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Implementation of a Perinatal Depression Screening Protocol

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Implementation of a Perinatal Depression Screening Protocol

A DNP Project Submitted to the
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in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Nursing Practice

By

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Abstract

Background: Perinatal depression (PD), leading to suicide, ranked as a high cause of maternal mortality and was found to affect one out of 7 women in 2018, according to the American College of Obstetrics and Gynecology (ACOG) (2018). PD screening at the start of pregnancy care aims to achieve early referral to behavioral health resources (ACOG, 2018).

Purpose: The purpose of the Doctor of Nursing Practice (DNP) project was to implement an evidenced-based PD screening protocol by presenting the Edinburgh Postpartum Depression Scale (EPDS) to each initial prenatal visit patient (IPV).

Methods: Qualitative pre-data was collected, followed by qualitative post-data collected over six weeks. Pender's Health Promotion Model (HPM) and the Plan, Do, Study, Act (PDSA) model provided foundational support for staff training, implementation of the EPDS, and continued workflow revision in this Quality Improvement (QI) project.

Results: Expected outcomes of the PD screening project were met with results indicating > 80% ($z = 2.03$, $p = 0.021$) patient participation. A demonstration of 100% staff consent, EPDS presentation at IPV, correct scoring, and behavioral health referral for scores >10 was received.

Conclusion: The PD screening project demonstrated the successful implementation of an ACOG benchmark recommendation for early perinatal period depression screening as supported by an extensive literature review.

Keywords: perinatal, antenatal, prenatal, depression, depression screening, Edinburgh Postpartum Depression Scale, maternal mortality, initial prenatal visit, behavioral health referral.

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Implementation of a Perinatal Depression Screening Protocol

The Centers for Disease Control (CDC) found the rate of depression diagnoses at recent live birth experiences to be increasing, citing a depression rate in 2015 that was seven times higher than in 2000 (CDC, 2022). The CDC based this information on the National Inpatient Sample of recorded maternal depression at birth, which reported depression rates in 2000 as four per 1000 births, rising to 28.7 per 1000 births in 2015 (Haight et al., 2019). A systematic review by Dadi et al. (2020) supports that PD is a significant healthcare burden. The Georgia Department of Behavioral Health (GDBH) (2022) estimated that healthcare costs increase by 90% for untreated PD, with lost productivity of both patients and families reaching 44 billion dollars annually. ACOG recommends screening for PD at least once during pregnancy (ACOG, 2018). Maternal suicide related to PD is the second leading cause of death for postpartum mothers (Van Niel & Payne, 2020). Depression in the perinatal period, encompassing pregnancy and the 12 months postpartum, can have lasting repercussions on maternal health, infant development, family relationships, and society. Early referral to behavioral health resources to support these patients is essential in decreasing these effects (Ellington, 2021).

The Mental Health America of Georgia's Project estimates a 39% decrease in PD when healthcare workers recognize that accurate, positive PD screening leads to appropriate referral and treatment (GDBH, 2022). Van Niel and Payne (2020) recommend screening during IPV in the obstetrical office setting, covered under the Affordable Care Act (ACA). Van Niel and Payne (2020) recognized the EPDS as a validated PD screening scale for the perinatal period. A standardized/validated PD screening tool, such as the EPDS, has been shown to clinically reduce PD symptoms by screening alone (Ellington, 2021). Considering EPDS findings at the IPV and

postpartum allows for early and continuing observation of maternal depression in the perinatal period (Van Niel & Payne, 2020).

Background

The population of OB patients at the stakeholder agency was diverse in ethnicity and patient economic means. The implementation of the PD screening protocol sought to include all obstetric patients presenting for beginning pregnancy care. This extensive community practice included private pay, privately insured, government-insured, and self-pay individuals of international, immigrant, and local patients. Iturralde et al. (2021) concluded that behavioral health services offered through OB care could positively impact patients of varied cultures who often contend with cultural stigmas related to mental illness. According to Iturralde et al. (2021), the provider's presentation to patients regarding the rationale for PD screening and the ability to offer convenient services at both time and location were top considerations for patients across all demographics. The patient population screened during the PD depression screening project provided the opportunity to become more familiar with varying cultures and their needs related to behavioral health. It allowed for input regarding needed changes to behavioral health services and the stakeholders' presentation of PD screening.

An Electronic Health Record (EHR) review and discussion with the obstetricians and intake nurses caring for patients at the stakeholder site did not reveal a validated PD screening protocol. The existing IPV patient intake workflow did not include PD screening. The DNP PD screening protocol project aimed to increase recognition of PD symptoms by implementing the EPDS, a validated PD screening scale at IPV leading to behavioral healthcare referral early in pregnancy for any EPDS screening score >10. As an added benefit of using the EPDS at the IPV, the stakeholder’s affiliated hospital screens for a baseline postpartum (PP) depression score via

the EPDS before maternal discharge. Implementing the same PD screening scale (the EPDS) will ensure consistency in patient scoring, education, and referrals.

Needs Analysis

PD affects individual women, families, and society on global, national, state, and local levels. Globally 15-65% of women are estimated to be affected by PD (Dadi et al., 2020). PD diagnosis at birth increased seven times in 28 states studied between 2000-2015 (Haight et al., 2019). Van Niel and Payne (2020) estimated that 500,000 women in the United States were affected by depression annually, an increase from 180,000 women in 2012, as recognized by O'Connor (2019). While global and national rates continue to soar, the Georgia Department of Behavioral Health (GDBH) (2022) estimates that 30,000 women in Georgia are affected by PD. The review of local obstetric delivery records for all stakeholders at a large community hospital yielded zero validated PD depression screenings during pregnancy out of 4,289 births. The stakeholder for the DNP project was responsible for 331 obstetric births for known patients from January 01, 2022, through September 21, 2022, resulting in 331 missed opportunities for a validated PD screening scale at IPV. Behavioral health referrals occurred per a patient report of depression symptoms or a previous depression/mental health diagnosis. ACOG reports that fewer than 20% of pregnant women self-report symptoms of PD (ACOG, 2018).

Problem Statement

The United States Preventative Service Task Force (2022) recommends screening for depression in all adults, including pregnant women. The ACOG, Committee Opinion 757 (2018), states that at least one validated PD screening should be completed during pregnancy. A gap in evidence-based practice was found in the stakeholder's patient intake process as a PD screening protocol was not used. The gap in clinical best practice affected the recognition of PD and the

resultant referral to behavioral health resources. A PICOT question was formulated to address the project objectives. In women receiving prenatal care (P), did implementation of a validated PD screening protocol at the IPV (I) compared to the current practice of no validated PD screening protocol (C) increase early identification of PD and appropriate referral to clinic sources (O) in 6 weeks (T)?

Aims and Objectives

The overarching aims of the DNP PD screening project were to (a) present the EPDS screening at each IPV; (b) ensure the correct scoring of each EPDS screening scale; (c) make each OB provider aware of any positive depression score obtained to assist in a referral to behavioral health care resources.

The objectives included: (a) adjusting IPV intake workflow through stakeholder staff education sessions to allow for consistent EPDS screening; (b) staff review of the EPDS to become familiar with the questions asked and the scoring scale for correct identification of positive PD screening; (c) developing a shared mental model among all staff regarding the importance of positive PD screening recognition and early referral to behavioral health resources.

Review of Literature

Early detection of PD is a current obstetrical goal, according to ACOG (2018). Understanding successful early detection of PD required a literature review to assess the meaning of PD, including maternal and infant outcomes, maternal and HCP's perception of screening, how and when to detect PD, and validation of the EPDS as the PD screening instrument of choice. The literature review aimed to gather evidence supporting a PD screening protocol in OB patients at the IPV to promote early pregnancy referral to behavioral health

resources. Databases used for literature research included: PubMed, Google Scholar, Cinahl Complete, and the Cochran Library.

Defining Perinatal Depression and Associated Risk Factors

ACOG (2018) defines PD as diagnosed depression in pregnancy until the end of the first PP year. Further, ACOG (2018) lists PD symptoms as including a lack of appetite, weight loss, difficulty concentrating, fatigue, psychomotor agitation, feelings of depressed mood, worthlessness, and thoughts of death. According to Tolentino and Schmidt (2018), the DSM-5 depression criteria currently indicate that all depressive symptomologies are present for diagnosing PD, with no variation in the degree of depression noted. Tolentino and Schmidt (2018) enrolled 782 women in a study aiming to correlate DSM-5 depression criteria, which match the above ACOG PD symptoms, to the varying degrees of PD. Moderate PD was found to relate to somatic symptoms such as sleeplessness, lack of appetite, weight loss, and fatigue.

In contrast, non-somatic symptoms such as feelings of worthlessness and thoughts of death raised the risk of suicide. In studies conducted by both Pinar et al. (2022) and Van Niel and Payne (2020), antenatal women have also reported a lack of interest or attachment, including resentment with possible anger and harm to the infant, in addition to somatic and non-somatic symptoms. The ICD-11 changes in 2018 have prompted a change from PP depressive disorder to PD disorder recognizing the antenatal period as part of the disease time frame. The PP time frame, however, was kept at four-six weeks post-birth and did not acknowledge the first PP year as included by ACOG (2018) (Chandra & Parameshwaran, 2018).

Dadi et al. (2020) reported that PD cases continue to rise globally and are associated with known risk factors. Ghaedrahmati et al. (2017) conducted a literature review of over 200 studies investigating the most recognized risk factors for PP depression to design a valid PD screening

tool. The most reported PD risk factors included economic and social factors, obstetrical history, medical history including mental illness, and lifestyle choices. Chen et al. (2019) chose a cross-sectional study involving three hospitals serving multiple communities to identify risk factors for PD. Seven hundred seventy-three pregnant women were screened for PD using the EPDS, and patients scoring over nine on the EPDS were further assessed for associated risk factors. Chen et al. (2019) reported final study findings for PD risk factors such as lack of insurance, living with extended family members, unemployment/low income, and working in healthcare. Unlike ACOG's (2018) statement, lower education level and nicotine use did not factor into PD risk factors, according to Chen et al. (2019). ACOG (2018) also recognized that women suffer from depression at more than twice the rate of men and includes single parenthood as a risk factor, further supported by Dadi et al. (2020), who also recognized abuse/violence as a PD risk factor. O'Connor et al. (2019) added unplanned or unwanted pregnancy, stressful life occurrences, pregnancy/infant health complications, and adolescent pregnancy to the list of risk factors. Pinar et al. (2022) supported all the above risk factors and added frequent and common pregnancy symptoms such as fatigue, hyperemesis, and a history of miscarriages. The expectation of pain associated with labor and birth is not mentioned in research but can contribute to PD, according to Xiong et al. (2021).

Maternal and Infant Outcomes Associated with Perinatal Depression

Dadi et al. (2020) offered extensive study findings regarding the adverse effects of PD on moms and infants and the high economic burden associated with those effects. Outcomes associated with PD include pregnancy loss, deleterious impacts on PP mental health, and poor child health and development (Heller et al., 2022). The current ICD-11 diagnosis codes do not acknowledge the effects of PD on mother-child interactions (Chandra & Parameshwaran, 2018).

Maternal outcomes of untreated or unsuccessfully treated PD can lead to suicide (ACOG, 2018). ACOG (2018) further stated that suicide related to PD was the cause of more maternal deaths than hypertensive disorders or PP hemorrhages combined. Furthermore, Dadi et al. (2020) said maternal outcomes associated with PD, such as decreased health-seeking behavior, non-adherence to interventions, increased risk of self-harm, and high-risk behaviors such as substance abuse, led to an estimated 6.2% of life years lived in disability. Silva et al. (2018) found a direct correlation with exacerbated PP depression symptoms when depression was not screened for or treated during pregnancy. Pinar et al. (2022) added information from their study that PD symptoms may last up to three and a half years PP.

Infant outcomes include developmental and emotional delays, attachment issues, and possible mental health issues later in life (Dadi et al., 2020). Kerker et al. (2018) agreed with Dadi et al. (2020), Cox (2019), and Pinar et al. (2022) that PD increases poor cognition and mental health illnesses in children affected. Cox et al. (1987) acknowledged PD effects in children up to three. Kerker et al. (2018) studied PD programs in NYC that implicated PD as negatively impacting safe parenting and increasing the need for emergency care of infants.

Perinatal Depression Detection

Cox et al. (1987) undertook a landmark study to prove support for PD screening implementation and the formation of questions that would reliably lead to PD screening success. Their investigation led to the creation of the EPDS. A retroactive review of the New York City-Reach Out and Stay Strong Program (NYC-ROSE) found that screening revealed improvement in the detection of PD in program participants versus non-screening, supporting Cox et al. (1987) findings (Kerker et al., 2018). Continuing support for PD screening was continued by numerous studies cited in a systematic review of both randomized controlled trials (RCT) and non-

randomized controlled trials (NRCT) by O'Connor et al. (2019), which included 80,000 women. This study conducted by O'Connor et al. (2019) found that a validated PD screening had the best predictive value for recognizing PD, leading to referral and interventions. A multi-study literature review by Yeaton-Massey and Herrero (2019) found validated PD screening instrumental in pregnancy and added that HCPs should screen consistently throughout pregnancy and after postpartum. Reilly et al. (2020), through a systematic review of RCTs and NRCTS, reached a consensus on the significant impact PD screening made in referral to mental health services and improved healthcare outcomes. In addition to citing increased instances of PD, Van Niel and Payne's (2020) multi-study review indicated support for PD screening, reviewing two validated PD screening instruments, including Cox et al.'s (1987) EPDS and the Patient Health Questionaire-9 (PHQ-9). Ingram et al. (2021) determined that consistent use of any chosen validated PD screening tool, such as the EPDS, was paramount as the first step in comparing interventions for PD, specifically in determining modes of counseling.

Patient Perception of Screening

Pinar et al. (2022) presented both enablers and barriers to PD screening from a patient perspective through participation in a qualitative study design using face-to-face interviews. PD screening enablers included a trusting relationship with the HCP presenting the PD screening tool and open perceptions of HCPs regarding mental illness. Patient-reported barriers included fear of losing custody of the child and self-stigma regarding maternal depression as contributors to the non-completion of the screening tool (Pinar et al., 2022). Kerker et al. (2018) had previously discovered barriers to PD screening, including staff buy-in, lack of training (volunteers/students), negative patient perception of screening delivery, fear of losing custody of children, and follow-up referral services not located in the same place as obstetric care. Chan et

al. (2022) and Kerker et al. (2018) support Pinar et al. (2022) findings that positive relationships between the patient and HCP created a perception of trust. Antenatal women responded favorably to the EPDS used in screening and professed positive reviews for its approach and ease of completion (Chan et al., 2022; Kerker, 2018).

Health Care Provider Perception of Screening

Multiple studies focused on HCPs yielded enablers and barriers to PD screening from a staff perspective. A meta-analysis of 25 studies focusing on the percentage of women screened for PD and referred to mental health services conducted by Long et al. (2018) recognized HCP's knowledge and attitude related to Perinatal Mood and Anxiety Disorders (PMAD) as significant factors influencing screening. The HCP's attitude towards screening protocols, electronic medical records (EMR) changes, and the ability to participate in provider/patient communication influenced the screening rate (Long et al., 2018). Pinar et al. (2022) conducted face-to-face interviews with HCPs which supported Long et al.'s (2018) prior findings related to negative HCP perceptions of mental illness, knowledge (lack of) associated with PD, and low confidence in discussing mental health as obstructing factors in screening (Pinar et al., 2022).

Branquinho et al. (2022) supported HCP knowledge or PD literacy as a factor affecting PD screening. A systematic review including 3,172 studies graded HCP knowledge of PD as moderate and suggested educational training regarding risk factors, symptoms, and the use of screening tools to promote validated screening and referral. A random national survey completed by Fedock and Alvarez (2018) cites factors leading to depression screening occurring in the postpartum period more often than in antepartum patients. These factors included a low clinic priority for PD screening, low confidence in screening, and inadequate relationships with mental health providers. The HCPs that did provide guideline-recommended antepartum depression

screenings were determined to be due to provider motivation alone. A quasi-experimental study by Phoosuwan and Lundberg (2020) validated the recommendation for a training program based on HCP knowledge, attitude, and self-efficacy (KAS), which followed HCPs after an intense training session to address the identification and management of PD. According to statistical analysis of HCPs' pre- and post-data, the KAS program increased knowledge, awareness, attitude, and confidence levels. The HCPs recognized the benefit of continued training and feedback (Phoosuwan & Lundberg, 2020).

How and When to Screen for Perinatal Depression

Support for the EPDS in the antenatal period includes ACOG's (2018) endorsement of the EPDS as a valid PD screening implementation tool. According to ACOG (2018), when the EPDS was compared to the Beck Depression Inventory (BDI) and the Center for Epidemiological Studies Depression Scale (CES-D), the EPDS proved to be a better choice in pregnancy as it excludes constitutional variables such as sleep. O'Connor et al. (2019) compared the EPDS to the CES-D via a systematic review of RCTs and NRCTs. They determined that the EPDS demonstrated the most predictive screening value for predicting a diagnosis of PD while providing the most direct information on symptoms. Suchowiak et al. (2020) reviewed seven depression scales to determine the best antenatal and PP screening. The scales included were the EPDS, CES-D, BDI, Postpartum Depression Screening Scale (PDSS), Bromley Postnatal Depression Scale (BPDS), Zung Self-Rating Depression Scale (SDS), and the PHQ-9. While benefits to each scale were acknowledged, the EPDS was the most consistent for use in the antenatal and PP period. The study stressed that the EPDS did not distinguish between PD and other mood disorders during pregnancy. Heller et al. (2022) conducted a secondary data analysis of an original RCT using confirmatory factor analysis to compare the validity and responsiveness

to the EPDS, CES-D, and the Hospital Admission Depression Scale (HADS). Both the EPDS and CES-D were considered reliable tools to assess PMAD. Levis et al. (2020) completed a meta-analysis including 22,788 participants across 58 studies, including 25 studies in pregnancy, 30 PP studies, and three studies that included both. The EPDS did not differ in detecting possible PD symptoms in pregnancy or PP.

The origination of the EPDS occurred when Cox et al. (1987) developed the EPDS to screen for postpartum depression, identifying ten questions with a high rate of sensitivity and specificity for detecting depression after childbirth. The EPDS consists of 10 questions with answers rated on a Likert-like scale of 0-3 (Cox, 2019). Cox (2019) has recognized the EPDS for continued use in the present day as a valuable tool in both pregnancy and PP. The EPDS has been presented in over 50 languages worldwide in varying cultures. Culturally the scale remains effective when tailored to the language and culture of the screening population, HCP education, and the understanding that the EPDS remains a screening tool, not a diagnostic tool (Cox, 2019). Chan et al. (2022) examined the cultural validity of the EPDS more than 30 years after its institution during semi-structured interviews in a qualitative study with aboriginal women and their midwives. The midwives and patients gave positive reviews for the applicability of the EPDS, and the midwives noted that the EPDS was a conversation starter for PD management.

Multiple research studies have considered the subject of scoring and when to implement screening of the EPDS in the antenatal period. Khanlari et al. (2019) evaluated the scoring threshold of the EPDS for screening in the antenatal period. Meta-analysis of numerous RCTs revealed a historical scoring of 13 out of 30, indicative of a positive depression screening score in the PP period. A lower threshold of 10-12 out of 30 was suggested for positive depression screening in pregnant women and found to be most beneficial at their "booking in" appointment.

Long et al. (2018) completed a retroactive review of 557 screening, referrals, and treatments of multiple obstetricians using the EPDS. Timing of the EPDS presentation proved beneficial at the IPV, again at 24-27 weeks of pregnancy, and then at six weeks PP. Screening rates with positive depression screening scores were 60.1% (>13score 18.21%) at IPV, 35% (>13 17.43%) at 24-27 weeks, and 85.5% (>13 13%) at PP visits indicating earlier screening creates options for earlier referral to mental health services.

A literature review targeting PD conducted by Yeaton-Massey and Herrero (2019) concluded that clinical assessment to guide PD identification was insufficient and suggested early screening, including a validated PD screening tool, a complete mental health history, and a clinical examination, should be completed at IPV and PP. Reilly et al. (2020) reviewed 14 RCT and NRCT studies from 2017 and found increased referral rates associated with early PD screening. However, the timing of PD screening early in the perinatal period was integral to successful management and outcomes. Van Niel and Payne (2020) reviewed PD across multiple studies, including 50 studies reviewed by the United States Preventative Services Task Force (USPSTF) in their recommendation for screening at the IPV to provide maximum benefit from counseling to prevent PD.

Van Niel and Payne (2020) agreed with the ACOG (2018) statement that PD screening provides some counseling benefits in PD prevention. ACOG (2018) endorses screening in the perinatal period and suggests screening in the antenatal period be followed up with PP screening as the USPSTF (2022) recommend.

Summary

PD is one of the most common maladies of pregnancy, with high prevalence rates globally, nationally, and statewide per Dadi et al. (2020); Haight et al. (2019); Van Niel and

Payne (2020); and the GDBH (2022). The risk factors for PD are varied and well-documented, including maternal suicide, an adverse effect on infant development, and poor family relationships. Successful PD depression screening depends on the patient and HCP's recognition of the enablers and barriers to the screening process. PD symptoms mimic general depressive symptoms, with some signs viewed as usual during pregnancy, making choosing a reliable, validated PD screening tool essential. Although first developed more than 30 years ago, the EPDS remains a recognized PD screening tool reproduced in multiple languages and found to be culturally competent in screening for PD depression (Cox, 2019; Chan, 2022). ACOG (2018), the governing body of obstetric care, recommends PD screening, following the USPSTF (2021) recommendations and exhaustive studies and reviews for PD screening in the antenatal period.

Theoretical Model

Nola Pender's Health Promotion Model

Nola Pender's Health Promotion Model (HPM) was used as the theoretical framework for the DNP project. Pender's HPM was developed in 1982 and revised in 1996, reflecting that nursing spends most effort on treatment rather than health promotion and prevention (Murdaugh et al., 2019). Petiprin (2020) suggested that changing healthcare behaviors depends on successful patient interaction. Multiple studies in the above literature review included successful HCP-patient interaction as imperative to accurate PD depression screening, making Pender's HPM an appropriate theoretical framework. The nursing focus of Pender's HPM recognizes social determinants of health and the promotion of patient behaviors to achieve specific outcomes. Health, seen as the foundation of Pender's HPM nursing theory, has three areas of patient focus: (a) Individual Experiences and Characteristics – past healthcare experiences and personal physical, psychological, and social determinants; (b) Behavior Specific Knowledge and Affect –

patient-perceived benefits, barriers, and self-efficacy; (c) Results of Behavior – patient self-control (Petiprin, 2020). According to Murdaugh et al. (2019), patients actively seek to regulate their behaviors by transforming the environment or allowing it to change them. Medical professionals are a part of the patient's interpersonal environment, and interactions alter the patient over their lifespan. Pender's HPM has been used successfully in studies on varying subjects in healthcare to guide care reforms. While some studies do not specifically address PD, they represent health processes that, like perinatal mental health, require increasing demands on society and the healthcare profession.

Cardosa et al. (2022) highlighted Pender's HPM in a qualitative study promoting healthy aging. This literature review of 1,793 articles correlated successful study findings with Pender's HPM's three patient focus areas, individual characteristics, specific behaviors, and implementation of behavior changes. The authors further postulated that Pender's HPM is based on holistic care, social psychology, and learning theory and further concluded that applying this model leads to healthy aging promotion. Saad et al. (2022) applied Pender's HPM to increase the health of myocardial infarction patients. One hundred eighty-eight patient participants were enrolled in a nursing/provider education program using the HPM in assessing, planning, implementing, and evaluating patient knowledge and promoting a healthy lifestyle. Perceived benefits included interpersonal and situational healthcare influences, and the conclusion supported increased patient understanding and beneficial lifestyle changes. Pender's HPM has been studied in obstetrical mental health specifically and can bolster the recommendations of the World Health Organization's (WHO) 2020 Mom's Priorities, including integrating mental health care in OB settings (Johanek 2022). Johanek (2022) further cites increased access, diagnosis, and care as reasons necessitating this change and further states an investment return of 500-1000

healthy life years for every 1,000,000 dollars spent. Laubo et al. (2022) completed a study regarding integrated mental health care in obstetric settings. Focusing on decreasing maternal mortality related to depression by increasing the family's independence in caring for maternal mental health, a nursing education program was created based on Pender's HPM. Based on 64 family participants' post-test scores related to family independence in caring for maternal depression, Pender's HPM successfully guided development in nursing education that led to increased behaviors in recognizing depression and appropriate health action (Laubo et al., 2022).

Plan, Do, Study, Act Model

The Plan, Do, Study, Act (PDSA) model provided the structure for rapid evaluation of the PD screening process implementation. Developed by Walter Shewhart and Edward Deming, the PDSA model, updated in 1983, is presented as a framework to break down and understand needed elements in planning, staging, and continuous improvement (Creighton, 2022). The PDSA model provides structure for quality improvement (QI) projects and aligns with the individual, team, and organizational facilitation of process changes. The PDSA model quickly assesses proposed improvement changes to determine if additional change elements are needed as the project develops (Creighton, 2022). Hobbs et al. (2021) discussed the use of the PDSA in their study on maternal self-care and its effects on family health. Hobbs et al. (2021) suggested that the PDSA model can improve the content, intervention, and evaluation of maternal QI projects. The PDSA model provided for systematic review and adjustment in the screening workflow for PD, for each area of focus associated with Pender’s HPM, including (a) interaction and identification between the medical provider and the patient of a perceived depressive state; (b) physical, psychological, and social determinants affecting the depressive state, the patient's

anticipated benefits of treatment, obstacles to treatment and self-efficacy/promotion; and (c) the patient's ability to control outcomes.

As mentioned previously, Hobbs et al. (2021) credited the PDSA model as beneficial to structuring maternal QI projects. Three studies reviewed the use of the PDSA model in obstetrics and perinatal mental health and led to the consideration of the PDSA model for the PD screening protocol. Lanuza and Butler (2021) discussed the implementation of a safety bundle to improve screening for PMAD in private obstetric practices. The PDSA method structured this safety bundle project's assessment, intervention, implementation, and evaluation. The authors concluded that the PDSA model was instrumental in realizing the 80% PMAD disorder screening rate sat as the goal for the study. The continuation of the PDSA model contributed to staff engagement and electronic health record use, screening, and care practices. Clevesy et al. (2019) undertook a project to improve postpartum depression screening and healthcare provider knowledge of postpartum depression. The PDSA model was the framework chosen to implement and guide this practice change in a community health clinic. Postpartum depression screening rates jumped from 56% to 92.7%. The PDSA model employed at regular intervals throughout the project, along with the edition of the Edinburgh Postpartum Depression Scale (EPDS), was associated with the increase of both screening rate and healthcare knowledge, including the continuation of the process. Gillis et al. (2019) identified a gap in practice in a sizeable nurse-managed midwifery practice related to perinatal depression anticipatory guidance. Patient guidance for positive screening results showed room for improvement even though PD screening was routine. The PDSA model cycle assessed the distribution of educational handouts, provider-initiated discussion regarding perinatal mental health, and a list of online and local perinatal mental health resources to enhance depression treatment (Gillis et al., 2019).

Methodology

The PI developed the project to meet the need for a PD screening protocol among the project stakeholder's OB patients. A comprehensive needs assessment identified a gap in practice related to the lack of a PD screening tool valid in pregnancy. The PI formulated a PICOT question: In women receiving prenatal care, (P) did implementation of a PD screening tool at the IPV (I) compared to the current practice of no PD screening tool (C) increase early identification of PD and appropriate referral to clinic sources (O) in a six-week time frame(T)?

The intervention for this project concerned implementing a PD screening tool to guide the healthcare team in the early referral for PD treatment. The validated PD screening tool chosen for this project was the EPDS in both English and Spanish. The Spanish version of the EPDS was used with permission from the original translator The EPDS a known depression-screening instrument utilized in the postpartum period and has proven to be a valid depression-scoring instrument for the entire perinatal period. The perinatal period includes the time before birth and up to 12 months of PP. Literature reviews have highlighted the EPDS as an authentic device to accurately screen for and compare depression scores associated with the perinatal period. Publisher copyright and reproduction permission was obtained for using the EPDS screening tool in English and Spanish.

The project's participants included patients seen for their IPV and stakeholder staff (nurses and obstetricians) involved in implementing, reviewing, and referring patients for treatment based on the EPDS scores. The PI presented a stakeholder education session providing information on the needs assessment, the rationale for PD screening, Pender's HPM, and the PDSA model, and suggested workflow for implementing the project, data collection, result availability, and the primary investigator's role. Staff consent (Appendix A) was obtained for

participation in the PD screening project. Patient consent (Appendix B) was necessary to participate in the PD screening project, complete the EPDS PD screening tool, and participate in care and discussions regarding referral to behavioral health agencies for positive EPDS screening scores.

Setting

The stakeholder participating in the DNP project was a large community health clinic staffed by graduate medical education residents and attending obstetricians and gynecologists. The practice is ethnically diverse and in the southeastern United States (U.S.). From January 1, 2022, through September 21, 2022, the stakeholder provided prenatal and obstetrical services to 331 out of 4,289 patients that gave birth at the associated hospital.

Population

The QI project related to PD screening, implementation, and appropriate referral included the PI, project preceptor, patients, and DNP project participant group staff. Approximately 15 staff members, including four intake nurses (three registered nurses and one licensed practical nurse) and 11 obstetricians, had contact with the patients during the implementation of the screening protocol. The PI and intake nurses offered the first line of communication during the implementation of the screening tool. Obstetricians were notified of positive screening scores and discussed behavioral health referrals with the patient, with the PI assisting in these discussions approximately 80% of the time.

The expectation was for approximately 35-40 patient participants over 18 to present for their IPV in the project's six-week time frame. The EHR review revealed a sizeable multi-ethnic patient population: international, private pay, privately insured, and underinsured patients experiencing severe socio-economic health disparities. Maternal pregnancy complications

managed by the stakeholder included chronic hypertension (CHTN), gestational hypertension (GHTN), diabetes, advanced maternal age (the oldest obstetric patient according to the EHR in 2022 was 61 years old), late prenatal care, drug addiction, and multiple high-risk chronic health conditions.

Organizational stakeholder project facilitators included personnel from multiple disciplines. These facilitators included information technology, in-house behavioral health (social worker assigned to specific stakeholders), administrative personnel, and the project preceptor. Outside stakeholder facilitators for the PD screening project included the manuscript editor and the statistician for data analysis. The stakeholder's organizational nursing research department was instrumental in the Institutional Review Board (IRB) process.

Inclusion and Exclusion

The inclusion criteria for staff included those directly involved in the patient intake or prenatal assessment and working full-time hours. The inclusion criterion for patients included a presentation for an IPV within the age ranges of 18-55. Both English and Spanish screening questionnaires were available. International patients who did not speak English or Spanish had access to a remote certified healthcare interpreter for the consent, screening, and referral process. Project consent was required from both staff and IPV patients.

Exclusion criteria included staff members other than intake nurses and obstetricians involved in patient assessment. All included staff members consented to PD screening protocol participation. Exclusion criteria included patients outside the 18-55 age range, patient visits coded as other than confirmation of pregnancy or IPV, and patients who did not consent to participation. Additional exclusion criteria included incomplete or incorrectly scored EPDS screening scales, of which there were none.

Recruitment

PD project staff and patient recruitment were instrumental in collecting data to support the project's goal of increasing early identification and behavioral health referral for IPV patients screening >10 or answering other than never for question 10 on the EPDS screening scale. Participation recruitment of staff occurred both in a group setting and on an individual basis as obstetric residents rotated through their office hours. Patient recruitment occurred singularly with an individualized and thorough discussion of the project rationale, patient participation, and contact information for questions and additional resources.

Staff Recruitment

Staff recruitment occurred at an educational/question session on January 11, 2023. The educational session occurred at mid-day. A flyer was distributed in the stakeholder office (Appendix C) requesting participation in this session held in the staff breakroom. A Microsoft TEAMS meeting invite was sent to all participants who could not attend in person. One participant took advantage of the Microsoft TEAMS meeting, and four intake nurses and four obstetricians participated in the in-person education session. The remainder of the obstetricians received PD project education sessions in groups as they rotated through the stakeholder clinic.

Patient Recruitment

Patient recruitment occurred at IPV check-in as nurses completed the patient check-in and assessment process. Patient participants had the opportunity to sign a consent form outlining the project purpose and the voluntary status of the project, along with the right to non-participation or withdrawal from the task at any time with no repercussions to care.

Consent

As mentioned, each staff member and patient signed consent before project participation. The consent form for each participant included the following: (a) the project purpose; (b) the voluntary status of the project; and (c) the right to refuse participation or withdraw from the project. The staff consent included the provision that no part of their job performance would be affected by non-participation/withdrawal. Patient consent consisted of the condition that the quality of their care will not be affected by non-participation/withdrawal. The patients and staff consenting to the project were informed of steps to mitigate any security breach.

Design

The project design followed a QI change model. A QI project seeks to improve individual outcomes (Sylvia and Terhaar (2018). Harrison et al. (2021) suggest that QI projects are instrumental in healthcare, with many change models serving as catalysts for process change (Harrison et al., 2021). Harrison et al. (2021) further recognized the need for clinician involvement in care changes, including the agreement on the need for improvement and the consensus on defining quality factors and process workflow.

Interestingly, Harrison et al. (2021) considered integrating patient contributions, preferences, experiences, and expected outcomes as necessary for successful change cycles; these premises comprise the foundation of Pender's HPM, which was chosen as the theoretical nursing framework for the PD screening project. The systematic review undertaken by Harrison et al. (2021) included over 38 studies regarding change models' effectiveness in multiple healthcare disciplines' QI projects.

Coleman et al.’s (2020) study supported using the PDSA change model in guiding a depression screening QI project across a large healthcare organization. A needs assessment for depression

screening at the organization revealed that patients were not receiving depression screening based on a measurable scale. Physicians screened for depression symptoms based on patient responses to somatic and non-somatic symptom assessments. Evaluating depression symptoms in this way is a non-quantitative approach, and a needs assessment led to more than 100 physicians implementing a quantitative, validated depression screening tool. PDSA cycles were conducted regularly to monitor the process workflow and ensure the screening tool met the required objectives of a measurable, comparable depression screening tool across the patient care continuum. The PDSA change model proved beneficial in successfully treating 17,052 patients during the study's three-year period, with the quantitative and validated depression screening tool continuing to be used today (Coleman et al., 2020).

Plan

Completing a needs assessment related to screening for depression in the perinatal period, the PI found that the EPDS available in the EHR for the stakeholder was not used during pregnancy to screen for PD, which did not align with evidenced-based PD screening protocols. The lack of screening for depression symptoms during the pregnancy portion of the perinatal period did not meet ACOG standards (ACOG, 2018). The needs assessment conducted by the PI led to the formulation of a PICOT question. In women receiving prenatal care (P), does the implementation of a PD screening protocol at the IPV (I) compared to the current practice of no PD screening protocol (C) increase early identification of PD and appropriate referral to clinic sources (O) in 6 weeks (T)? A PD screening protocol employed at the IPV fulfills Pender’s HPM’s directive for nursing/healthcare providers to promote healthcare behavior (Petiprin, 2020).

Do

Van Niel and Payne (2020) recommended implementing an evidence-based practice, validated PD screening tool at the IPV. The EPDS scale was the validated PD screening tool chosen. A nursing/provider education session highlighted PD, the rationale for screening, the EPDS, Pender's HPM, and the PDSA model to allow for rapid project evaluation. Brochures were provided to both nursing and obstetricians, explaining the project purpose/aims/objectives and a workflow outline. Instruction for nursing in implementing a validated PD screening tool at all IPVs aligned with Pender's HPM's first focus concerning the patient's perceived state of health. Specifically, this screening opened the lines of communication between patients and nursing concerning physical, psychological, and social concerns related to perinatal depression. A script was provided for IPV intake nurses to allow for standardized answers to participant questions regarding the screening tool. The PI was on-site and provided additional education as needed while assisting in the consent and screening process.

Patient educational brochures (Appendix D) explained PD, including symptoms, the rationale for PD screening, and local and online resources. Obstetricians seeing the patient for their IPV were notified by office email of positive depression screening scores. Positive PD screenings followed the patient for review by the obstetrician, and a discussion of rationale, results, and referrals occurred. The exchange between obstetrician and patient aligned with Pender's HPM's second focus of specific behaviors and includes the patient's perceived barriers to mental health, benefits of treatment/resources, and self-efficacy expectations. Obstetricians responded to the email verifying that the patient was referred to the stakeholder behavioral health resource.

Study

Nursing and obstetricians reviewed each step of the PD screening process weekly. The project discussion included what was going well, the challenges to workflow, nursing, obstetrician, and patient participation, and any data collection challenges. Input from each patient participant was considered and related to Pender's HPM second focus of perceived barriers to mental health, benefits of treatment/resources, and self-efficacy expectations.

Act

Eby (2021) suggested that the A for Act could represent adjustment. Each weekly PDSA cycle ended with a plan to continue workflow interaction that proved successful and to adjust that which was not. Sustainability for continuing PD screening depended on nursing/obstetrician/patient buy-in demonstrating the importance of HCP/patient interaction as per Pender's HPM. A streamlined workflow that proved beneficial for PD screening, detection, discussion, and referral was demonstrated.

Data Collection and Analysis

PD project data was collected via several modalities. The "slicer-dicer" feature was used to obtain pre-data from the EHR, filtered for HCP delivery, PD screening, and depression diagnosis referral. As mentioned previously, post-data was dependent on both staff and patient consent. Post-data was collected weekly after reviewing EPDS scores for accuracy and inter-office communication with each HCP regarding positive scores and behavioral health referrals. This communication occurred via the stakeholder's password-protected, Health Insurance Portability and Accountability Act (HIPPA) compliant e-mail network.

Pre-Data

Pre-data for the PD screening project obtained via a quantitative EHR chart review revealed 333 deliveries for the stakeholder in nine months. A search for PD screenings for each delivering patient yielded zero validated PD screening scores conducted during the patient obstetric assessment. Outside referrals were filtered to include depression only, and eleven psychiatry/psychology referrals out of 333 eligible deliveries resulted. According to the stakeholder meetings, direct report behavioral health referrals were made for depression upon self-report or with a known diagnosis if not currently treated.

Post-Data

Post-data for the PD screening project depended on discrete, quantitative data obtained via the EPDS, a 10-question quantitative patient survey modeled after a Likert-like scale measuring thoughts and feelings in the last seven days before the IPV. Data collected included categorical (yes/no answer) variables related to staff/patient consent to participate in the project, actual presentation of the EPDS screening tool to the patient, completion of the EPDS, correct scoring, and referral to behavioral health resources based on a positive depression screening score of > 10. The determination for which patient received the EPDS PD screening tool was made after a daily patient schedule review for visits coded as IPVs and confirmation of pregnancy appointments converted to IPVs. English and Spanish versions were found online and copied to multi-colored paper for easy tracking within the stakeholder's office.

Risks and Benefits

Risks of PD screening tool implementation included recording potentially inaccurate PD depression symptoms (positively or negatively) related to incorrect initial scoring of the quantitative PD screening tool. Education sessions regarding the EPDS and specific scoring were

presented. Weekly PDSA cycles were conducted to ensure the proper presentation, use, and scoring of the EPDS PD screening tool.

The primary patient benefit of IPV PD screening is early recognition and intervention via behavioral health referral to appropriate sources currently established with the project stakeholder. The PD screening project aimed to show increased PD screening via a validated, quantitative PD screening tool, namely the EPDS.

Compensation

The PI has minimalized the possibility of coercion in stakeholder and patient participation in this DNP project by ensuring that no special considerations involving job performance or OB care were given. The PI did not offer monetary or in-kind compensation to staff and patients to participate in the project. The stakeholder presented a light luncheon at the project education session. The PI provided small tokens of appreciation for the intake nurses attending the education session, totaling 200 U.S. dollars. The PI provided light refreshments after project completion to show appreciation.

Timeline

The DNP PD screening project was planned, developed, and implemented with complete data collection and analysis finalized and presented from May 2022 to July 2023 (Appendix E). The PI requested permission to conduct a QI project for the stakeholder in May 2022. A needs assessment of patient processes was conducted at the stakeholder's office in June 2022. The determination for a PD screening project was presented, and a letter of support was received from the stakeholder preceptor on September 22, 2022 (Appendix F). The project's PI received the stakeholder's IRB determination of QI on November 4, 2022, indicating full IRB research approval was unnecessary (Appendix G). An amendment to include a statistician and editor was

approved on March 20, 2023 (Appendix H). Institutional IRB approval was received for the QI project on December 13, 2022 (Appendix I). An amendment to have a statistician and editor was approved on March 13, 2023 (Appendix J). Stakeholder education was completed in one session on January 11, 2023. Implementation of the PD screening tool began on January 17, 2023. The PI ended data collection on February 24, 2023. Data analysis and results were finalized on March 21, 2023. The PI will share project results at an institutional virtual dissemination day on July 13, 2023, and with the stakeholder in July 2023. All data collected for project implementation will be destroyed in July 2023.

Budget and Resources

The PI established a 390 U.S. dollar budget for the PD screening implementation project (Appendix K). This money was used to purchase the latest edition EPDS manual, copyright charges incurred from Cambridge Core for the use of the EPDS screening scale, printing costs for both staff and patient consent forms, the EPDS screening scale and educational brochures, various office supplies and the education session tokens of attendance appreciation. Research resources were used free of charge from both the institutional library, the project stakeholder, and community/online sources, and the PI's time spent in the actual implementation phase totaled 250 hours.

Evaluation Plan

Statistical Considerations

A statistician was sought and approved by both the stakeholder and institutional IRB in consideration of the multiple outcome measurements. Successful implementation of the PD screening project at the stakeholder's office led to an invitation to present the PD project data to all OB providers delivering at the stakeholder hospital of record. Employing a statistician

ensured that PD project data was supported as reliable and valid. Reliable and accurate data will be crucial in gaining support for a system-wide change to screen for PD.

Data Maintenance and Security

The PI mitigated the risk of compromising personal health information. Potential information identifying human subjects was protected under HIPPA per stakeholder regulation. Confidentiality of information recorded was maintained using non-specific, non-identifying data in the form of a date and IPV number. Each EPDS screening tool was labeled with this identifier only with no identifying patient information. Stakeholder staff and patient consent forms obtained with personal signatures were kept in a locked office at the stakeholder site. The only authorized users were the intake nurses and obstetricians consenting to collect patient information, the project preceptor, and the PI. The primary quantitative data EPDS PD positive screening tool was included with the patient's paper chart and followed the patient through the IPV visit for review by the obstetrician per stakeholder-protected health information policy. Upon completion of the patient's IPV, the hard copy of the EPDS PD screening was stored in an authorized protected health information storage area at the project stakeholder, along with the staff and patient consent forms. The PI collected the hard copies at least three times weekly for review and data recording, completed at the stakeholder's physical address. Data collected was entered into and secured by a HIPAA-compliant Microsoft EXCEL platform with password sign-on protection for authorized user log-in and sharing capability. Badge readers were also necessary for authorized personnel to access the office. All data records will be destroyed immediately following the presentation of the project findings via the healthcare private information disposal system located at the stakeholder's office.

Protection of Human Subjects

Before beginning implementation, the PI obtained institutional and stakeholder IRB approval and designation of the PD screening project as a QI project. Significant events have occurred, championing human rights while pursuing research, including the Nuremberg Code of 1947 and The Belmont Report of 1978. Human rights in research continue to be discussed and overseen by IRBs (White, 2020). While IRBs ensure that research protocols are conducted ethically, individual project/research investigators are responsible for ensuring the rights of all human subjects involved in their work (White, 2020). The PI obtained further training and certification to ensure human subjects' rights during the research (Appendix L).

Results

Statistically, implementing a PD screening project met all expected outcome measurements. Desired outcome measurements included: (a) EPDS presentation to 100% of the IPV patients; (b) consent obtained from 100% of HCPs involved with IPV intake and assessment; (c) 80% of all IPV patients consenting to EPDS completion; (d) 100% of all EPDS scales scored correctly; and (e) 100% of all EPDS positive scores of >10 or answer other than NEVER to EPDS question #10 referred to behavioral health resources.

Results of Data Analysis

Implementing the EPDS screening tool to all IPV patients was the first desired outcome. Sixty-five patients were scheduled for IPV appointments during the project's six-week time frame, and 42 patients attended their scheduled IPV appointments. The stakeholder was chosen for implementing the PD screening project due to its diversified population. Of the 42 patients presenting for IPV appointments, 12 were Black (28.57%), ten were Caucasian (23.81%), and 19 were Hispanic (45.22%); one Arabic participant (2.38%) was not screened due to the inability to

communicate with the online interpreter due to dialect resulting in 41 IPV patients total (Figure 1).

The second measurable outcome included consent to participation. Consent was obtained from 100% of all HCPs, including IPV intake nurses and obstetricians (Figure 2). Post-data statistical significance of PD screening depended on achieving PD screening for more than zero perinatal patients screened for PD before project implementation. This outcome relied on patient consent to participate in the PD screening project. The PI anticipated at least 80% of IPV patients providing consent to PD screening project participation. Three IPV patients out of 41 completed appointments (7.14%) did not offer PD screening project consent. An 80% or more threshold was established to measure the effectiveness of obtaining informed consent. For this study, informed consent was obtained from 38 out of 41 participants. A one-sample proportion test was conducted using Minitab software to determine if the statistical significance for a PD screening project meets or exceeds that threshold. At the 5% significance level, the test results indicated sufficient evidence to conclude that the proportion of IPV patients consenting to participate and successfully screened for PD significantly exceeded 80% ($z = 2.03$, $p = 0.021$). Exceeding the 80% PD screening threshold set for the PD screening implementation project achieves the overall project goal of realizing a significant increase between pre-implementation data of 0% of IPV patients screened for PD versus post-implementation data of >80% (92.68%) of IPV patients screened for PD (Figure 2). The PD screening post-implementation data strongly supports the successful implementation of the ACOG recommendation for PD screening during pregnancy for early detection and intervention for PD symptoms.

The third expected outcome was correct scoring by the IPV intake nurses of all EPDS screening tools. Accurate scoring was achieved 100% of the time, and this data was obtained by auditing each EPDS screening tool bi-weekly.

The fourth and fifth expected outcomes of the PD screening project involved the number of positive EPDS scores received from IPV patients and the number of referrals for each positive EPDS score. There was a 100% expected referral rate for all positive EPDS scores. Seven IPV patients scored >10 or answered with a question other than NEVER to question #10 of the EPDS screening tool. This represented 18.42% of IPV patients with a positive PD screening via the EPDS. Each of these seven patients was appropriately referred to behavioral health resources via the social worker engaged by the stakeholder to coordinate behavioral health care. This data was obtained via a chart review bi-weekly during the six-week implementation process (Figure 3).

Discussion

Implications for Clinical Practice

The PD screening QI project's goal of achieving a significant increase in PD screening during pregnancy was successfully met, as supported by data results and analysis. Specific project aims included presenting the EPDS at each IPV appointment, obtaining patient consent, and correct post-scoring. The obstetrician reviewed positive PD scores during the visit and made appropriate referrals. Project objectives met included arranging workflow to accommodate the EPDS during IPV intake, continued staff review of the EPDS questions and proper scoring guidelines, and the development of a shared mental model amongst all stakeholders, which supported PD screening rationale and importance for all patients. Successful implementation of the PD screening project and achieving the project's aims, objectives, and overall goal have reinforced the need for continued clinical practice. Education regarding Nola Pender's HPM and

the PDSA change model for QI Projects have provided all stakeholders with the tools necessary to continue to refine the screening process. The number of positive screening results on the EPDS by the third week of implementation highlighted the need for additional behavioral health resources. As a result of this data, OB depression support groups are now being developed by the stakeholder. Ultimately, an OB depression support group for all obstetric practices at the stakeholder's delivering hospital and system-wide is envisioned.

Implications for Healthcare Policy

A change in healthcare policy depends on evidence of increased quality and cost-effectiveness and must be efficient (Wensing et al., 2020). PD screening offered at each IPV was instrumental in early findings of positive PD scores via the EPDS. Data collected supported referrals to behavioral health resources that would not have been completed pre-EPDS intervention. Cost-effectiveness was realized by successfully incorporating the EPDS screening into the existing workflow, increasing the provider/patient time spent by minutes for generalized PD screening. The EPDS is available in the EHR used at the stakeholder site allowing for the efficiency and cost-effectiveness of continued use. The information provided regarding the validity of the EPDS during the prenatal period, the ease of screening, and at least 85% IPV patient acceptance of the EPDS will provide the evidence needed to begin using the EPDS EHR flowsheet already available instead of individual screening forms, further cutting costs. The PI of the PD screening project envisions a system-wide healthcare policy mandating that the EPDS EHR flowsheet become part of each IPV at all OB practices within the stakeholder's hospital system.

Implications for Quality/Safety

As previously noted, maternal suicide related to PD is one of the top causes of maternal mortality (ACOG,2018). The literature also shows that PD negatively impacts maternal/infant bonding and family relationships. The effect of PD on finances, both through cost to the health care system and reduction of earning potential, has been demonstrated. The successful use of the EPDS to screen for PD during the perinatal period could lead to more accurate PD behavioral health referrals and resources, leading to interventions that would theoretically decrease the number of maternal suicides, positively impact maternal/infant bonding and family relationships, as well as save health-care dollars and increase individual earning potential.

From an HCP perspective, instituting a PD screening protocol allows HCPs to assess their feelings regarding mental illness and seek continuing education to better relate to patients suffering from mental illness. Increasing the number of behavioral health resources specializing in PD will be paramount for successfully implementing PD screening. Self-reflection, more significant educational opportunities concerning PD, and additional behavioral health resources can only lead to higher quality, safer obstetric care.

Implications for Education

Increasing the feelings of self-efficacy in an HCP's approach to perinatal mental illness, including screening for and referring patients exhibiting PD symptoms, will hopefully lead to more discussions on perinatal mental illness with peers, thereby increasing PD resources throughout the system. The accurate relaying of PD rationale and successful interaction between HCP and patient following Pender's HPM patient focus areas should increase PD screening, referral, and follow-up participation. Successful QI project implementation by nursing can be a foundational basis for continued organizational evidence-based process changes.

Limitations

PD screening project limitations included: (a) language barriers; (b) cultural deferral to male support persons; (c) limited behavioral health resources; and (e) the need for additional consent for PD screening. The EPDS was provided in both English and Spanish. Most non-English speaking patients completed the EPDS with a certified medical interpreter; however, one participant was excluded due to the inability to engage an appropriate Arabic dialect interpreter. Spanish-speaking patients completed the Spanish language EPDS with or without a certified medical interpreter. Several IPV patients were from cultures that defer to significant male others for approval. During the IPV visit for these patients, discussion regarding participation in and responses to the EPDS could have been affected. The stakeholder's primary behavioral health resource was a social worker assisting patients navigating available resources. This social worker was a shared resource with an internal medicine clinic, potentially affecting the time spent with each patient referred. Additional consent, outside the standard consent for treatment presented to each obstetric patient at the stakeholder's office, was required for this QI project. Implementing and including PD screening system-wide to include PD screening in the standard consent for treatment and using the EPDS already available in the stakeholder's EHR rather than a hard-copy screening tool could lead to greater IPV patient participation.

Dissemination

The PD screening process development, implementation, and results will be disseminated on July 13, 2023, during an institutional virtual dissemination conference. The PD screening process change outcome results will be presented at the stakeholder's office the following week. A project dissemination goal is to present the rationale and findings at an OB department quarterly meeting in August 2023. After the OB meeting, the PD screening project manuscript

will be shared with the stakeholder's organizational nursing research department. The dissemination of findings related to the PD screening project will highlight the importance of the DNP-prepared nurse placing evidence-based research into practice, increasing positive patient outcomes, and decreasing healthcare costs by focusing on specific patient metrics (Labardee et al., 2020).

Sustainability

The Oxford University Press intimates that sustainability describes a concept that can maintain itself at the beginning level of achievement (Oxford University Press, 2023). According to Bradshaw and Vitale (2020), the DNP must exhibit an impact on practice, policy, education, and the health system for the project to be considered sustainable. The potential to realize a sustainable PD depression screening process change in the stakeholder's practice is high. A strength, weakness, opportunity, and threat (SWOT) analysis (Appendix M) was completed to aid in future planning. Resources are available to continue the EPDS screening implementation policy, including accessibility to evidence-based continuing education modules related to perinatal mental illness on a practice and system level. The presentation of the PD screening QI project at the quarterly OB department meeting will be instrumental in achieving EPDS PD screening sustainability in all stakeholder organization's OB offices, affecting the stakeholder's healthcare system. Demonstrating compliance with the eight DNP essentials outlined by the American Association Colleges of Nursing (AACN), the PD DNP project will open communication with healthcare leadership regarding the role of the DNP-prepared nurse (Labardee et al. 2020). The recognition of a DNP-prepared nurse and the benefits provided to the healthcare system could potentially lead to additional DNP projects related to perinatal mental illness, such as maternal and infant bonding, cognitive delays in infants affected by maternal

depression, the role of PD in family and social relationships, and the financial burden associated with PD.

Plans for Future Scholarship

Several exciting opportunities may be realized through the development and implementation of the PD screening project. A PD support group is currently under development through the stakeholder's behavioral resource. As the need for additional organizational system-wide resources for PD becomes known, the possibility of a system-wide navigator to facilitate patient assessments, referrals, and follow-up may develop. This position would continue further research and development of perinatal mental illness, staff and patient education programs, screening needs, and referral resources. Presentation of the PD screening project's rationale and results at an annual Association of Women's Health in Obstetrical and Neo-natal Nursing (AWHONN) convention may be pursued.

Conclusion

ACOG (2018), referencing a study conducted by Palladino et al. (2011), reports that maternal suicide related to depression in the perinatal period leads to more maternal deaths than post-partum hemorrhage or cardiovascular disorders of pregnancy, such as pre-eclampsia. The need for a valid, accurate PD screening tool in both pregnancy and post-partum that can lead to effective referrals for positive results is sanctioned by ACOG (2018). A literature review found agreement on the definition of PD and when to screen, as well as numerous discussions of the deleterious effects of PD across the family unit and the enablers and barriers to screening success for both patients and HCPs. The EPDS fulfills the requirements for a valid, accurate, and consistent screening tool throughout the entire perinatal period, including pregnancy and post-partum. Presenting HCP education regarding the rationale for PD screening while referencing a

practical nursing theory to guide patient interaction, such as Pender's HPM, and an effective QI change model, such as the PDSA, allowed for the successful integration of PD screening into the current IPV intake workflow. The PD screening QI change proved efficient and cost-effective with the existing organizational resources at the stakeholder's practice. The PD screening QI project had several expected outcomes. Outcome measurement was completed using data collected via categorical (yes/no) answers. These questions included: (a) was the EPDS presented to the patient during the IPV, (b) did the patient and staff consent to participation, (c) was the EPDS scored correctly, (d) was the EPDS screening scale positive (score >10) or answer other than never to question 10, and was referral made to behavioral health resources for positive scores? The expected outcomes were 100% staff consent to participation, presentation of the EPDS with rationale for screening discussed with 100% of IPV patients, 80% or more of the IPV patients consenting to participation (including completing the screening), and 100% of the positive PD screenings referred to behavioral health resources. The goal of significantly increasing PD screening during pregnancy for the stakeholder's patients was realized and proven by data analysis. Future sustainability and organizational integration will depend on presenting project findings and communicating with OB leaders to implement a PD screening healthcare policy. Furthermore, the PD screening project will demonstrate to healthcare leadership the momentous need for the DNP-prepared nurse to put research into practice for perinatal mental health and beyond.

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Figure 1

Participant Breakdown by Ethnicity

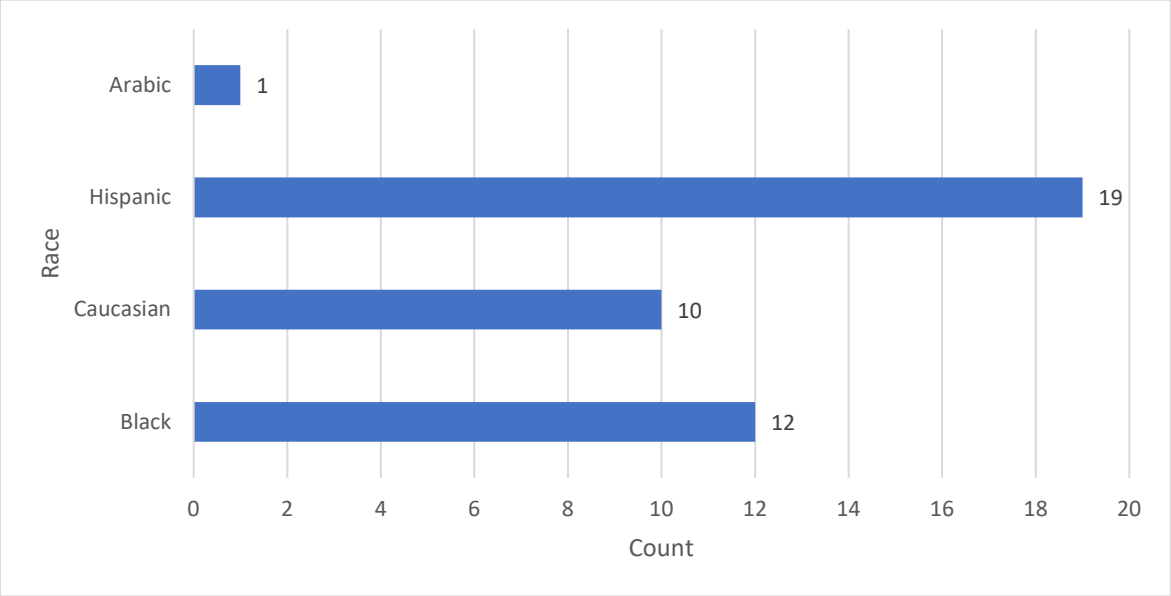


Figure 2

Patient Consent Obtained

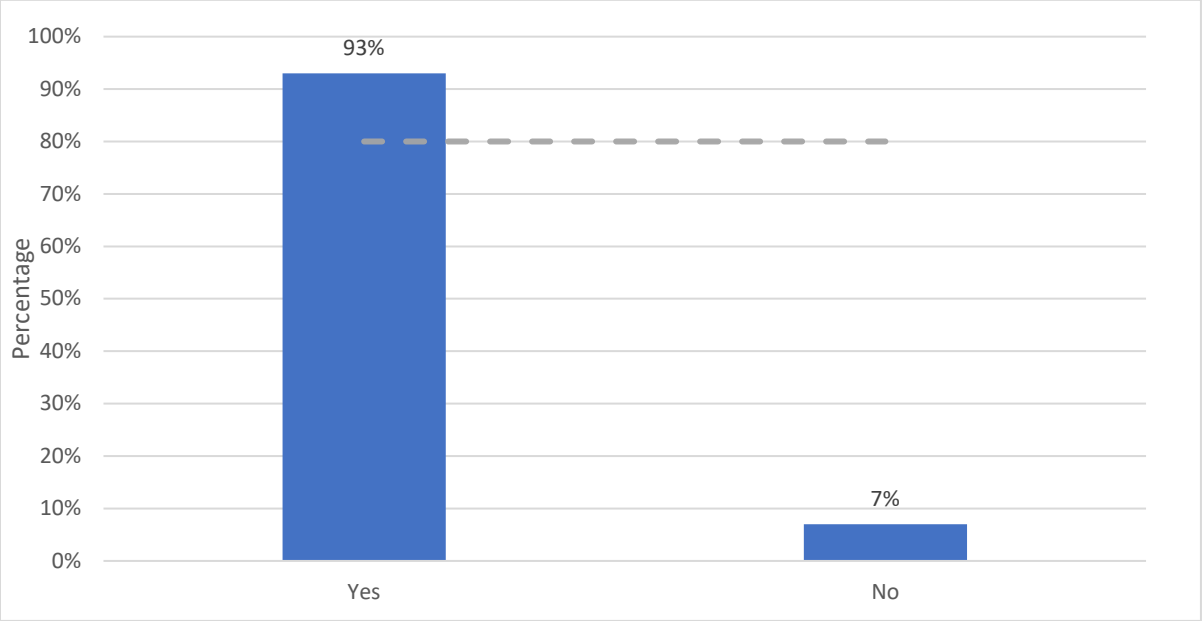
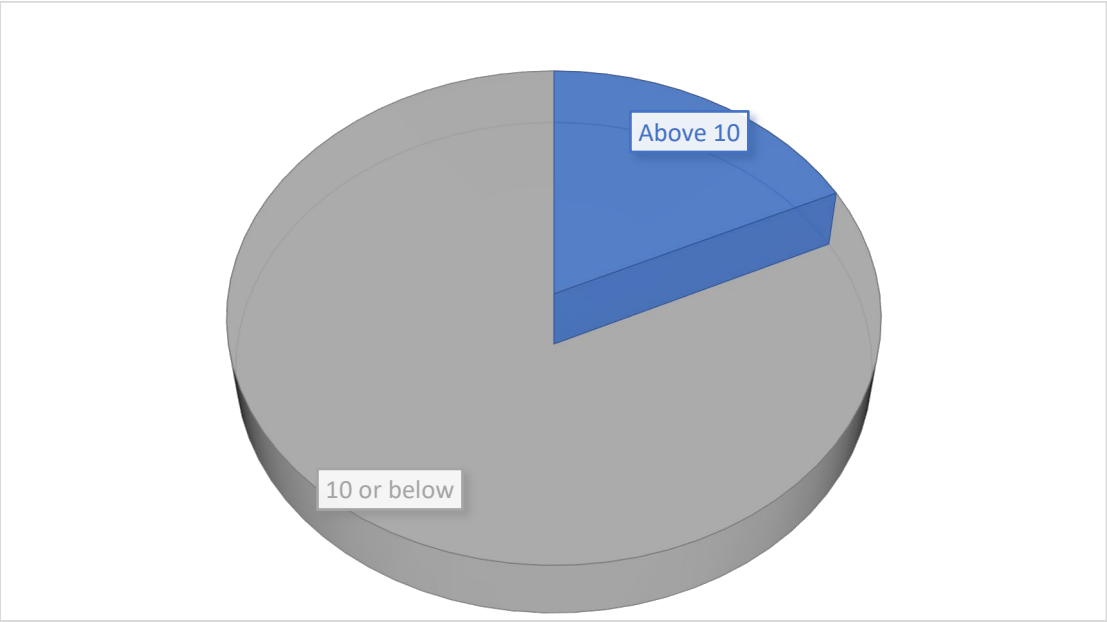


Figure 3

EPDS Scores with Referral to Behavioral Health Resources for Scores Above 10



Appendix A

Staff Participation Consent

Staff Participation Consent Form for Screening Questions

The purpose of this consent form is three-fold, it serves to:

1. Provide transparency related to the implementation of a Doctor of Nursing Practice (DNP) student project
2. Inform agency staff (Nurses, Medical Assistants and Physicians) as to the purpose of this practice improvement project
3. Seek informed consent for voluntary participation in the project.

project:

- Feel free to ask the principal investigator.
- You will be provided with answers which you clearly understand
- You will be informed of the risks (which do not apply to this project) and the benefits of participation.

After a clear explanation of the process improvement project:

- You may elect to voluntarily participate in the DNP Practice/Process Improvement Project
- If you decline to participate, no retribution will occur
    - Your job status with the agency will not be impacted
- Participation is strictly voluntary

Title of Study: Implementation of a Perinatal Depression Screening Protocol (Edinburgh Postpartum Depression Scale)

Principal Investigator Name and Contact Information: Donna Michele Fuller, MSN, FNP-C

Purpose of the DNP Project: To provide evidenced based (American College of Obstetrics and Gynecology) perinatal depression screening

Location of DNP Project: XXXXXXXXXXXXXXX

Description of the DNP Project: Implementation of the Edinburgh Postpartum Depression Scale (EPDS) at the initial prenatal visit – EPDS is reliable while pregnant per evidenced-based practice

Length of Time of Participation in the DNP Project: Initial Prenatal Visit Only (10 questions – maximum time 10 minutes to complete)

Benefits of the DNP Project: The EPDS screening provides an evidence based perinatal depression scale that can be compared to current EPDS conducted postpartum

Potential Risks of Participation in the DNP Project:
Participation in this project is voluntary. All information obtained during the practice/process improvement project will be kept confidential and destroyed after the completion of the process improvement project. Misdiagnosis of perinatal depression can be viewed as a participant risk as no screening is 100% effective. Resources are provided to you on an attached page and include Perinatal Depression symptoms and community resources if you experience any of these symptoms despite negative screening.

Confidentiality:

No confidential or identifiable information will be collected. All information obtained will be securely stored

What will happen if you do not wish to participate in the project or if you later decide not to stay in the project?

Participation in this project is voluntary. Participants are given a choice to participate and may change their minds at any time and withdraw from participation. If you wish to not participate or withdraw from the project at any time, you may do so without fear of penalty or loss of benefits to which you are otherwise entitled.

Who can you call if you have any questions?

If you have any questions about your participation in this practice improvement project, please call the principal investigator:

Donna Michele Fuller - (678) 386-6710 DMicheleFuller@gmail.com

1. Consent Signature Page:

I understand the purpose and implications of the discussed process improvement intervention. My questions have been answered, and I agree to take part in this DNP Quality Improvement Project/Intervention.

Name: _____
Signature: _____Date: _____

2. Signature of Primary Investigator/Individual Obtaining Consent:

I have explained the purpose, mechanics, and implications of this practice improvement project to relevant stakeholders to the best of my ability. I have addressed concerns with the parties involved.

Investigator/Person Obtaining Consent (printed name): Donna Michele Fuller MSN, FNP-C

Signature: _____ Date: _____

Appendix B

Patient Participation Consent

Patient Participation Consent Form for Screening Questions

The purpose of this consent form is three-fold, it serves to:

4. Provide transparency related to the implementation of a Doctor of Nursing Practice (DNP) student project
5. Inform participants (patients) as to the purpose of this practice improvement project
6. Seek informed consent for voluntary participation in the project.

If questions should arise during this practice improvement project:

- Feel free to ask the principal investigator.
- You will be provided with answers which you clearly understand
- You will be informed of the risks (which do not apply to this project) and the benefits of participation.

After a clear explanation of the process improvement project:

- You may elect to voluntarily participate in the DNP Practice/Process Improvement Project
- If you decline to participate, no retribution will occur
    - your care with the agency will not be impacted
- Participation is strictly voluntary

Title of Study: Implementation of a Perinatal Depression Screening Protocol (Edinburgh Postpartum Depression Scale)

Principal Investigator Name and Contact Information: Donna Michele Fuller, MSN, FNP-C

Purpose of the DNP Project: To provide evidenced based (American College of Obstetrics and Gynecology) perinatal depression screening

Location: XXXXXXXXXXXXX

Description of the DNP Project: Implementation of the Edinburgh Postpartum Depression Scale (EPDS) at the initial prenatal visit – EPDS is reliable while pregnant per evidenced-based practice

Length of Time of Participation in the DNP Project: Initial Prenatal Visit Only (10 questions – maximum time 10 minutes to complete)

Benefits of the DNP Project: The EPDS screening provides an evidence based perinatal depression scale that can be compared to current EPDS conducted postpartum

Potential Risks of Participation in the DNP Project:
Participation in this project is voluntary. All information obtained during the practice/process improvement project will be kept confidential and destroyed after the completion of the process improvement project. Misdiagnosis of perinatal depression can be viewed as a participant risk as no screening is 100% effective. Resources are provided to you on an attached page and include Perinatal Depression symptoms and community resources if you experience any of these symptoms despite negative screening.

Confidentiality:
No confidential or identifiable information will be collected. All information obtained will be securely stored

What will happen if you do not wish to participate in the project or if you later decide not to stay in the project?

Participation in this project is voluntary. Participants are given a choice to participate and may change their minds at any time and withdraw from participation. If you wish to not participate or withdraw from the project at any time, you may do so without fear of penalty or loss of benefits to which you are otherwise entitled

Who can you call if you have any questions?

If you have any questions about your participation in this practice improvement project, please call the principal investigator:

Donna Michele Fuller - (678) 386-6710 DMicheleFuller@gmail.com

1. Subject Consent Signature Page:

I understand the purpose and implications of the discussed process improvement intervention. My questions have been answered, and I agree to take part in this DNP Quality Improvement Project/Intervention.

Subject Name: _____
Subject Signature: _____Date: _____

2. Signature of Primary Investigator/Individual Obtaining Consent:

I have explained the purpose, mechanics, and implications of this practice improvement project to relevant stakeholders to the best of my ability. I have addressed concerns with the parties involved.

Investigator/Person Obtaining Consent (printed name): Donna Michele Fuller MSN, FNP-C

Signature: _____ Date: ___

Appendix C

DNP Project Recruitment Flyer

A Professional Development Workshop

WHAT: **A Doctor of Nursing Practice Student Project: Implementation of a Perinatal Depression Screening Protocol – presented by: Donna Michele Fuller, MSN, FNP-C**

WHY: **Perinatal Depression Contributes to Maternal Mortality More than Hypertension or Post-Partum Hemorrhage Combined**

WHEN: **Participation Session Available During the Workday January 11, 2022 at 1215**

WHERE: **Staff Breakroom**

HOW: **Perinatal Depression screening integrating Pender's HPM and the Plan, Do, Study, Act change model to comply with recommended ACOG practice of Perinatal Depression screening during pregnancy**

Appendix D

Patient Brochure

Resources:

GME OB Office – (470) 956-3860

Georgia Crisis and Access Line

Available 24/7 (800) 715-4225

Cobbcollaborative.org/mind-your-mind

Nami.org/about-mental-illness/warning-signs-and-symptoms

911 for IMMEDIATE ASSISTANCE

You Are Not Alone

Perinatal Depression Screening

Doctor of Nursing Practice Project

Donna Michele Fuller, MSN, FNP-C

Candidate for Doctor of Nursing Practice – Jacksonville State University

Preceptor/Mentor: Dr. Teresa Byrd, MD – GME Obestetrics

Perinatal Depression Screening

Welcome to your first prenatal visit!

Perinatal depression is a worldwide problem for moms, babies and families.

You have the opportunity to participate in a Doctor of Nursing Practice project to screen for Perinatal Depression using the Edinburgh Postpartum Depression Scale (EPDS).

Project participation is voluntary. You will be asked to sign a consent to participate. No identifying patient information will be used in the project. Your information will remain confidential. Your doctor will use this information to provide the best care possible for you.

If you chose not to consent your care will not be affected in anyway

Your participation will be greatly appreciated and will help to establish screening practices for other moms.

Perinatal Depression

With your consent you have agreed to participate in a Doctor of Nursing Project which introduces a validated Perinatal Depression Screening Tool. No depression screening tool is 100% effective in recognizing every case of Perinatal Depression. If you experience any of the symptoms listed, even if screening results are negative, community resources are available for help. Your obstetrician is also always available.

Symptoms

- Prolonged/strong feelings of irrtiablity or anger
- Avoiding friends and social activities
- Difficulty understanding or relating to people
- Changes in sleeping/eating habits
- Changes in sex drive
- Delusions/hallucinations
- Use of alchohol/drugs
- Aches/Pains without cause
- Inability to carry out daily activities
- Overconcern or lack of concern about appearance
- **Thoughts of self-harm or suicide** SEEK HELP IMMEDIATELY!

(National Alliance on Mental Illness, nami.org/about-mental-illness/warning-signs-and-symptoms

Notes:

Appendix E

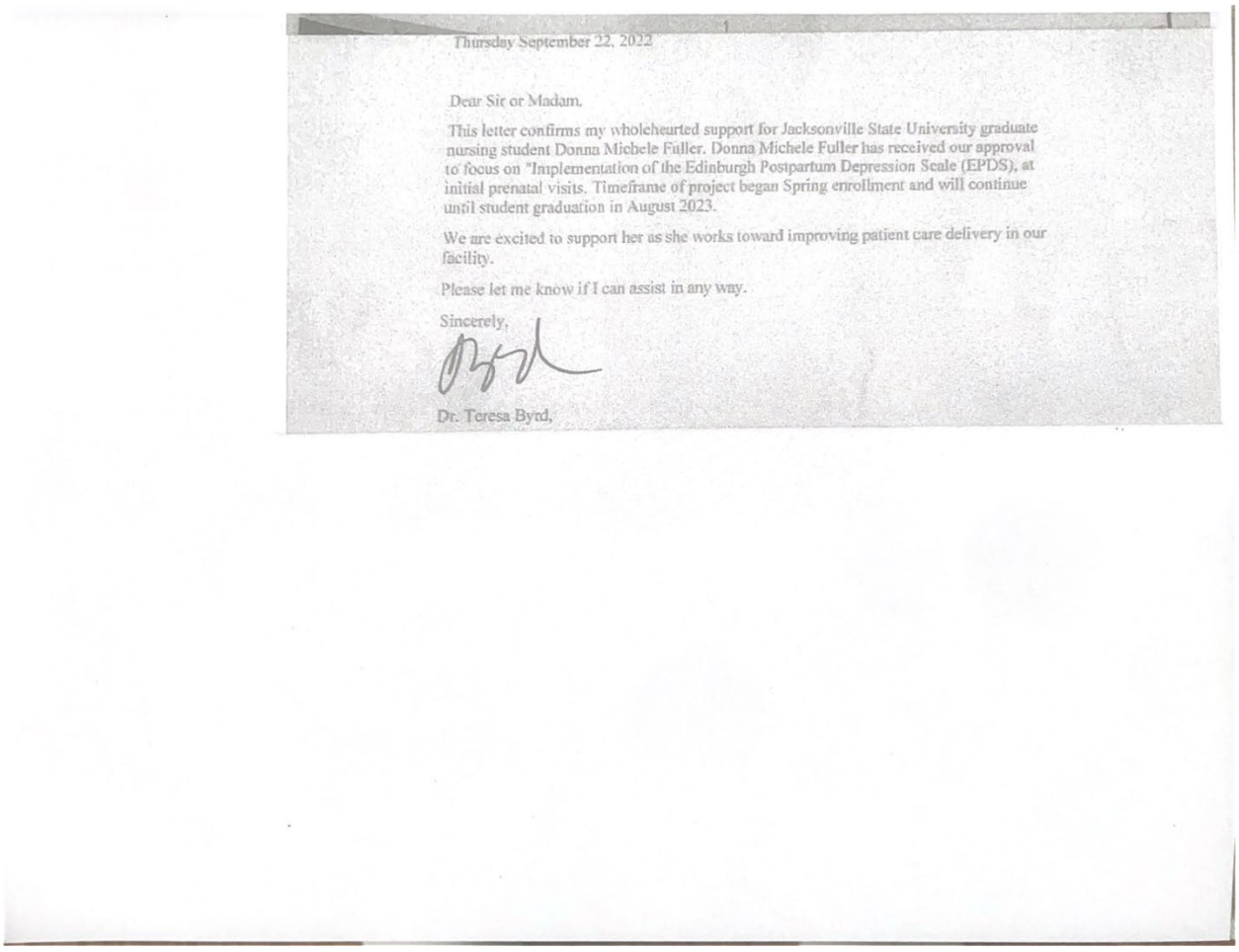
Implementation of a Perinatal Depression Screening Protocol Timeline

Doctor of Nursing Practice (DNP) Project Timeline

Project Task	MAY JUNE JULY 2022	SEPT 2022	OCT 2022	NOV 2022	DEC 2022	JAN 2023	FEB 2022	MARCH 2022	APRIL 2023	MAY 2023	JUNE 2023	JULY 2023
Project Development – Including: needs assessment and institutional approval of topic	X											
Stakeholder Letter of Intent And IRB applications		X	X									
Stakeholder IRB APPROVAL				X								
Institutional IRB APPROVAL					X							
Stakeholder Education Session						X						
Project Implementation						X	X					
Editor and Statistician IRB Amendment								X				
Data Analysis - Manuscript								X	X	X	X	
JSU Virtual Dissemination Day												X
Stakeholder Dissemination Day												X

Appendix F

Preceptor Letter of Support



Thursday September 22, 2022

Dear Sir or Madam,

This letter confirms my wholeheurted support for Jacksonville State University graduate nursing student Donna Michele Fuller. Donna Michele Fuller has received our approval to focus on "Implementation of the Edinburgh Postpartum Depression Scale (EPDS), at initial prenatal visits. Timeframe of project began Spring enrollment and will continue until student graduation in August 2023.

We are excited to support her as she works toward improving patient care delivery in our facility.

Please let me know if I can assist in any way.

Sincerely,

Dr. Teresa Byrd,

Appendix G

Stakeholder Organizational IRB Approval

DATE: November 4, 2022

TO: Michele Fuller

FROM: XXXX IRB

PROJECT TITLE: [1973753-1] Implementation of a Perinatal Depression Screening Protocol New Project

SUBMISSION TYPE:

ACTION: DETERMINATION OF QUALITY IMPROVEMENT

DECISION DATE: November 4, 2022

EXPIRATION DATE: --

REVIEW TYPE: Administrative Review

REVIEW CATEGORY: QUALITY IMPROVEMENT

Your proposed activity appears to fall within the parameters of a Quality Improvement project. This confirmation is contingent upon your adherence to the exact procedures described in the final version of the documents that have been submitted as of this date.

If you need to make any changes to the project procedures, you must resubmit your project for review and approval prior to implementing the changes. If changes are being considered and there are questions about whether IRB review is needed, please contact the Human Research Protections Program to discuss these changes. You may be asked to submit a new online request to conduct research.

This determination does not constitute nor guarantee institutional approval and/or support. Investigators and study team members must comply with all applicable federal, state, and local laws, as well as Wellstar policies and procedures, which may include obtaining approval for your research activities from other individuals or entities.

For questions, you may contact the Human Research Protections Program a

Sincerely,

Human Protections Administrator

Appendix H

Stakeholder IRB Amendment

Stakeholder Organizational Amendment/Modification to IRB proposal

DATE: March 20, 2023

TO: Michele Fuller

FROM: XXXXXX IRB

PROJECT TITLE: Implementation of a Perinatal Depression Screening Protocol

SUBMISSION TYPE: 1973753-2] Implementation of a Perinatal Depression Screening Protocol Amendment/Modification

ACTION: DETERMINATION OF QUALITY IMPROVEMENT

DECISION DATE: March 20, 2023

REVIEW TYPE: Administrative Review

QUALITY IMPROVEMENT

Your proposed activity appears to fall within the parameters of a Quality Improvement project. This confirmation is contingent upon your adherence to the exact procedures described in the final version of the documents that have been submitted as of this date.

If you need to make any changes to the project procedures, you must resubmit your project for review and approval prior to implementing the changes. If changes are being considered and there are questions about whether IRB review is needed, please contact the Human Research Protections Program to discuss these changes. You may be asked to submit a new online request to conduct research.

This determination does not constitute nor guarantee institutional approval and/or support. Investigators and study team members must comply with all applicable federal, state, and local laws, as well as policies and procedures, which may include obtaining approval for your research activities from other individuals or entities.

For questions, you may contact the Human Research Protections Program

Sincerely,

Human Protections Administrator

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained

Appendix I

Institutional Internal Review Board Approval

JSU | INSTITUTIONAL REVIEW BOARD
JACKSONVILLE STATE UNIVERSITY

Institutional Review Board for the Protection of Human Subjects in Research
249 Angle Hall
700 Pelham Road North
Jacksonville, AL 36265-1602

December 13, 2022

Donna Fuller
700 Pelham Rd. North
Jacksonville, AL 36265

Dear Donna:

Your project "Implementation of a Perinatal Depression Screening Protocol" 12132022 has been granted exemption by the JSU Institutional Review Board for the Protection of Human Subjects in Research (IRB). If your research deviates from that listed in the protocol, please notify me immediately. One year from the date of this approval letter, please send me a progress report of your research project.

Best wishes for a successful research project.

Sincerely,

Lynn Garner
Associate Human Protections Administrator, Institutional Review Board

Appendix J

Institutional IRB Amendment

JSU IRB Amendment/Modification E-Mail Confirmation

Institutional IRB Amendment/Modification Approval
Institutional Review Board
To:
Donna Fuller
Cc:
- Sarah Donley;
- DeLane Hodge

Mon 3/13/2023 9:07 AM

Good afternoon,

The update to your project has been approved.

Thank you, have a great day,
DeLane Hodge

From: Donna Fuller <dfuller3@stu.jsu.edu>
Sent: Tuesday, February 28, 2023 1:53 PM
To: Institutional Review Board <irb@jsu.edu>
Subject: Perinatal Depression Screening DNP project 12132022

To Whom it may concern:

Please add the following participants to the above project:

1. Dr. Falynn Turley MSN, Ph.D. Associate Professor of Statistics Jacksonville State University - Statistician
2. Sonny Harding Masters of English Education - Editor

Sincerely,

Donna Michele Fuller, MSN, APRN, RNc-OB, FNP-C, FNP-BC

Appendix K

Budget and Resources

Perinatal Mental Health the Edinburgh Postpartum Depression Scale (EPDS) Manual 2nd edition by John Cox, Jeni Holden, and Carol Henshaw	**25.00**
Cambridge Core Copyright Permission for text/book use of EPDS.	**76.35**
Printing Costs: Educational Brochures and EPDS	**56.00**
Office Supplies:	**29.65**
Education Session attendance appreciation tokens:	**200.00**
	390.00

Resources were from personal finances.

Appendix L

CITI Certificate

CITI PROGRAM

Completion Date 17-Aug-2022
Expiration Date 16-Aug-2025
Record ID 50680055

This is to certify that:

Donna Michele Fuller

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Social and Behavioral Responsible Conduct of Research
(Curriculum Group)
Social and Behavioral Responsible Conduct of Research
(Course Learner Group)
1 - RCR
(Stage)

Under requirements set by:

Jacksonville State University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w75a16296-ee64-44ef-9faf-dfa5728f0e8b-50680055

Appendix M

Doctor of Nursing (DNP) PD Screening Project SWOT Analysis

Strengths	Weaknesses
1) The organization involved with the Doctor of Nursing Practice (DNP) Perinatal Depression (PD) Screening Project is an established teaching residency OB/GYN office. familiar with completing educational projects. 2) There is a strong working relationship between the primary investigator and the attendings/residents that will be involved in the project. 3) The organization is currently in a building phase and is providing data to the parent organization related to both Quality Improvement and Evidence-Based Practice. 4) The project preceptor is an accomplished researcher and publisher. The buy-in of stakeholders needed to complete the project is positive	1) The residents involved in the DNP, PD project work in the office on a rotating schedule. (Different residents each day). 2) The project preceptor is involved in hospital education and is not in the office daily. 3) There is no working relationship with the intake nurses that will be involved with the project implementation. There is a need for education as to project rationale and implementation. 4) The organization's patient population is very diverse, with multiple languages spoken. 5) High-volume office with a limited number of intake nurses creating possible workflow issues.
Opportunities	**Threats**
1) Establishing relationships with each OB/GYN resident to facilitate communication regarding positive screenings. 2) Establishing communication via text, EMAIL, and TEAMS with the project preceptor to discuss implementation challenges and results. 3) Establishing relationships with each intake nurse to facilitate the collection of completed proper PD screening forms. Creating education sessions to discuss PD and the rationale and importance of screening. 4) Familiarization with MARTI, the organization's interpretation source. 5) Creating a workflow diagram for screening implementation.	1) Inability to obtain the consent required from all. 2) participants including staff and patients. 3) Many no-show appointments for initial prenatal visits. 4) Family involvement due to culture and language barriers in the screening process effect on creating inaccuracies during screening. 5) Poor attendance to intake nurse and OB/GYN resident and attending staff education sessions. Workflow challenges due to office volume.