of postpartum depression. (True/False)						
2.	Postpartum depression is the same as postpartum blues. (True/False)						
3.	How is postpartum depression treated? Multiple Choice of: a. b. c. d.						
4.	Which of the following are signs of postpartum depression? Multiple Choice range of: a. b. c. d.						
5.	Postpartum depression affects the baby. (True/False)						

THANK YOU!



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1		1	2	3	4	UK	1	2	3	4	UK	1	2	3	4	UK	1	2	3	4	UK	1	2	3	4	UK	1	2	3	4	UK			Exclude
2		0	0	0	5	0	0	0	0	5	0	0	0	0	5	0	0	0	0	5	0	0	0	1	4	0	0	0	1	29	0	0		
3		Expert #2					Expert #3					Expert #4					Expert #5					Expert #6					Summary					3/4 cnt	%Total	
4	Item #	Relevancy Rating					Relevancy Rating					Relevancy Rating					Relevancy Rating					Relevancy Rating					Relevancy Rating							
7	1				1					1					1					1					1		0	0	0	6	0	6	1.00	
8	2				1					1					1					1				1			0	0	1	5	0	6	1.00	
9	3				1					1					1					1					1		0	0	0	6	0	6	1.00	
10	4				1					1					1					1					1		0	0	0	6	0	6	1.00	
11	5				1					1					1					1					1		0	0	0	6	0	6	1.00	
12	6																										0	0	0	0	0	0	0.00	
13	7																										0	0	0	0	0	0	0.00	
14	8																										0	0	0	0	0	0	0.00	
15	9																										0	0	0	0	0	0	0.00	
16	10																										0	0	0	0	0	0	0.00	
17	11																										0	0	0	0	0	0	0.00	
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21	15																										0	0	0	0	0	0	0.00	
22	16																										0	0	0	0	0	0	0.00	
23	17																										0	0	0	0	0	0	0.00	
24	18																										0	0	0	0	0	0	0.00	
25	19																										0	0	0	0	0	0	0.00	
26	20																										0	0	0	0	0	0	0.00	
27																																		
28	Total																															30	1.00	
29	20																																	