A Needs Assessment for the Enhancement of Postpartum Depression Screening at a Primary Care Clinic in the Southwest

A NEEDS ASSESSMENT FOR THE ENHANCEMENT OF POSTPARTUM DEPRESSION SCREENING AT A PRIMARY CARE CLINIC IN THE SOUTHWEST

By

Rosanna Sanchez Lujan

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DEDICATION

This manuscript is dedicated to my family, husband, and to all postpartum women.

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ABSTRACT

Background: Despite postpartum depression (PPD) being the most common medical complication surrounding childbirth affecting 10-20% of new mothers, it is often underdiagnosed and undertreated, especially in primary care. Universal screening with a validated tool is recommended for all postpartum women as evidence shows that formal screening is superior to non-formal screening in detecting women with PPD. Unfortunately, most primary care providers do not formally screen. In southern Maricopa, low income minority women were found to have a higher than average prevalence of PPD. Thus, it is important for providers in this area to screen.

Purpose: The purpose of this quality improvement project was to determine provider knowledge, practice behaviors, and perceived facilitators and barriers to PPD screening at an urban Federally Qualified Health Center in the Southwestern United States. This needs assessment was then used to make site-specific recommendations for PPD screening to enhance early identification of women with PPD.

Design: A quality improvement project using a quantitative descriptive design. A quantitative survey assessed provider knowledge, practice behaviors, perceived barriers, and perceived facilitators regarding PPD screening.

Setting: Wesley Health Center, a primary care clinic in Phoenix, Arizona.

Participants: Five primary care providers in family practice.

Results: Universal screening with validated screening tools was common. More than half of providers (60%) universally screen all postpartum women for depression with a formal screening tool up to one year postpartum. Providers were correctly using validated screening tools for PPD such as the Patient Health Questionnaire-2 (PHQ-2), PHQ-9 and Edinburgh Postnatal Depression

Scale (EPDS), but only one provider (20%) was aware that the PHQ-2 and PHQ-9 are validated for that specific purpose. Wesley is already attempting to universally screen for depression with a two-step process using the PHQ-2 and PHQ-9 for all patients, but participants report that support staff sometimes forget to provide patients with the screening tool before the provider visit, patients sometimes decline to be screened, and providers either forget to catch the opportunity or do not have time. Identified facilitators to screening are support staff (80%) and the electronic health record (20%).

Conclusion: One major strength of the clinic is that it already has a policy of universally screening for depression that is validated for use for PPD. The findings from the study indicate that this policy is not always followed due to barriers such as lack of time, support staff not providing screening tools before the provider encounter with the patient, and providers forgetting to screen. The screening process could be enhanced by taking the time to ensure that tools are readily accessible, gathering the input from support staff on the barriers they face to screening patients, and utilizing the electronic health record to make the process more automated. Enhancing the policy already in place would be enhancing screening practices for PPD and improve early detection of this condition. Findings will be disseminated via an executive summary and PowerPoint presentation to the staff.

INTRODUCTION

Postpartum depression (PPD) is the most common medical complication surrounding childbirth, impacting 10-20% of women (National Institute for Health Care Management [NIHCM], 2010; Wisner, Logsdon, & Shanahan, 2008). Despite its prevalence, PPD is often underdiagnosed and undertreated, especially in primary care (Yawn et al., 2012). The American Academy of Pediatrics (AAP) refers to it as "the most underdiagnosed obstetric complication in America" (Earls, 2010, p. 1032). Routine screening with validated screening tools has been proven to increase rates of detection and treatment for postpartum women suffering with depression (Yawn et al., 2012). This is vital in areas where there is a high prevalence of PPD, such as areas with low socioeconomic status minority women (Gress-Smith, Leucken, Lemery-Chalfant, & Howe, 2012). This project describes a needs assessment conducted at a primary care clinic in South Phoenix that serves high-risk women, to determine ways to enhance postpartum depression screening practices. This needs assessment allowed for the development of site-specific recommendations tailored to the unique needs of the clinic.

Background Knowledge

Women with PPD often experience sadness, guilt, worthlessness, poor concentration, insomnia, fatigue, anxiety, lack of pleasure in activities, poor attachment to their infant, difficulty caring for their baby, or thoughts of suicide or death (NIHCM, 2010). This has grave impacts on the family unit, including delayed psychological and motor development of the infant, long-term behavioral problems for the child such as poor school performance, chronic mental health problems for the mother, and dysfunctional relationships (Carroll, Biondich, Anand, Dugan, & Downs, 2013; Gjerdingen & Yawn, 2007). PPD can also contribute to unsafe sleep practices for

the infant, decreased use of safety devices (e.g., car seats and plug protectors), and missed well-child appointments (Carroll at el., 2013).

Definition and Risk Factors

PPD is a mood disorder that is distinguished apart from the commonly occurring "baby blues" that occurs in up to 80 percent of postpartum women; baby blues only last up to two weeks after the baby is born (NIHCM, 2010, p. 3). If symptoms persist after two weeks, women are said to have PPD. Although the baby blues has similar symptoms to PPD, no treatment is required as it resolves on its own after peaking in the first week after delivery (Robertson, Celasun, & Stewart, 2003). PPD, on the other hand, can last months or longer and usually requires treatment (Robertson et al., 2003). Although other less common perinatal mood disorders exist, they are beyond the scope of this project and will not be discussed. In addition, although PPD can occur in men, this project will focus on PPD in women.

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) does not recognize PPD as its own diagnosis, but defines it as an episode of major depression with a peripartum onset (occurring during pregnancy or within four weeks of delivery) (Segre & Davis, 2013). Thus, a woman must meet the criteria for major depressive disorder. This means she must have at least five out of nine symptoms of depression for at least two successive weeks, the symptoms must cause clinically significant impairment in her functioning, and the symptoms cannot be caused by other medical conditions (see Table 1) (American Psychiatric Association [APA], 2013).

TABLE 1. *Diagnostic Criteria for Major Depressive Disorder*

1	At least 5 of the following symptoms have been present for at least 2 weeks and cause a change from previous functioning; symptom 1 or 2 must be present. 1. Depressed mood most of the day, almost every day, as indicated by either subjective report or observation made by others (**Note:** In children and adolescents, this can manifest as an irritable mood.) 2. Severely diminished lack of interest or pleasure in all, or almost all, activities most of the day, almost every day (as indicated by either subjective account or observation). 3. Significant weight loss when not dieting or weight gain (a change of more than 5% of body weight in 1 month), or decrease or increase in appetite most days. (**Note:** In children, can manifest as failure to make expected weight gain.) 4. Insomnia or hypersomnia most days. 5. Physically irritable or moving too slowly nearly every day (observable by others, not merely subjective feelings of restlessness or being slow). 6. Fatigue or loss of energy most days. 7. Feeling worthless or extreme or irrational guilt most days. 8. Poor concentration, or indecisiveness, most days. 9. Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation with or without a plan.
2	The symptoms cause clinically significant distress or impairment in functioning.
3	The symptoms are not attributable to the effects of a substance or another medical condition

Note: Criteria 1-3 must be met to diagnose a major depressive episode. Table adapted from American Psychiatric Association (2013).

Workgroups responsible for releasing the DSM-5 state a lack of epidemiological evidence to declare PPD as a unique type of depression that occurs more often than at other times in a woman's life (Segre & Davis, 2013). The DSM-5 definition of peripartum onset being within four weeks of delivery is limiting as it excludes those cases of depression that begin after four weeks postpartum. Research studies often define PPD as having an onset anywhere between 3-12 months after delivery (Robertson et al., 2003). Furthermore, many women often do not report they are experiencing depression early on due to stigma, lack of awareness, or barriers to care (NIHCM, 2010). Without a consistent definition and underreporting, prevalence and incidence rates are difficult to pinpoint. What has been well-established is that women experience depression most often in their reproductive years, and it is estimated that one in five women in the United States will experience an episode at some point in their lives (NIHCM, 2010). Regardless of the definition, for a woman to experience depression while caring for an

infant is critical—she must not only struggle to take care of herself, but a baby who is completely dependent on their caregiver. Due to high rates of depression in women and the adverse outcomes associated with PPD, it is a major public health concern (Wisner et al., 2008).

There are several high-risk groups that have been found to have higher rates of maternal depression who should be carefully monitored by health care providers. This includes women who have a history of mental health disorders, women who have had depression with prior pregnancies, women with a family history of depression, women with limited social support, women who had an unplanned pregnancy, and low-income women (NIHCM, 2010). Rates vary among Latina women, but low-income Latina women are found to consistently have high prevalence rates (NIHCM, 2010). Data from the Pregnancy Risk Assessment Monitoring System (PRAMS) survey from the Centers for Disease Control found significant association between minority race and PPD in 13 out of 16 US states which collected ethnicity data (NIHCM, 2010).

Identifying and Treating Postpartum Depression

Early identification and treatment of PPD is critical to improve maternal and infant outcomes. If PPD goes untreated, it is likely to persist for months to years (Wisner et al., 2008). The primary contributing factor to the length of the depressive episode is a delay in receiving treatment (Wisner et al., 2008). PPD is a highly treatable condition, but is often undetected and undertreated, especially in primary care sites relying on usual care (Sockol, Epperson, & Barber, 2011; Yawn et al., 2012). Studies comparing usual care with intervention groups regarding PPD find a significant difference in detection and treatment rates (Fergerson, Jamieson, & Lindsay, 2002; Goodman & Tyer-Viola, 2010; Leung et al., 2010). Sites with low detection and treatment rates often have no systematic or formal way to screen for and follow-up with PPD. For example,

a large-scale study including 28 family practices across 21 American states found that a formal PPD screening and follow-up program as compared to usual care resulted in higher rates of women receiving a diagnosis of PPD (P = .0006) and receiving therapy (P = .002) (Yawn et al., 2012). The study went a step further and found that maternal depressive symptoms in the intervention group were lower at 6 months (P = .07) and 12 months (P = .001) postpartum as compared to usual care (Yawn et al., 2012). With proven early detection and positive outcomes from universal screening programs, it is vital for health care providers to incorporate systematic PPD screening into their practice.

Evidence-Based Recommendations for Screening in Primary Care

There are several recommendations to guide screening for PPD in the primary care setting. Regarding how to screen, the National Guideline Clearinghouse clinical practice guidelines strongly recommends screening all adults with a standardized screening tool (Trangle et al., 2016). This has a low quality of evidence with a strong recommendation which indicates that benefits of the action (timely identification of PPD) outweigh the harms (screening those without PPD), but there is a chance of the recommendation changing when higher quality evidence becomes available (Trangle et al., 2016). There are several depression screening tools, but the U.S. Preventive Services Task Force (USPSTF) (2016) recognizes the Edinburgh Postnatal Depression Scale (EPDS) as a common and validated screening tool for pregnant and postpartum women. The guideline also recognized other common screening tools for adults such as the Patient Health Questionnaire-2 (PHQ-2) and PHQ-9 (USPSTF, 2016). The American College of Obstetricians and Gynecologists (ACOG) (2015) recommends using a standardized validated screening tool and notes that the EPDS is more specific than other tools for perinatal

depression since it includes anxiety symptoms common with PPD and excludes constitutional symptoms common in pregnancy (e.g., changes in sleeping patterns) that other tools such as the PHQ-9, the Beck Depression Inventory, and the Center for Epidemiologic Studies Depression Scale include. (ACOG, 2015). ACOG (2015) also notes that the EPDS and PHQ-9 are the shortest screening tools; other validated tools have at least 20 questions and take more time to complete. Additional guidelines such as the Michigan Quality Improvement Consortium Guideline recommends using the Edinburgh Postnatal Depression Scale (2016).

Regarding who to screen, the USPSTF (2016) recommends screening all pregnant and postpartum women. This has a B graded recommendation which indicates a high certainty that the net benefit is moderate or there is moderate certainty of the net benefit being moderate or higher; with this grade, universal screening is suggested for practice (USPSTF, 2016). The recommendation notes that screening should be conducted where here are "systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up" (USPSTF, 2016, para. 2). ACOG (2015) recommends screening all women at least once during pregnancy or in the first year postpartum, but if there are risk factors such as a history of depression or anxiety then closer monitoring is warranted.

Guidelines on when to screen for PPD indicate that optimal screening times include the first prenatal visit, postpartum visits within three to eight weeks after delivery and future postpartum visits if symptoms or signs raise concern (Michigan Quality Improvement Consortium Guideline, 2016). The AAP recommends incorporating maternal depression screening into well-child visits at peak times postpartum depression occurs, including the 1, 2, 4,

and 6-month well-child visits (AAP, 2017; Earls, 2010). Well-child visits in the first year of life are also identified as opportune times to screen mothers (Gjerdingen & Yawn, 2007).

Local Problem

In Arizona's Maricopa county, there is a significantly higher prevalence of PPD compared to the national average of 11-12% (Centers for Disease Control, 2013). The population consists of 59% White, 30% Hispanic, 5% African American, and 5% other ethnicities (Schumacher et al., 2012). In addition, 17.4% of Maricopa county lives below the federal poverty level of $22,350 for a family of four (Schumacher et al., 2012). In the city of Phoenix, poverty rates are higher with 22.9% living below the federal poverty level (Schumacher et al., 2012). Since high risk groups for PPD include inner-city and low-income Hispanic women, this population likely has higher than average prevalence of PPD (NIHCM, 2010; Wisner et al., 2008). A longitudinal study conducted in South Phoenix among low-income women confirms this suspicion; Gress-Smith et al. (2012) sought to determine the prevalence of PPD and its impact on the health of infants among low-income women and found clinically significant levels of PPD "in 33% of the women at five months postpartum and 38% at nine months postpartum" (Gress-Smith et al., 2012, p. 887). In addition, higher depressive symptoms were associated with poor weight gain in infants ($P = .002$), more infant health concerns such as ear infections and colds ($P = .05$), and poor infant sleep ($P = .001$) (Gress-Smith et al., 2012). Due to the demographics and shocking levels of PPD in Southern Maricopa County, this study will focus on enhancing PPD screening at an urban Federally Qualified Health Center in South Phoenix providing primary care to the medically underserved.

Purpose

The purpose of this quality improvement project was to determine provider knowledge, practice behaviors, and perceived facilitators and barriers to PPD screening at an urban Federally Qualified Health Center in Phoenix, Arizona. This needs assessment was then used to make site-specific recommendations for PPD screening to enhance early identification of women with PPD.

Study Question

What PPD screening knowledge, practice patterns, and facilitators and barriers exist among providers at an urban Federally Qualified Health Center in Phoenix, Arizona?

FRAMEWORK & SYNTHESIS OF EVIDENCE

Theoretical Framework

The transtheoretical model (TTM) of change, also known as the stage model, will guide this DNP project. This change theory helps to analyze individuals' and organizations' readiness to change (Levesque et al., 2001). This, in turn, is used to guide interventions that are more likely to be successful (Levesque et al., 2001). With the purpose of this DNP project being to determine the current knowledge, practice behaviors, and facilitators/barriers to PPD screening at a local site, the TTM will be used to conceptualize provider's current behavior as well as their intentions towards changing screening practices. Armed with this information, any site-specific recommendations will be better suited for success.

The TTM includes four principles of change: stages of change, processes of change, self-efficacy, and decisional balance (Levesque et al., 2001). The first principle of the TTM states that people develop through six stages of change and usually start at precontemplation where

they have no intent to change in the next six months either because they do not perceive a problem, or they are demoralized (Levesque et al., 2001). They then move to contemplation where they consider changing behavior within the next six months, but they are still uncertain due to perceived barriers (Levesque et al., 2001). The next stage is preparation where individuals are preparing to change in the next 30 days and may be taking small steps to start (Levesque et al., 2001). The fourth stage is action where individuals are actively modifying their behavior, and the fifth stage is maintenance where individuals have maintained their new behavior for at least six months (Levesque et al., 2001). At each successive stage, the level of motivation to change increases and the pros of changing are perceived as outweighing the cons (Levesque et al., 2001). It is important to note that people do not always go through the process linearly, but instead have relapses to earlier stages (see Figure 1) (Levesque et al., 2001).

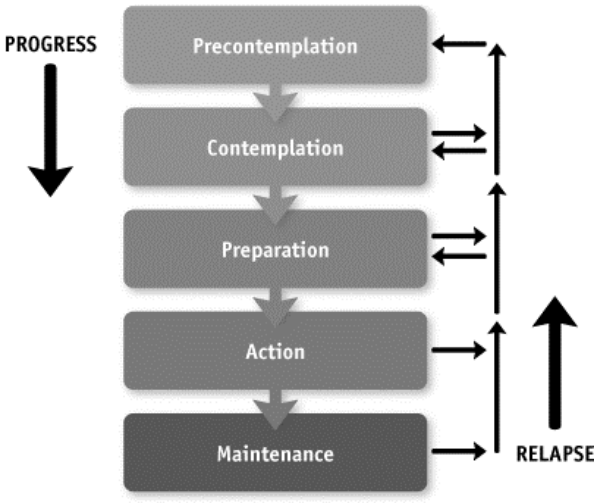

FIGURE 1. The Transtheoretical Model of Change. Derived from Boundless (2016).

The theory also describes 10 processes that influence progression through the stages. These are consciousness raising (being aware of the pros of change), dramatic relief (experiencing the negative and positive emotions of change), environmental reevaluation (evaluating how change will benefit one's environment), self-reevaluation (considering how the change will benefit oneself), social liberation (organizational support), self-liberation (confidence in one's ability to change), reinforcement management (rewarding new behaviors), counterconditioning (replacing old habits with new ones), helping relationships (social support), and stimulus control (changing environmental factors to encourage change) (Levesque et al., 2001). The self-efficacy principle of the TTM is simply the confidence and belief in one's ability to maintain change when difficulties arise (Levesque et al., 2001). The last principle of the TTM is decisional balance which is the concept that individuals weight the pros and cons of change as they progress through the different stages (Hoy, Natarajan, & Petra, 2016).

Assessing what stage individuals reside in and tailoring interventions to promote progression to the next stage is termed stage-matched interventions; using this strategy dramatically increases chances for successful adoption of interventions (Levesque et al., 2001). For example, researchers used the TTM to improve breast cancer screening rates by providing stage-matched educational materials; women who received stage-matched educational materials tailored to their readiness to change had higher screening rates compared to women given standard education materials and no material (n=1397) (Rakowski et al., 1998).

Because stage-matched interventions increase likelihood of success, providers' readiness to screen for PPD will be assessed for this DNP project during data collection before site-specific recommendations are made (see Table 2).

TABLE 2. *Using the Transtheoretical Model to Assess Readiness to Screen for PPD*

Stage of Adoption	Criteria for Definition
1. Precontemplation	Does not plan to universally screen postpartum women in the next 6 months.
2. Contemplation	Is thinking of starting to universally screen postpartum women in the next 6 months.
3. Preparation	Plans to start screening all postpartum women in the next 30 days.
4. Action	Is screening all postpartum women.
5. Maintenance	Has universally screening all postpartum women for the last 6 months.

Concepts

Concepts relating to this DNP project must be defined for consistency. First, *postpartum* will be used to refer to the time period from birth through the first year post-delivery. This is consistent with definitions in research literature regarding PPD. *Postpartum depression* (PPD) will be used to refer to depression that occurs during the postpartum time period (birth up to one year). Lastly, *primary care provider* will be used to refer to a practitioner that provides primary care services such as family practice doctors, family/adult/pediatric nurse practitioners, physician's assistants, obstetricians, and pediatricians.

Synthesis of Evidence

With the purpose of the study being to determine the knowledge, practice behaviors, and facilitators/barriers to postpartum depression (PPD) screening among the primary care providers at an urban Federally Qualified Health Center in Phoenix, Arizona to make site specific recommendations, it is vital to first evaluate the state of evidence on PPD screening in primary care, including tools and barriers. Doing so will guide the needs assessment questionnaire items.

A literature search was conducted in PubMed using the following MeSH terms: "Depression, Postpartum" and "Mass Screening" and "Primary Health Care" as well as

"Depression, Postpartum" and "Mass Screening" and "Randomized Controlled Trial [Publication Type]". Inclusion criteria included: English language, Human study, and Published in last 10 years. Results that were not primary research or closely related to postpartum depression screening in primary care were excluded from analysis, which revealed eight results. A search on PubMed without MeSH terms using "postpartum depression screening and family nurse practitioners" and "postpartum depression screening barriers in primary care" with the same inclusion criteria resulted in two more primary research studies relevant to this study's purpose. A total of ten articles related to the project's purpose were analyzed (see Appendix A).

Most studies were descriptive in nature as compared to randomized controlled trials; two articles were randomized controlled trials, four were cross-sectional, three were longitudinal descriptive studies, and one was a mixed-methods (feasibility study with a longitudinal descriptive component). The concept of postpartum depression screening was consistent throughout the studies, but this was related to several other concepts such as the frequency of screening in primary care, attitudes among primary care providers, the feasibility of universal screening in practice, the prevalence of PPD in primary care settings, and the screening tools employed in primary care.

The frequency of screening in primary care was evaluated by Goldsmith (2007) which found that 42% of 432 family nurse practitioners reported never screening for PPD in any way, 41.3 % use a screening tool, and 16.7% screen without a tool. Likewise, Leiferman, Dauber, Heisler, and Paulson (2008) found that 40% of 232 obstetricians, pediatricians, and primary care physicians self-reported that they rarely or never assess for PPD. Another study looking at PPD screening at well-child visits revealed that only 1.7% of 503 infant medical records indicated

using the Edinburgh Postnatal Depression Scale (EPDS) among mothers (Figueroa-Leigh, F., Rojas, P., & Castanon, 2015). These studies support the notion that PPD screening among a variety of primary care providers is not routinely performed, especially with a validated screening tool.

Leiferman et al. (2008) also evaluated provider attitudes and beliefs towards screening for PPD. Most primary care providers (90%) felt responsible for detecting PPD with obstetricians and primary care physicians feeling the most responsible and confident in their ability to detect and treat PPD (as compared to pediatricians). Most providers perceived the main barriers to screening as being lack of time (78%), patient barriers such as unwillingness to talk (30%), and a deficit in knowledge or skill in screening for and managing PPD (24%). These attitudes can shed light on possible interventions to improve PPD screening. However, one limitation to the Leiferman et al. (2008) study is that it was conducted in one geographical location in southeastern Virginia serving a high military population, which may not represent the beliefs of providers in other areas serving different populations.

Regarding the feasibility of universal screening, Yawn et al. (2012) and Sheeder, Kabir, and Stafford (2009) both directly utilized universal screening successfully and advocate for its usability. Yawn et al. (2012) conducted research across 28 family practice clinics across 21 US states in mothers with infants 0-12 months and Sheeder et al. (2009) tested universal screening at well-child visits for infants 0-6 months. Providers universally screened postpartum women and successfully followed-up with most positive cases. Furthermore, the studies complement each other in that Yawn et al. (2012) was conducted only among mothers over 18 years old and Sheeder et al. (2009) conducted its study on adolescents 12-21 years old. The large sample sizes

and complementary study populations are a major strength. However, one weakness to the study among adolescents is that electronic reminders were utilized, which may not be built into other electronic health records to aid feasibility (Sheeder et al., 2009).

Another important concept among the studies is the prevalence of PPD among patients seeking care in primary care settings. Lobato, Moraes, Dias, and Reichenheim (2011) looked at the prevalence of PPD in several primary care sites and found 24.3% with depressive symptoms (determined by a positive EPDS score) with a peak of symptoms around 3 months postpartum (37.5% of positive scores). Furthermore, women with the following characteristics were found to have higher depressive scores: low education, under the age of 20 years, single status, and low socioeconomic status (Lobato et al., 2011). This study sheds light on how common PPD is, especially among young women with a low socioeconomic status and low support/resources. Interestingly, the peak of PPD symptoms in this study revealed a benefit of screening beyond the first 2-6 weeks postpartum. Despite a large sample size (n=811) among five primary care sites, one limitation is that the study was conducted in Rio de Janeiro, which may not be representative of certain groups in the US. It may be more applicable to similar populations in the US such as Maricopa County's Wesley Health Center with mostly low socioeconomic status minorities. Sheeder et al. (2009) also evaluated the prevalence of PPD as a secondary outcome for its sample. Using the EPDS, investigators found maternal depressive symptoms in 20.1% of 199 women who were 0-6 months postpartum (Sheeder et al., 2009). Prevalence was highest at 6 months postpartum. Supporting this concept, Yawn, Bertram, Kurland, and Wollan (2015) found that at 6 months postpartum, 10.9% of 1,235 women who initially screened negative for PPD around 4-12 weeks postpartum now screened positive for PPD (using the PHQ-9 tool). At 12

months postpartum, 6.1% of 969 women who screened negative at baseline ant 6 months now screened positive (Yawn et al., 2015). These studies strongly support the notion of how common PPD is and that prevalence is still high throughout the first postpartum year.

Two studies shed light on the screening tools for PPD. Gjerdingen, Crow, McGovern, Miner, and Center (2009) validated a two-question tool and the PHQ-9 as effective at identifying PPD. A two-stage screening process appears effective in primary care practice: a 2-question screen is performed first followed by the PHQ-9 for any positive screens (Gjerdingen et al., 2009). Hanusa, Scholle, Haskett, Spadaro, and Wisner et al. (2008) compared three screening tools and found the EPDS to be superior to the PHQ-9 for PPD. However, the sample size was small and pulled from a group of women enrolled a one insurance policy, which may limit the generalizability of the study.

Lastly, two studies examined automated/electronic reminders in promoting universal screening, and they were found to successfully promote screening completion and follow-up (Carroll et al., 2013; Sheeder et al. 2009).

In all, the evidence regarding PPD screening consistently shows that PPD is prevalent, but is often not screened for. Although many providers feel they are responsible for detecting PPD and universal screening has been demonstrated to be feasibly implemented in primary care, many providers feel lack of time and lack of knowledge are large barriers to screening. There are several validated screening tools that are superior to detecting PPD compared to using no tools and electronic reminders can be used to aid screening implementation.

Given the evidence, only two recent studies in the US—the randomized controlled trials conducted by Yawn et al. (2012) and Carrol et al. (2013)—directly compare usual care detection

rates of PPD and universal screening detection rates to show screening is superior. Further research such as this conducted in primary care and can further support the notion that not screening results in many missed opportunities to detect and treat women with PPD.

With low screening rates commonly found among primary care providers and certain vulnerable groups (e.g., low income minority women) commonly having higher PPD rates, the question then remains as to what PPD screening practice behaviors and barriers (if any) exist at Wesley Health Center in Phoenix, Arizona that serves vulnerable populations.

METHODS

Design

This study is a quality improvement project using a quantitative descriptive design. It is a needs assessment of a health clinic to determine site-specific recommendations to enhance screening and early detection of women with PPD. A quantitative survey assessed provider knowledge, practice behaviors, perceived barriers, and perceived facilitators regarding PPD screening at an urban Federally Qualified Health Center in Phoenix, Arizona.

Setting

The needs assessment was performed at Wesley Health Center in Phoenix, Arizona. This is a Federally Qualified Health Center that provides family services to all ages and attends to many medically underserved uninsured minorities (Wesley Community, 2016b). Primary care services include routine wellness exams, chronic disease management, gynecological and obstetric services, family planning, laboratory services, health education, and counseling/mental health services (Wesley Community, 2016c). There are two locations in south Phoenix, both of which were included in the study. Wesley Health Center was selected due to the high prevalence

of PPD among low-income minority women in South Phoenix, a population this clinic largely serves (Gress-Smith et al., 2012).

Participants

Inclusion criteria for this study were: (1) must be a primary health care provider at Wesley Health Center, and (2) provide care to postpartum women. All health care providers at Wesley Health Center, which includes family practice doctors, nurse practitioners, and a part-time physician's assistant, met these criteria (Wesley Community, 2016a). There was one exclusion criterion: any provider who was part of the DNP project committee would not be invited to participate to avoid bias in data collection. One provider at the clinic site met this exclusion criterion so was not invited to take the survey. All other providers were invited to participate. There are approximately 10 providers at Wesley Health Center and the target sample was 50%.

Data Collection

Survey Tool

The tool was an online quantitative survey that assessed four key areas regarding PPD screening among providers: provider knowledge, provider practice patterns, perceived facilitators to screening, and perceived barriers to screening. It also collected basic sociodemographic information from providers taking care to avoid identifiable data. Survey questions were structured to collect quantitative data with categorical answers or simple free-text answers. The survey included 23 questions and took approximately five to ten minutes to complete; refer to Appendix B for survey tool. It was developed with expert review by two clinicians with expertise in caring for postpartum women in primary care. It was made available

online via Qualtrics survey software. Paper copies of the survey tool were also made available in the event a provider was not able to access the survey online.

Procedures

Before collection of data, clinical site permission and University of Arizona institutional review board (IRB) review was obtained. Data was collected during a monthly medical staff meeting where almost half of the providers attended with their work laptops. The Principal Investigator discussed the purpose of the project and reviewed the disclosure, including voluntary participation, risks, and benefits. After answering questions, the Investigator then left the room. The Chief Medical Officer's designee then circulated an email from the Investigator to all providers (including those not at the meeting) which contained a disclosure form (Appendix C) and a direct link to the survey. The disclosure form discussed an overview of the project, risks, benefits, the voluntary nature of the study and statement that the participant can withdraw at any time. The disclosure form stated that by filling out the survey the provider was consenting to participate. Providers were given time during the staff meeting to complete the survey. Participants could access the survey link and complete the survey over a 1-week period to provide time to those who did not attend the staff meeting. In the event a participant was not able to access the survey online, there were printouts of the same disclosure form as well as printouts of the survey at the meeting to fill out and leave in an envelope to allow for anonymous collection at the end of the staff meeting by the Principal Investigator. No identifiable information was collected. Providers who declined to participate at the meeting continued routine work on their laptops during the meeting time.

Data Analysis

Data from Qualtrics was exported to Excel for analysis. Data from one paper survey was entered into Excel prior to analysis. Descriptive statistical analyses were performed on sociodemographic, provider knowledge, provider practice patterns, perceived barriers to PPD screening, and perceived facilitators to screening. Short answer comments were summarized.

Ethical Considerations

To hold to the ethical principle of respect for persons, this study aimed to maximize privacy and autonomy (Office for Human Research Protections, 1979). To ensure privacy of providers, the medical director's designee was selected to send the survey to providers so that email addresses from the providers were not collected from the Principle Investigator. The paper response was kept confidential; it was not seen by the medical director as she was absent during the staff meeting, it was placed in a secured folder, and the identity of the participant filling out the paper survey was kept confidential from the Principal Investigator who was not present while the survey was filled out. In addition, only aggregate/summary findings from the study were disseminated (no detailed responses) which further protected privacy. To maximize autonomy, a disclosure form was integrated into the study: before the link to the survey, clear information was outlined including the project's aims, risks, benefits, and a statement that the study was voluntary, and the provider could withdraw at any time. This same form was provided as a paper copy attached to all paper surveys.

The study held to the ethical principle of beneficence by maximizing benefits and minimizing risks (Office for Human Research Protections, 1979). With the project being an anonymous survey, harm to the participating providers is minimized. Furthermore, only

summary findings were shared to eliminate the risk of individual providers being targeted for reprimand by the director or damaging reputations. The benefits of the study were to inform site-specific recommendations to enhance postpartum depression screening.

Finally, to adhere to the ethical principle of justice, the study maximized fairness. The study inclusion criteria did not discriminate against title; the study was open to all clinic providers not on the DNP project committee, including nurse practitioners, medical doctors, and any physician assistants. The findings were shared among all providers so they all could directly benefit from the project by learning what the site currently practices and they could compare their practices with what is recommended.

By ensuring the privacy of providers, maximizing their autonomy, minimizing risks, and keeping the study fair, the project adhered to major ethical principles of research. Prior to implementation, site approval and IRB review were obtained.

RESULTS

Description of the Sample

The survey was distributed to nine health care providers at Wesley Health Center. A total of four were completed online via Qualtrics and one was completed via paper survey for a total of five responses which met the target sample of 50%. Two medical doctors responded and three family nurse practitioners. All providers had been in practice for less than 4 years. All participants reported seeing an average of one to five postpartum women per month.

Findings Related to the Study Question

Knowledge Assessment Results

Regarding the estimated prevalence of PPD in the United States, no participant underestimated. All five participants reported the prevalence to be within 10-20%. All participants knew the potential complications of PPD; all listed options were potential complications and four of the five providers marked 100% of the options. Only one provider did not identify poor school performance of child with a mother who had PPD. All participants identified 100% of the risk factors for PPD listed (e.g., depression during pregnancy and low social support). All five participants (100%) knew that the EPDS was the most sensitive tool to detect PPD and all five (100%) correctly identified that all postpartum women should be screened per recommended guidelines.

The responses surrounding validated screening tools to use for depression in the postpartum period, the best time to screen for depression in the perinatal period, and the peak of PPD was more generally distributed (Table 3).

TABLE 3. *Select Knowledge Assessment Results.*

What screening tools that are validated to use for depression in postpartum period. Please check all that apply.	**Participant Responses**	**Percentage**
PHQ-2	1	20%
PHQ-9	1	20%
EPDS	5	100%
Beck's PPD Inventory	3	60%
Center for Epidemiologic Studies Depression Scale	1	20%
When is best time to formally screen for depression in perinatal period? Please check all that apply.	**Participant Responses**	**Percentage**
At least once during pregnancy	4	80%
At least once postpartum	2	40%
Within 3-8 weeks after delivery	4	80%
Up to 6 months postpartum	2	40%
Up to 1 year postpartum	2	40%
Formal screening is not recommended	0	0%
When does PPD usually peak?	**Participant Responses**	**Percentage**
By 4-6 weeks PP	0	0%
Around 2 months PP	3	60%
Around 3-6 months PP	2	40%
Does not peak or peak is variable	0	0%

All listed screening tools are validated tools to use the postpartum period. All participants knew the EPDS was validated, but only one respondent knew the PHQ-2, PHQ-9, and the Center for Epidemiologic Studies Depression Scale are also validated. Regarding the best time to formally screen, most respondents (80%) knew to screen at least once during pregnancy and most (80%) thought the best time to screen is within 3-8 weeks after delivery. Responses regarding the peak of PPD is split between 2 months (60%) and the correct peak of 3-6 months (40%).

Practice Pattern Results

Most providers (80%) report universally screening for depression with a formal tool during postpartum check-up visits; one provider (20%) screens 75% or more of the time during these visits. Regarding how often providers formally screen postpartum women for depression

during other types of visits, 60% participants report universally screening, one participant (20%) screens 75% or more of the time, and another (20%) screens less than 10% of the time. All participants (100%) attest that they do not show preference to only women with risk factors or those in whom they suspect depression, but they attempt to screen all postpartum women. When asked about the tools used for screening for depression, most use the PHQ-2 (80%), the EPDS (80%), and the PHQ-9 (60%). Most providers (60%) screen up to the recommended one year postpartum, while one participant (20%) stated they screen up to 3 months postpartum and another (20%) screens up to 9 months.

Results on Facilitators to Screening

When participants were asked about what they feel helps them perform screening for PPD in their current practice, 80% responded the medical assistants/support staff and personal factors/motivation. One participant (20%) identified the electronic health record system (EHR) as a facilitator to help with screening.

Results on Barriers to Formal and Universal Screening

The most common personal barrier identified to both formally and universally screening was not remembering (40%). No provider attested to feeling uncomfortable with screening, not seeing the importance of screening, or not believing that formal or universal screening is best practice. The most common clinic-level barrier identified is lack of time (100%); second is screening tools not being readily accessible (40%) and the electronic health record system (40%). Other equally identified barriers include the culture of the clinic not advocating for screening for PPD (20%), postpartum patients not being easily identified (20%), support staff not giving the

tool to patients before the provider encounter (20%), and patients not wanting to take the time to fill out the tool (20%).

Assessing Readiness for Change

When asked about their honest intentions regarding PPD screening, most respondents (60%) state they have been universally screening for PPD for the last 6 months and 40% plan to start universal screening in the next 6 months. Free test responses indicate that providers feel it is important to be screening for PPD and that the medical assistants are supposed to be universally screening all patients before the provider encounter with a PHQ-2 followed by a PHQ-9 for any positive result and a GAD-7 if question 2 is positive.

DISCUSSION

This quality improvement project assessed PPD screening knowledge, practice patterns, facilitators and barriers that exist among providers at an urban Federally Qualified Health Center in Phoenix, Arizona. Major findings from the study revealed provider knowledge around PPD screening, how well they are currently screening for PPD, and where enhancements could be made. Recommendations were able to be outlined based on identified barriers and strengths shared by participants.

Screening Knowledge

Regarding PPD screening knowledge, participating providers have a strong grasp on the prevalence of PPD, its risk factors and complications, and 100% correctly identify the EPDS as the most sensitive tool to detect the condition. For example, all participants correctly marked 100% of the listed risk factors such as history of depression and poor social support. This appears to be above par as Leiferman et al. (2008) found that 24% of primary care providers in

their study reported a lack of knowledge about screening for PPD. At Wesley, however, there does appear to be limited knowledge on all the validated screening tools for PPD as only one participant (20%) identified the PHQ-2 and PHQ-9 as validated tools. A two-step approach to screening for PPD using the PHQ-2 followed by the PHQ-9 has been shown to be effective in primary care and both tools are supported by the USPSTF for that purpose (Gjerdingen et al., 2009). This was surprising as these screening tools are the most commonly used at Wesley.

Most respondents (80%) correctly identified prime times to screen for depression in the perinatal period as at least once during pregnancy and within 3-8 weeks after delivery (ACOG, 2015; Michigan Quality Improvement Consortium Guideline, 2016). However, only two respondents said a prime time to screen is up to one year postpartum indicating that screening later in the postpartum period may not be as high a priority for providers. Additionally, only 40% of respondents knew the peak for PPD is between 3-6 months postpartum (Lobato et al., 2011; Sheeder et al., 2009). For providers not aware of this later peak, there may be missed opportunities if screening is discontinued too early. This knowledge gap reveals an area where providers may be supported by education. Evidence supports screening women throughout the entire 12-month postpartum period, especially where Wesley is located as Gress-Smith et al. (2012) identified a 38% prevalence of PPD at nine months postpartum among low-income Hispanic women in southern Phoenix. Timing of screening is also complicated if postpartum women are difficult to identify, especially if not presenting for their six-week postpartum check. Universally asking women about birth history or universally screening all patients for depression would prevent those missed opportunities.

Practice Patterns

Universal screening with validated screening tools was common. More than half of providers (60%) universally screen all postpartum women for depression with a formal screening tool up to one year postpartum. Providers were correctly using validated screening tools such as the PHQ-2, PHQ-9 and EPDS even if they were not aware that the PHQ-2 and PHQ-9 are validated for that specific purpose. The rest of the providers (40%) had not been universally screening all postpartum women, but do indicate that they intend to start universally screening all women in the next few months. This demonstrates a potential positive effect of participating in this quality improvement project, perhaps with a subsequent increase in participant knowledge of available tools and/or importance of universal screening. Since these providers are in the preparation stage to start universal screening, recommended support to move them towards action includes encouragement, empowerment, and an opportunity to provide feedback (Levesque et al., 2001). This also demonstrates a readiness to perhaps implement recommendations outlined below.

Facilitators and Barriers to Screening

Facilitators and barriers to screening were identified. Providers acknowledged medical assistants, personal motivation, and the EHR as enabling them to perform PPD screening. However, the most common barriers to screening include not remembering to screen (40%) and lack of time with the patient (100%). This is consistent with findings from Leiferman et al. (2008) which also identified lack of time as the most common barrier to screening. Some providers (40%) felt that a screening tool was not easily accessible which would deter screening, especially if there is already a perceived lack of time. The identified barriers could be overcome

by streamlining the process of screening, making the tools more readily available, and making the process automatic. The free-text responses revealed that all patients are supposed to be universally screened for depression at Wesley with a PHQ-2 and PHQ-9 (if the PHQ-2 is positive). Thus, Wesley is already attempting to universally screen for depression with a two-step process for all patients. This set-up works to provide universal screening to postpartum women, but participants report that support staff sometimes forgets to provide patients with the screening tool before the provider visit, patients sometimes decline to be screened, and providers either do not remember to catch the missed opportunity or do not have time. It appears that if screening is declined, it is not being indicated in the patient chart. The main facilitators to screening for PPD that participants identified are support staff (80%) and the EHR (20%). Thus, incorporating both to ensure universal screening would be optimal.

Site-Specific Recommendations to Enhance Screening

Wesley is currently following evidence-based guidelines by attempting to universally screen all patients for depression (USPSTF, 2016). The project findings indicate that there are gaps and universal screening is not always implemented. To enhance screening, the first recommendation is to solidify the current two-step system in place for universal screening as this is a validated approach for screening for PPD (USFSTF, 2016). The first step is to identify what barriers exist that inhibit support staff from providing the screening tool to the patient prior to the provider visit. Feedback on how to stream-line the screening process should be solicited from support staff as they are key players in the implementation plan. Specific suggestions for improvement include: (1) ensuring screening tools are readily accessible, (2) re-educating support staff on the screening algorithm if needed, and (2) providing a cue to support staff from

the EHR to help them remember. In the EHR, it would be helpful to have an option to indicate if a patient declines screening – this way providers could easily and quickly identify why screening was not performed.

The next recommendation is to educate providers and support staff on validated tools available for PPD screening. This includes education that the PHQ-2 and PHQ-9 are validated tools used to screen for PPD. This should be performed so staff understands that their current screening system (if performed) ensures universal screening for PPD. Since the EPDS is a more sensitive tool, it should be made readily accessible for providers and support staff who choose to use it, ideally within the EHR. Staff education should also note that the peak time for PPD is between 3-6 months so they are aware when women are at highest risk. This may make omitting screening during the later postpartum months less likely.

The last recommendation is to provide support to providers who are not yet universally screening for PPD, but plan to start doing so in the next few months. To facilitate movement from preparation towards action, it is recommended to provide encouragement, empowerment, and a way to allow feedback (Levesque et al., 2001). Since the identities of those who do not yet universally screen is unknown (to protect privacy), it is recommended to provide that support to all providers and clinic staff to enhance screening. Feedback at staff meetings and/or the development of a task force to facilitate knowledge sharing and problem solving may facilitate this.

Conclusion

Wesley Health Center is a family practice that cares for many women at high risk for PPD. One major strength of the clinic is that it already has a policy of universally screening for

depression. The findings from the study indicate that this policy is not always followed due to barriers such as lack of time, support staff not providing screening tools before the provider encounter with the patient, and providers forgetting to screen. The screening process could be enhanced by taking the time to ensure that tools are readily accessible, gathering the input from support staff on the barriers they face to screening patients, and utilizing the EHR to make the process more automated. Enhancing the policy already in place would be enhancing screening practices for PPD and improve early detection of this condition.

PPD is an easily treatable condition if detected (Sockol et al., 2011). Wesley has adequate systems in place (e.g., on-site counseling with interdisciplinary collaboration) to ensure proper treatment and follow-up for those identified with PPD. Thus, improving detection by enhancing current screening practices would translate to improved health outcomes for mothers with this debilitating condition.

Dissemination

Key findings and site-specific evidence-based recommendations will be disseminated via an executive summary and corresponding PowerPoint presentation to Wesley's medical director and staff. To preserve privacy, only aggregate data will be shared; no detailed responses that could identify providers will be disseminated in any way. Findings will be compared to current evidence-based practice recommendations. An oral presentation at a monthly staff meeting will be offered and all staff will be encouraged to provide feedback for improvement.

APPENDIX A:

SYNTHESIS OF EVIDENCE TABLE

Synthesis of Evidence Table

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings	Strengths & Limitations
Yawn, B. P., Dietrich, A. J., Wollan, P., Bertram, S., Graham, D., Huff, J., . . . Pace, W.D. (2012). TRIPPD: A practice-based network effectiveness study of postpartum depression screening and management. *Annals of Family Medicine, 10*(4), 320-329. doi:10.1370/afm.1418	To determine the effect of a practiced-based postpartum depression screening and managing program on maternal depressive outcomes at 6 and 12 months postpartum.	Randomized Controlled Trial	**Sample:** Women >18yrs, 5-12 weeks postpartum, receiving care at family medicine clinics randomly assigned to intervention group (n=1353) or usual care group (n=990) by site. **Setting:** 28 family medicine clinics across 21 US states that provided well-baby or maternity care to >30 patients in the previous year.	**Intervention:** Intervention group: Clinic staff in the intervention group received training on screening & diagnosis using Edinburgh Postnatal Depression Scale (EPDS) and the 9-item Patient Health Questionnaire (PHQ-9). Tools given included: outline to providers on when to follow up, medication recommendations, and therapy explanations. Women received nurse-follow up calls. Usual Care Group: Continued to provide same care and mental health services without a universal screening program. Women in both groups were given a packet with the EPDS and PHQ-9 at baseline, 6, and 12 months postpartum. **Main Outcomes Measured:** 5 point or greater drop in PHQ-9 score (measure of depression severity) from baseline to 6 and 12 months postpartum indicated improved maternal depressive outcomes.	At baseline, 29.5% of the intervention group reported depressive symptoms and 25.8% of the usual care group. 45% of women in intervention group met the primary outcome of less depressive symptoms (as indicated by PHQ-9 score drop of 5 points) as opposed to 35% in usual care after 12 months (odds ratio=1.8, 95% CI=1.1-2.9, P = .001). In intervention group, women with elevated EPDS were more likely than control group to receive a diagnosis (66% vs 41%, p=.0001), medication (56% vs 35%, p <.0001), and counseling (20 vs 11%).	**Strengths**: Randomization of sites improved internal validity. Large sample size. **Limitations**: Only mothers over 18 years were included so generalizability to younger mothers is unknown. Practices that participated were part of a practice-based research network which could have resulted in the sites being more open to change compared to other practices.

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings	Strengths & Limitations
Goldsmith, M. E. (2007). Postpartum depression screening by family nurse practitioners. *Journal of the American Academy of Nurse Practitioners, 19*(6), 321-327. doi:10.1111/j.1745-7599.2007.00232.x	To determine how frequently and by what methods nurse practitioners screen for PPD.	Cross-Sectional	**Sample:** 465 FNPs who were members of the American Academy of Nurse Practitioners (AANP). **Setting:** FNPs residing in Illinois and Wisconsin	**Data Collection:** Questionnaires were mailed out to FNPs with a letter describing the purpose of the study and a stamped self-addressed envelope for return of the questionnaire. Survey was 15 questions long with 13 being Likert-type scale or multiple choice and 2 being free text. Of the 465 mailed surveys, 159 were returned on time with data and included in analysis. **Data Analysis:** Survey data was analyzed statistically using SPSS software. Statistics regarding clinician experience, age, education, practice location and setting, specialty, and barriers to screening was formulated. Pearson product-moment correlations were performed to determine any correlation between characteristics of FNPs and screening behaviors.	Most FNPs were master's prepared (89.2%) with 7% having doctorates. Most had been in practice less than 5 years (50.6%). Most FNPs were in a family practice setting (79.9%). Screening for PPD: 42% responded they never screen for PPD in any way. 16.7% screen, but do not use a validated tool. 13.5% use a tool (such as Beck's PPD Inventory, EDPS, Hospital Anxiety and Depression Scale, or the DSM-4) at least 41% of the time. 14.1% use one of the aforementioned tools less than 41% of the time. 14.1% screen, but with another tool. Frequency of screening for PPD: Only 6.1% screen 100% of the time. Most respondents (34.7%) screen 1-20% of the time. Barriers to screening: Confidence and knowledge of screening tool use was the single best predictor of screening (r = .487). Perceptions and beliefs also predicted PPD screening.	**Strengths**: Decent sample size with strong statistical analysis. **Limitations**: Study was limited to only FNPS and may not be generalizable to other NPs or primary care providers. The wording of the survey could have affected outcomes poorly—some respondents commented that some questions were difficult to understand.

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings	Strengths & Limitations
Leiferman, J. A., Dauber, S. E., Heisler, K., & Paulson, J. F. (2008). Primary care physicians' beliefs and practices toward maternal depression. *Journal of Women's Health, 17*(7), 1143-1150. doi: 10.1089/jwh.2007.0543	To examine primary care providers' beliefs, knowledge, self-efficacy, perceived barriers, and practices regarding managing maternal depression.	Cross-Sectional	**Sample:** 232 Primary Care Providers (49 obstetricians, 81 pediatricians, 87 family medicine physicians) **Setting:** 5 cities in South-eastern Virginia	**Data Collection:** Providers in the selected areas and specialties were sent a survey by web or mail with 60 items asking about demographics, attitudes, beliefs, practices, and perceived barriers to managing maternal depression. **Data Analysis:** Chi-square and one-way ANOVA analysis were used to draw analysis between items in the survey.	Attitudes: 90% of providers felt responsible for detecting maternal depression, with obstetricians and family medicine physicians feeling the most responsible and confident in being able to treat maternal depression. Pediatricians were least confident and least comfortable diagnosing and treating PPD. Practices: Overall, 40% reported rarely or never assessing for depression and 66% rarely/never provide a referral. Obstetricians were the most likely to report using a screening tool compared to family doctors or pediatricians. Barriers: Most common barriers reported were limited time (78%), patient barriers such as unwillingness to talk or stigma (30%), lack of knowledge/skill (24%), and being responsible for follow-up care (21%).	**Strengths:** Decent sample size. Various practice sites. Various primary care provider types included. **Limitations:** Response rate suboptimal (232 of 971 PCPs). Many respondents were affiliated with transient military population, which could have skewed results to not be representative of PCPs across the US. Findings are from one small geographical area, which could limit its representation of other regions.
Lobato, G., Moraes, C. L., Dias, A. S., & Reichenheim, M. E. (2011). Postpartum	To determine the prevalence of PPD	Cross-Sectional	**Sample:** 811 Randomly selected mothers of children up to 5 months. Most have	**Data Collection:** Face-to-face interviews were conducted on selected participants in a private setting at the clinic site.	Most participants were 20 years or older (77.3%), had steady partners (86.6%), at least 12 years of school	**Strengths:** Large sample size. Participants were randomly selected by draw.

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings	Strengths & Limitations
depression according to time frames and sub-groups: a survey in primary health care settings in Rio de Janeiro, Brazil. *Archives of Women's Mental Health, 14*, 187-193. doi: DOI 10.1007/s00737-011-0206-6	according to time after birth and sub-groups.		low education, low socioeconomic status, and are first time mothers. **Setting:** The sample was drawn from 5 public primary health care clinics in Rio de Janeiro, Brazil.	Demographics were collected and the Edinburgh Postnatal Depression Scale (EPDS) administered to assess for depressive symptoms with 11 score cutoff. **Data Analysis:** Software Stata 10 was used for data processing and analysis and Fisher's exact test to check accuracy of estimates of PPD.	(71.9%), and low (42.5%) or medium (45.6%) socioeconomic status. 49.6% were first time mothers. Overall prevalence of PPD through 5 months postpartum was 24.3% (95% CI, 21.4—27.4) with a peak around 3 months postpartum (37.5% of positive scores). Prevalence of PPD was higher among women with low schooling, women under 20 years of age, women without a steady partner, and those of a low socioeconomic status.	**Limitations:** May not be generalizable to other sites that have different demographics (higher socioeconomic status or other ethnicities. EPDS screening tool was used to determine PPD status instead of official diagnosis.
Sheeder, J., Kabir, K., & Stafford, B. (2009). Screening for postpartum depression at well-child visits: Is once enough during the first 6 months of life?. *Pediatrics, 123*(6), e982-e988. doi: 10.1542/peds.2008-1160	To determine the feasibility of screening for postpartum depression with electronic reminders and to determine the prevalence and incidence of PPD at well-child visits through 6 months postpartum.	Mixed Methods: Feasibility study with longitudinal descriptive component.	**Sample:** 199 women aged 12-21 years with a child between 0-6 months old. **Setting**: The Colorado Adolescent Maternity Program (CAMP) located in an urban teaching hospital in Colorado that provides primary, prentatal, delivery, and postnatal care. No PPD screening was performed at this site.	**Data Collection:** Data was obtained via the child's medical electronic medical record. Nurses were electronically prompted to give the EPDS to all mothers of infants 0-6 months while waiting for their infants to be seen. Providers scored the EPDS and recorded them in the child's record. Providers were flagged to enter in a management plan or referral for women with high score of at least 10. **Data Analysis:** Statistics were determined on the study population characteristics,	Feasibility: No mothers refused to take the EPDS. Providers responded to 99% of the electronic cues. Prevalence and Incidence: 20.1% of the 199 mothers who completed the EPDS at 2-weeks, 2 months, 4 months, and 6 months postpartum had a positive screen. Prevalence (EPDS at least 10) was highest at the 6 month visit (18.5%) and incidence was highest at the 2 week visit (17%).	**Strengths:** Internal validity appears to be strong with data collected from electronic record. **Limitations:** Study conducted only on women 21 years and younger (adolescent program). Study used electronic reminders which may not be built into other electronic medical record systems.

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings	Strengths & Limitations
				prevalence and incidence of PPD symptoms, and referral rates.	All mothers who screened positive (100% of the 40 mothers) were referred for mental health support.	
Carroll, A. E., Biondich, P., Anand, V., Dugan, T. M., & Downs, S. M. (2013). A randomized controlled trial of screening for maternal depression with a clinical decision support system. *Journal of the American Medical Informatics Association, 20*, 311-316. doi: 10.1136/amiajnl-2011-000682	To determine if automated screening and printed materials to aid physicians at the point of care promotes universal screening and referral.	Randomized Controlled Trial	**Sample:** Mothers of 3,520 children between the ages of 0 and 15 months old were randomized to prescreener forms (PSF) group (n=1167), Just in Time (JIT) materials group (n=1167), or control group (n=1186). **Setting:** Large Primary Care Clinic in Indiana	**Intervention:** Mothers of infant patients were randomized to one of 3 groups: 1. PSF group: Mothers who completed screening questions on an electronic prescreener form in the waiting room before seeing the physician (with alerts for positive screens given to physicians). 2. JIT group: Everything in group 1 plus "Just in Time" printed materials given to physicians as a clinical decision support tool. 3. Control group: Physicians were given reminders to screen on a paper worksheet. **Main Outcomes Measured:** The amount of times physicians suspected maternal depression and referred for care.	More mothers were identified and referred for assistance for PPD in the two intervention groups (2.4% for both) compared to the control group (1.2%). More mothers were found to have more concerning symptoms in the intervention groups (depressed mood and loss of pleasure). The additional Just in Time materials did not result in more referrals than did the prescreening form with alerts alone. Electronic prescreening and alerts appear to improve detection of PPD in primary care.	**Strengths:** Large sample size. **Limitations**: Non-blinded. Conducted at 1 site. Conducted at a site that has electronic forms that the patient is able to fill out in the waiting room with alerts to physicians. Sites without such technology may not be able to employ such intervention to reproduce results.
Figueroa-Leigh, F., Rojas, P., & Castanon, C. (2015). Screening for postpartum depression in a private health care network in Chile *Family Practice, 32*(4), 431-	To determine how often the EPDS is used to screen mothers during well-child visits, to determine what factors are associated with the health care professional	Cross-Sectional	**Sample:** 1940 visit encounters from 503 medical charts of infants 1 to 5 months 29 days of age who attended a large	**Data Collection:** Data was collected from electronic chart reviews and placed into an Excel spreadsheet for analysis. **Data Analysis:**	Only 9 of 503 or 1.7% of infant medical charts indicated the use of the EPDS to screen for PPD in mothers. The only variable found to significantly be associated	**Strengths:** A large sample size was used spanning over 2 years. **Limitations:**

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings	Strengths & Limitations
435. doi: 10.1093/fampra/cmv040	using the EPDS, and to determine the percentage of mothers with depression who were referred for psychiatric care. Hypothesis: The use of the EPDS on mothers during WCC is low and could be contributed to certain variables related to the health care provider, infant, or mother.		health care network from 2009-2011. **Setting:** The largest private health care network of the Pontifical Catholic University of Chile.	SPSS software was used to perform all analysis including: -Univariate analysis to determine relationship between variables. -Bonferroni correction if more than 2 categories were present. -Adjustment of certain variables with a multivariate analysis using logistic regression. Values of $p < .05$ is defined as statistically significant.	with screening was a history of maternal depression.	Only looks at well-child visits. Results may not be representative of other types of visits (postpartum or other types of health care exams pertaining to the mother). Study is conducted in Chile, which may have different practice guidelines or general practice than in the United States regarding screening practices.
Yawn, B. P., Bertram, S., Kurland, M., & Wollan, P. C. (2015). Repeated depression screening during the first postpartum year. *Annals of Family Medicine, 13*(3), 228-243. doi: 10.1370/afm.1777	To determine the benefit of screening for PPD at 6 and 12 months postpartum and factors predicting new depressive symptoms.	Longitudinal Descriptive	**Sample:** 1,432 women over 18 years old who screened negative for PPD between 4 and 12 weeks postpartum. **Setting:** 28 family medicine clinics across 21 US states that provided well-baby or maternity care to >30 patients in the previous year.	**Data Collection:** Women who were enrolled at part of a larger randomized controlled trial who screened negative for PPD (PHQ-9 score less than 10) were rescreened at 6 and 12 months via mailed packet containing PHQ-9, EPDS, and demographic questions. **Data Analysis:** Percentages were calculated to determine women newly identified to be high risk for PPD (positive screen). Generalized linear mixed-effects models were used to analyze predictive factors contributing to new depressive symptoms.	At 6 months postpartum, 10.9% of the 1,235 women who initially screened negative for PPD (PHQ-9 less than 10) at baseline had a positive screening score indicating elevated symptoms. At 12 months, 6.1% of the 969 women who screened negative at baseline and 6 months postpartum had elevated scores. Factors associated with new elevated scores were the same as those risk factors associated in the early postpartum period: history of depression, anxiety, being unmarried, and having low educational attainment.	**Strengths:** Large Sample Multiple Sites Across multiple states **Weaknesses:** Not all women returned their surveys. Women who did not return their surveys may differ in their demographics and depressive symptoms. Data is based on screening data instead of clinical PPD diagnosis. Adolescents were excluded.

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings	Strengths & Limitations
Gjerdingen, D., Crow, S., McGovern, P., Miner, M., & Center, B. (2009). Postpartum depression screening at well-child visits: Validity of a 2-question screen and the PHQ-9. *Annals of Family Medicine*, *7*(1), 63-70. doi: 10.1370/afm.933.	To determine the validity of a 2 question screen and the 9-item Patient Health Questionnaire (PHQ-9) in identifying PPD and to determine the feasibility of screening at well-child visits.	Longitudinal Descriptive	**Sample:** 506 women who were English-literate with infants 0-9 months postpartum. **Setting:** 7 Family medicine or pediatric clinics in Minneapolis and St. Paul metropolitan areas.	**Data Collection:** Participants were asked to complete questionnaires at 0, 1, 2, 4, 6, and 9 months postptartum during their infant's well-child visits. If unable to complete the questionnaire at the visit, then they were offered telephone or mailed questionnaires. Initial questionnaires included demographic information, and subsequent surveys had a 2 question screen and PHQ-9. Mothers had a structured clinical interview for DSM-4 (SCID) for any positive screenings to clinically diagnose major depression. **Data Analysis:** 2 question survey was positive if yes was answered to either question. PHQ-9 was deemed positive if scores were 10 or greater. 2 validity tests for each screen was performed checking for sensitivity, specificity, negative predictive value, and positive predictive value looking at data from baseline as well as data from the entire study. Bivariate analysis was performed to check if there were differences in women who dropped out of the study and who completed the study.	45 (8.9%) of the women had major depression (as assessed by the SCID). The 2 question screen was 100% sensitive and 44% specific. The PHQ-9 was 82% sensitive and 84% specific. The PHQ-2 (the first 2 questions on the PHQ-9) was 84% sensitive and 79% specific. Feasibility was difficult to assess as the sites converted to electronic charting during the study. 38% of women completed their questionnaires during their well-child visits, 29% by mail and 33% by telephone. It was noted that more questionnaires were completed at pediatric sites than family clinics, which may be explained by the wider range of responsibilities at the family practice sites. A 2 stage screening process whereby the 2-question screen is performed first and any positive screens are	**Strengths**: Used the SCID to clinically diagnose PPD which validates the screening tools rigorously. Large sample size. Multiple clinics. **Weaknesses:** Only English literate mothers participated, which excludes other high risk groups (low income minorities)

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings	Strengths & Limitations
					followed by the PHQ-9 appears effective in primary care practice.	
Hanusa, B. H., Scholle, S. H., Haskett, R. F., Spadaro, K., & Wisner, K. L. (2008). Screening for postpartum depression in the postpartum period: A comparison of three instruments. *Journal of Women's Health, 17*(4), 585-596. doi: 10.1089/jwh.2006.0248	To compare the EPDS, PHQ-9, and 7-item screen of the Postpartum Depression Screening Scale (PDSS) in their abilities to identify women with PPD up to 6 months postpartum.	Longitudinal Descriptive	**Sample:** 123 women 18 years of age or older with an infant 6-8 weeks old who were enrolled in the pregnancy/postpartum care management program of a certain health care insurance plan. **Setting:** Telephone calls and home visits in the Pittsburgh area	**Data Collection:** Three screening instruments for PPD were administered via telephone to selected participants. Home visits were conducted for women with positive screenings to confirm the diagnosis of PPD using the DSM-4 criteria for major depressive disorder (MDD). Women with negative screenings had repeated screenings conducted at 3 and 6 months postpartum to detect new cases. **Data Analysis:** Descriptive statistics were used for sociodemographic data. Chi-square or Fisher exact tests were used for categorical variables and analysis of variance (ANOVA) was used to continuous variables. Pearson correlations to determine how scores were associated were used.	Regarding demographics, 72% were white and 31% were on Medicaid, and 32% were first-time mothers. Of the 123 women screened, 11% had major depressive disorder as confirmed by the DSM-4 within 6 months postpartum. EPDS (with a positive score of 10 or more) identified 62% of cases. The PHQ-9 (with a positive score of 10 or more) identified 31%. The PDSS 7 item (with a positive score of 14 or more) identified 92%, but it also indicated 94% of women as positive who did not have depression. The EPDS was more accurate than the other 2 screenings tools ($p = .01$), but after taking into account verification bias, the EPDS and the PDSS were more accurate than the PHQ-9 ($p<.03$).	**Strengths:** 3 screening tools were compared with strong statistical analysis. **Weaknesses:** Generalizability can be limited due to small sample size that was not randomly selected. Participants were pulled from one insurance plan.

APPENDIX B:

POSTPARTUM DEPRESSION SCREENING QUESTIONNAIRE

Postpartum Depression Screening Questionnaire

Survey Question	Responses
What is your specialty?	□ MD □ DO □ DNP □ NP-Masters prepared □ PA □ Other
How many years have you been in practice?	□ < 1 year □ 1-3 years □ 4-6 years □ 7-10 years □ >10 years
How many postpartum women (given birth within 12 months) do you estimate you see per month? This includes for postpartum check and any other reason for seeking care.	□ 0 □ <1 per month □ 1-5 per month □ 6-10 per month □ 11-15 per month □ Over 15 per month
Knowledge Assessment	
What is the estimated prevalence of postpartum depression on average in the United States?	□ Less than 5% □ 5-9% □ 10-15% □ 16-20% □ Over 20%
What are the possible complications of postpartum depression? Please check all that apply.	□ Poor infant weight gain □ Developmental delays in infant □ Dysfunctional family relationships □ Missed infant health appointments □ Poor school performance when child is older □ Chronic mental health problems for mother
What are the risk factors for postpartum depression? Check all that apply.	□ Depression during pregnancy □ Anxiety during pregnancy □ Stressful life events during pregnancy or early postpartum period □ Traumatic birth experience □ Preterm delivery/baby in NICU □ Low social support □ Previous history of depression □ Breastfeeding problems □ There are no major risk factors
What screening tools are validated for use to screen for depression in the postpartum period?	□ Patient Health Questionnaire – 2 (PHQ-2) □ Patient Health Questionnaire – 9 (PHQ-9) □ Edinburgh Postnatal Depression Scale (EPDS) □ Beck's PPD inventory □ Center for Epidemiologic Studies Depression Scale

What is the most sensitive tool to detect postpartum depression?	□ PHQ-2 □ PHQ-9 □ EPDS □ Beck's PPD inventory □ Center for Epidemiologic Studies Depression Scale
When is the best time to formally screen for depression in the **perinatal** period? **Please check all that apply.** (Formal screening means using a validated screening tool)	□ At least once during pregnancy □ At least once postpartum □ Within 3-8 weeks after delivery □ Up to 6 months postpartum □ Up to 1 year postpartum □ Formal screening is not recommended
Who should be screened for postpartum depression?	□ Only women in whom you suspect depression □ Only women with risk factors □ All postpartum women □ There is no evidence to support formal screening for postpartum depression
When does postpartum depression usually peak?	□ By 4-6 weeks postpartum □ Around 2 months postpartum □ Around 3-6 months postpartum □ Does not peak or peak is variable
Practice Patterns	
Approximately how often do you **formally** screen for depression during postpartum check-up visits?	□ Less than 10% of the time □ 10-24% of the time □ 25-49% of the time □ 50-74% of the time □ About 75% or more of the time □ I universally screen all my postpartum patients during these types of visits □ I do not formally screen for depression during these visits
Approximately how often do you **formally** screen postpartum women (birth within one year) for depression during other types of visits? (If you universally screen all your patients for depression using a validated tool, please select "I universally screen").	□ Less than 10% of the time □ 10-24% of the time □ 25-49% of the time □ 50-74% of the time □ About 75% or more of the time □ I universally screen all my postpartum patients during these types of visits □ I do not formally screen for depression during these visits □ I cannot easily identify which women are postpartum during other types of visits
Who do you formally screen for postpartum depression in your current practice?	□ Only women in whom you suspect depression □ Only women with risk factors □ All postpartum women □ I do not formally screen for postpartum depression □ Other: Please specify _____

What tools do you use for screening?	□ PHQ-2 □ PHQ-9 □ Edinburgh Postnatal Depression Scale (EPDS) □ Beck's PPD inventory □ Center for Epidemiologic Studies Depression Scale □ I never use a screening tool □ Other: Please specify _____
When do you stop screening for postpartum depression?	□ By 4 weeks postpartum □ By 6 weeks postpartum □ By 3 months postpartum □ By 6 months postpartum □ By 9 months postpartum □ By 1 year postpartum □ I do not screen □ Other: Please specify _____
Barriers to Formal and Universal Screening	
What do you believe are your main personal barriers to **formally** screening postpartum women? Check all that apply. Note: Formal screening means using a validated screening tool	□ I don't see the importance of formal screening for postpartum depression □ I don't remember to formally screen □ I do not feel comfortable formally screening with a tool □ I believe informal screening is sufficient. □ There is no personal barrier—I do well at formally screening postpartum women □ Other: Please specify____
What do you believe are your main personal barriers to **universally** screening all postpartum women? Check all that apply.	□ I don't believe universal screening is best practice □ I do not remember to universally screen □ There is no personal barrier—I do well at universally screening all postpartum women □ Other: Please specify ____
What do you believe are the clinic-level barriers to screening? Check all that apply.	□ Not enough time with the patient □ The screening tools are not readily accessible □ The electronic health record system □ The culture at the clinic does not advocate for screening for postpartum depression □ Postpartum patients are not easily identified □ Other: Please specify_____
Facilitators to Screening	
What do you believe helps you perform screening for postpartum depression in your current practice? Check all that apply.	□ The electronic health record system □ The Medical Assistants/support staff □ Personal factors/motivation □ Other: Please specify_____

Assessing Readiness for Change Please describe your honest intentions regarding postpartum depression screening.	□ I do not plan to universally screen postpartum women in the next 6 months □ I am thinking of universally screening for postpartum depression in the next 6 months □ I plan to start screening all postpartum women in the next 6 months. □ I have recently started screening all postpartum women. □ I have been universally screening for the last 6 months
Is there anything else you would like to add/comment?	Free Text Response:

APPENDIX C:

DISCLOSURE FORM

DISCLOSURE FORM

Introduction

My name is Rosanna Lujan, and I am a Family Nurse Practitioner student in the Doctor of Nursing Practice Program at the University of Arizona. I wish to complete a quality improvement project at Wesley to enhance screening practices for postpartum depression and promote early detection.

Purpose of Project

Objectives are to determine primary care provider knowledge, practice patterns, perceived facilitators, and barriers regarding postpartum depression (PPD) screening at Wesley Health Center, an Urban Federally Qualified Health Center in Phoenix, Arizona. The purpose is to take findings and make site-specific recommendations for PPD screening to enhance early identification of women with postpartum depression.

Why are you being asked to participate?

You are being invited to participate because you are a provider at Wesley Health Center and can provide valuable information about the current screening practices for postpartum depression at Wesley, insights regarding the unique barriers to screening, and facilitators that can be used to overcome those barriers.

Description of the project:

You will be asked to take a short 5-10 minute survey with 23 multiple choice and short answer questions. Findings will be summarized and compared to current evidence-based practice recommendations. Aggregate data and site-specific recommendations to enhance screening practices will be disseminated back to providers at Wesley Health Center via an executive summary and PowerPoint. No personally identifiable information will be collected and no individual responses will be shared – only summary findings.

Are there any risks?

Risks are minimal as the survey is anonymous and only summary findings will be shared to eliminate the risk of individual providers being targeted for reprimand or damaging reputations.

An Institutional Review Board responsible for human subjects' research at The University of Arizona reviewed this project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research.

What are the benefits?

The benefits of the study will be to inform recommendations made to your site to enhance postpartum depression screening practices and improve patient care.

The study is voluntary

You may decide not to take the survey or stop the survey at any time without penalty. By clicking on the link to the online survey or filling out the paper survey at the medical staff meeting, you are consenting to participate.

For any questions, please contact Rosanna Lujan at sana520@email.arizona.edu or Dr. Christy Pacheco at christyp@email.arizona.edu.

Thank you

APPENDIX D:

WESLEY HEALTH CENTER LETTER OF SUPPORT

August 28, 2017

University of Arizona
Human Subjects Protection Program
1615 E. Helen St.
P.O. Box 245137
Tucson, AZ 85724

Dear Human Subjects Protection Program Members:

This is to certify that Rosanna Lujan, RN, has permission to perform a quality improvement project at Wesley Health Center in partial fulfillment of the requirements for the Doctor of Nursing Practice at the University of Arizona College of Nursing.

Mrs. Lujan has been granted permission to access the clinic site, speak to the primary care staff, and provide a questionnaire to the staff for the project titled, "A Needs Assessment for the Enhancement of Postpartum Depression Screening at a Primary Care Clinic in the Southwest." The study will be physically conducted at the health clinic located in the Golden Gate Community Center at 1625 North 39th Avenue in Phoenix, and the questionnaire will be made available electronically.

I understand that Mrs. Lujan will obtain review and approval from the University of Arizona IRB for Fall 2017 prior to conducting this quality improvement project.

Sincerely,

Dr. Jesselyn Gaona, MD
Medical Director

APPENDIX E:

NOT HUMAN SUBJECTS RESEARCH DETERMINATION

Research
Office for Research & Discovery

Human Subjects
Protection Program

1618 E. Helen St.
P.O.Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
http://rgw.arizona.edu/compliance/home

Date:	September 14, 2017
Principal Investigator:	Rosanna Sanchez Lujan
Protocol Number:	1709813832
Protocol Title:	A Needs Assessment for the Enhancement of Postpartum Depression Screening at a Primary Care Clinic in the Southwest
Determination:	Human Subjects Review not Required

The project listed above does not require oversight by the University of Arizona because the project does not meet the definition of 'research' and/or 'human subject'.

- **Not Research as defined by 45 CFR 46.102(d):** As presented, the activities described above do not meet the definition of research as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "research means a systematic investigation, including research development, testing and evaluation, designed to contribute to generalizable knowledge".
- **Not Human Subjects Research as defined by 45 CFR 46.102(f):** As presented, the activities described above do not meet the definition of research involving human subjects as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains data through intervention ***or*** interaction with the individual, or identifiable private information".

Note: Modifications to projects not requiring human subjects review that change the nature of the project should be submitted to the Human Subjects Protection Program (HSPP) for a new determination (e.g. addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the research question). Please contact the HSPP to consult on whether the proposed changes need further review.

The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).

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