



Maternal Postpartum Depression Screening and Referral in a Latinx Immigrant Population: A Quality Improvement Study

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Abstract

Postpartum depression (PPD) is the most underdiagnosed obstetric complication in the United States. Left undiagnosed and untreated, PPD can have lasting effects on the infant and the mother. A quality improvement project was conducted to improve rates of screening and referrals with postpartum Latinx immigrant mothers. Community health workers were designated to assist with PPD screening and referral for behavioral health services, at a pediatric patient-centered medical home, using a referral process algorithm (Byatt, N., Biebel, K. & Straus, J. Postpartum Depression Screening Algorithm for Pediatric Providers During Well-Child Visits, *MCPAP for Moms: Promoting maternal mental health during and after pregnancy*, N/A (2014)). Using chi analysis of pre and post implementation findings, results demonstrated a 21% increase in screening of eligible postpartum mothers. Referrals for behavioral health services also increased from 9 to 22% of patients that screened positive. Community Health Workers were an asset in increasing screening and referral practices for PPD in a Latinx immigrant population. Further research efforts will assist to remove further barriers to PPD screening and treatment.

Keywords Postpartum Depression · Community Health Workers · Edinburgh Postnatal Depression Scale · American Academy of Pediatrics · Latinx immigrant mothers

Introduction

According to Bauman and colleagues, one in eight women experience postpartum depression (PPD), and there are higher prevalence rates depending on state and subgroups of women, such as ethnicity, non-English speaking status, and minority status [1]. In the latest iteration of its program, Healthy People 2030 prioritized increasing the proportion of women who get screened for PPD [2]. Additionally, the American Academy of Pediatrics' (AAP) policy statement recommends that mothers of infants are universally screened for PPD at the infant's 1, 2, 4, and 6 month well child checks [3]. The United States Preventative Taskforce (USPTF) also recommends screening for PPD and the Centers of Medicaid and Medicare (CMS) support the coverage of PPD screening through Early and Periodic Screening,

Diagnostic and Treatment Services (EPSDT), providing a revenue stream for reimbursement for such screening [4, 5].

Postpartum depression can occur up to 12 months after childbirth [6] and may include the following symptoms: sleep disturbance (beyond that associated with the care of the infant), anxiety, irritability, a feeling of being overwhelmed, as well as an obsessional preoccupation with the infant's health and feeding [6]. Risk factors for PPD include a previous diagnosis of depression, family history of depression, teenage pregnancy, poverty, and limited social support [7]. Studies have shown the following significant adverse effects from untreated PPD: increased costs of medical care, inappropriate medical care, child abuse and neglect, poor mother-child bonding, discontinuation of breastfeeding, family dysfunction, and adverse effects in the infant/child's development [7, 8]. Screening and early intervention have the potential to prevent many of these life altering problems. The purpose of this quality improvement project was to improve PPD screening and referral rates in Latinx and immigrant mothers.

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Available Knowledge

Healthy People 2030, the USPTF, and the AAP each call for universal PPD screening during the first year of an infant's life, yet less than half of pediatricians surveyed in 2013 were routinely screening for PPD [2–4]. Current knowledge exists related to screening and prevalence of PPD, but evidence-based guideline recommendations are not being adhered to in primary care settings. A systematic review found that only 55% of healthcare professionals *ever, sometimes, often, or always* assess for PPD, and 45% of healthcare professionals *never* assessed for PPD [9]. The study also found that although clinical assessment is ineffective in assessing for PPD, healthcare professionals are most likely to use clinical assessment (80%) rather than a validated screening tool [9].

Latinx and African American women experience high health disparities including increased prevalence of PDD compared to non-Latinx white women [10]. A systematic review found that PPD symptoms are significantly increased among immigrant women, with reported rates as high as 59% [11]. Research has shown the prevalence of PPD in immigrant mothers is twice as high as non-immigrant mothers [12]. This higher prevalence compared to the general population is thought to be caused by low social support, recent stressful events, migration stressors, and cultural adjustments [12]. Women who are African American, Asian and otherwise non-white (Native American, multi-racial, Alaska Native) have been found to be less likely to be screened for PPD than white women. Additionally, women who are insured by Medicaid/Medicare, were less likely to be screened than women who were privately insured [13]. The low rate of PPD screening lies in contrast to multiple studies identifying that Latinx, immigrant mothers have higher rates of PPD on average as compared to white mothers [11, 14]. Lucero et al. completed PPD screenings on a convenience sample of 96 immigrant Latinx women. Of this sample 54% had significant PPD symptoms in contrast to 16.4% of white women who self-reported PPD symptoms within a similar timeframe in the same state [14]. A similar study was repeated and noted to have comparable results; Latinx immigrant women had significantly higher rates of PPD than white or other ethnic minority counterparts [15]. Researchers have identified several barriers that prevent Latinx mothers from being screened routinely as recommended by the AAP including immigration status, English-language proficiency, and lack of available treatment options [16]. Additionally, providers have voiced concerns over lack of time, lack of standardized screening tools to implement during visits, and lack of a referral process for addressing patient barriers as well as inadequate mental

health resources for immigrant or limited-English proficient women [16].

In the state of South Carolina (SC), according to the March of Dimes, Latinx mothers had the highest birth rates at 84.8% per 1,000 live births for the years 2014–2016 [17]. Furthermore, the 2019 US Census shows an 11.3% increase in Latinx populations in SC with the majority of Latinx individuals in the state being under the age of 18 [18]. At two pediatric patient-centered medical homes (PCMH) in SC there are a majority first-generation Latinx population of children with 54% of the clinic's patient population ranging in ages from zero to three identifying as Latinx (N=1087). In a provider focus group conducted at the PCMH sites to determine barriers to screening, providers identified as having limited knowledge of the updated screening guidelines for PPD, lack of time, lack of office protocol and lack of available referral services for mothers with symptoms of PPD as reasons why routine screening per the AAP guidelines were not completed.

Problem Description

The low percentages of PPD screening and referral rates noted in these pediatric clinics in SC stemmed from lack of a PPD universal screening and referral process for new mothers as well as provider time constraints and lack of office protocol. As the majority of the clinic population identifies as Latinx, this problem was further complicated by local immigration, demographic, and birth trends within these PCMH locations in SC. At the time of this project there were a total of ten providers in the clinic, three pediatric nurse practitioners, and seven pediatricians. Of these, only three providers routinely screened mothers for PPD in accordance with the AAP guidelines. Without a validated and reliable screening process, a diagnosis of PPD could be missed [3]. Pediatric providers see postpartum mothers and infants frequently and often prior to the mother's routine postpartum obstetric follow-up at six weeks. This affords pediatric primary care providers the ability to be uniquely proactive in screening and referring mothers for PPD in the early postpartum period. Additionally, the Medicaid office in the state of this project has an ongoing initiative to improve health care for children called Quality through Technology and Innovation in Pediatrics (QTIP). QTIP recognized postpartum depression screening in pediatric primary care as a quality measure during the timeframe in which this project was implemented.

Rationale

In the PCMH where this quality improvement project was implemented, following the provider focus study

group, identified barriers to care for this specific population included: lack of insurance coverage, cultural stigma, language barriers, time constraints of providers, lack of a referral process and inadequate mental health resources for this population. In rural healthcare clinics, one strategy to address barriers is the use of community health workers (CHW) who help provide patients with community resources [19]. As trained public health workers they promote health and prevent disability and diseases through community level interventions and activities [19]. They are often thought of as a community advocate and patient navigator, assisting with guiding patients through the healthcare system. License and certification requirements for CHWs vary by state but most require at the minimum a high school diploma and completion of a training program, some states require a college degree and additional certifications [20]. When CHWs are utilized in pediatric practices, the following improvements have been noted: improved appointment adherence, increased parent education in the newborn period regarding care and safety of neonates, and increased adherence to childhood vaccination schedules [19, 21]. Although it is within the scope of practice for CHWs to screen patients for PPD through use of a standardized screening tool, they must communicate the results of the screening to the health care team for appropriate referral to behavioral healthcare and patient education. The CHW can concurrently assist the mother with the logistics of the appointment; ensuring she has the means to get to the appointment, knows the appointment date, time and location and plan to follow-up with the mother after the appointment. Community health workers are known and trusted leaders in the community that have the knowledge, skills, and attitudes to facilitate enhanced patient outcomes, improve connectedness to the medical home, while decreasing healthcare costs when incorporated into the medical team [22–24].

Specific Aims

This project aimed to improve postpartum screening and referral rates in Latinx and immigrant mothers specifically through utilization of CHWs. Literature indicates that both Latinx and immigrant mothers have higher than average rates of PPD [11, 12, 14, 15]. By integrating CHWs into the visit to assist with screening and later address referral barriers (if necessary) this provided an opportunity for improved health outcomes for this population. These concepts were applied to two patient centered medical homes where there was a lack of process for routine screening and referrals to behavioral health specialists for management of PPD.

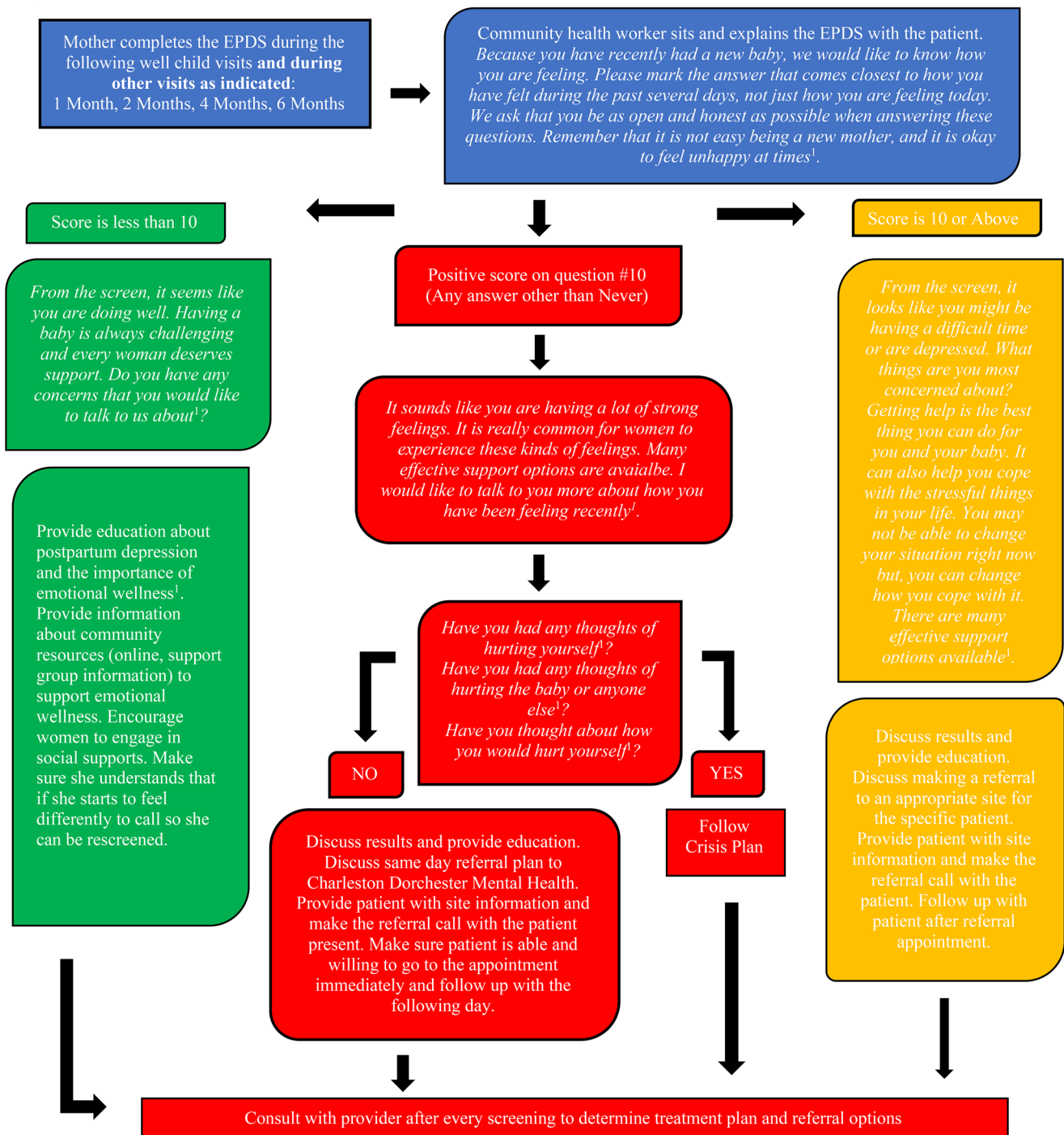
Methods

Context

This quality improvement project occurred in two South Carolina PCMHs that primarily provide care to low-income Latinx populations. Few parents/caregivers at this clinic have access to health insurance and most live at the poverty level or below. At the time of this project, 51% of children in the practice ages zero to three identified as “Hispanic, Latino, or Spanish”, 76% noted having Medicaid insurance coverage and 16% identified as being uninsured or self-pay. Of note, in South Carolina individuals or families must be at the 250% of federal poverty guidelines to receive Medicaid and South Carolina did not expand Medicaid under the Affordable Care Act (ACA). In addition, non-US-citizen children are not eligible for Medicaid; those choosing to seek care in the clinic that are not insured are reflected in the uninsured or self-pay category. Because PPD is common in low-income immigrant populations, [15] these patients were identified as an at-risk sub-population. This quality improvement project was reviewed and deemed QI and did not require full IRB approval.

Measures

The Edinburgh Postnatal Depression Scale (EPDS) was utilized in this project. It is endorsed by the AAP’s *Bright Futures* guidelines and translated into multiple languages, the EPDS screening tool is easy to use and has been found to have high sensitivity (0.66–0.85) and specificity (0.84–0.95) rates [25]. The Spanish version of this screening tool has also been validated [26]. A process was created for the two CHWs located within these clinics to use the EPDS to screen all mothers at 1, 2, 4 and 6-month well-child visits as recommended by the AAP [27]. Inclusion criteria included all patients ages zero to 6 months in the clinic that presented for well visits at 1 month, 2 months 4 months and 6 months during the post-implementation time frame. The CHWs, providers and healthcare staff were trained by the project coordinator on this new screening process including when and how to administer and score the screening tool at selected patient visits. In addition, an algorithm (Fig. 1) [34] was used to assist the CHWs with possible treatment options based on the patient score following the screening. In addition to the standard questions regarding PPD, a crisis plan was included in the referral process algorithm for patients reporting suicidal thoughts during the screening. Following these education sessions, the project was implemented. Screening rates were monitored in real time throughout the duration of this quality improvement project. For this reason, the project coordinator was able to provide just-in-time



*Used with permission by the Massachusetts Child Psychiatry Access Project for Moms' Postpartum Depression Screening Algorithm for Pediatric Providers During Well-Child Visits, available at www.mcpapformoms.org [34]

Fig. 1 Postpartum depression screening algorithm used with permission from the Massachusetts Child Psychiatry Access Project for Moms.

updates of results that supported booster training sessions when needed throughout the implementation period.

Intervention

During the implementation phase, the CHW greeted the patient upon arrival and presented them with the EPDS in English or Spanish in addition to the usual well-child visit

paperwork. The CHW sat with the patient, explained the EPDS in therapeutic language, addressed questions and concerns and scored the screening tool once the patient was finished. Depending on patient preference, the screening was administered as an interview, or the patient completed the screening individually once the screening tool was explained. The CHW then briefly discussed the patient's score and used the algorithm [34] (Fig. 1) to identify possible treatment options. When a patient screened positive, indicated by a score greater than 10 or a positive answer on question #10 (*the thought of harming myself has occurred to me*), the CHW would explain that a referral to a behavioral health specialist may be recommended. The CHW would use therapeutic language as outlined in the referral algorithm [34] (Fig. 1) to help the mother understand that it is common for mothers to need some assistance during this transition. The CHW would discuss screening results with the pediatric provider and give to them to review prior to the provider going in to see the patient. Following the appointment, the screening tool was uploaded into the patient's medical chart. If the CHWs were unavailable to meet with the patient, the EPDS screening tool was still included with the routine well child visit paperwork for the parent to complete. Providers and other members of the healthcare team were trained to screen individuals at expected intervals, however, CHWs would still follow up with the patient if needed to facilitate resources following the appointment.

During the appointment, the pediatric provider discussed treatment options in more detail with the patient based on the patient's score on the screening tool. Once the provider completed this portion of the visit, the CHW then assisted with facilitating referral sources based on the provider and patients' joint decision making. Outpatient referral options for this population during the timeframe of this project included the department of mental health, two local clinics that charge from a sliding scale based on income/poverty level and also accepted Medicaid, and three local clinics that served patients without insurance with requirements that patients be a certain percentage below the federal poverty line. If in crisis, patients would be instructed to go to the local hospital, call 911 or an ambulance would be called on their behalf to the clinic depending on the patient situation. For outpatient referrals, barriers that may prevent the patient from keeping the scheduled referral appointment were addressed and additional community resources were offered, such as support groups or online resources. Some examples of barriers that CHWs were able to address included, determining most accessible clinic for each individual patient based on location and insurance provider, they were able to address language barriers with scheduling the appointment and, at times, provide assistance with transportation costs.

Data Collection

To measure the impact of the above-mentioned interventions, pre and post-implementation data were collected by reviewing current procedural terminology (CPT) billing codes to identify patients being seen for well child visits. All charts were examined for CPT codes indicating emotional/behavioral assessments and/or mention of PPD or EPDS screening. The history and physical, progress notes and problem list of each patient were also reviewed. Additional demographic information collected included age of mother, number of pregnancies, number of live births, EPDS score and referral information (if applicable).

Analysis

The number and rate of EPDS screenings completed at qualifying well child were compared in the 6 months pre-implementation (March 2019–August 2019) and 6 months post-implementation (September 2019–February 2020). Bar and line graphs were utilized to analyze data trends. Descriptive statistics were used to describe demographics and rates of screening. Chi square analysis was utilized to determine statistical significance of screening rates with alpha set to 0.05. Microsoft Excel and IBM SPSS Statistical Software for Windows were used for graph creation and statistical analysis.

Results

In the 6-month pre-implementation period 1,014 well child visits were completed that met criteria for PPD screening (newborn, 1, 2, 4, 6 months well child visits). Of these 1,014 patients who met criteria, only 452 (45%) patients were screened for PPD.

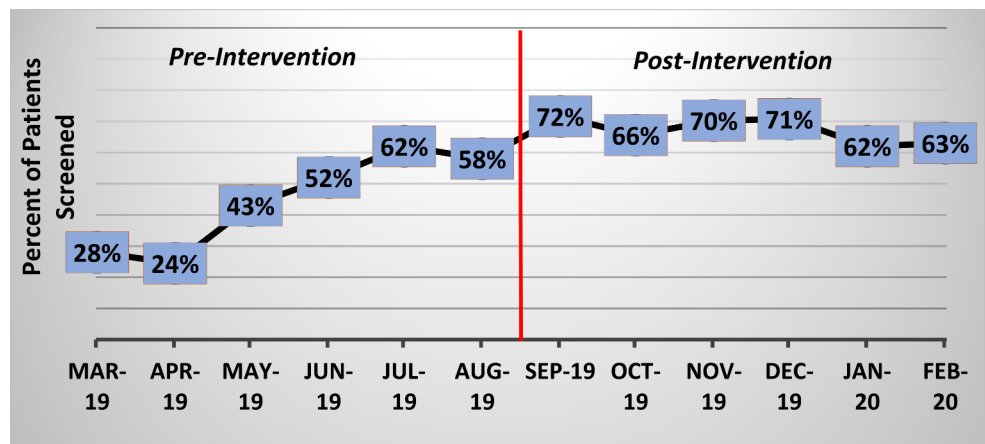
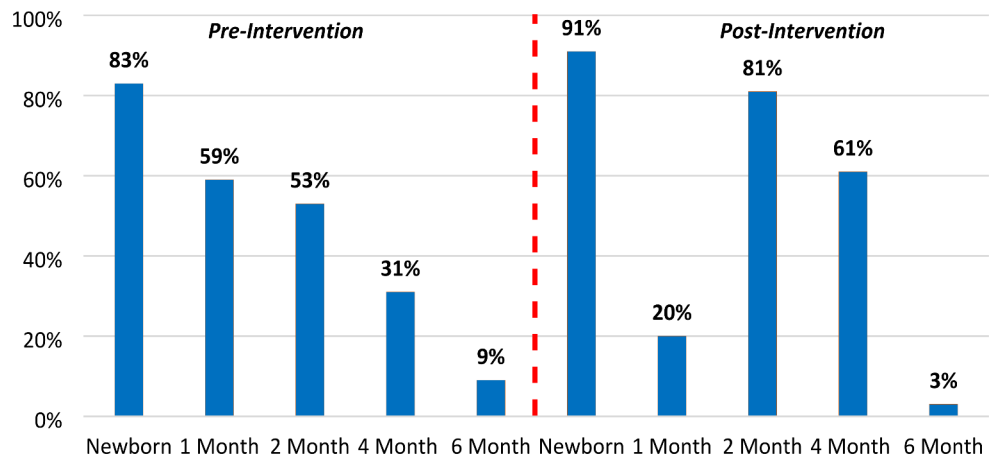
Over the course of this quality improvement project during the post-intervention period, a total of 832 newborn, 1, 2, 4 and 6-month well child visits were performed. Out of these 832 visits, 552 (66%) patients were screened for PPD. See Table 1 for demographic characteristics of patients screened.

As noted in Fig. 2, the percentage of eligible screened patients increased from 45% pre-implementation (452/1014) to 66% post-implementation (552/832), showing an overall percent increase in screening of 21%. This difference was found to be statistically significant; $X^2(1, N = 1846) = 87.3$, $p < 0.001$. The pre-implementation denominator is reflective of the same mothers potentially being screened more than once, as they could have been seen for more than one eligible well child visit during the 6 month period.

Table 1 Demographic characteristics of post-intervention sample (n=552)

Well Child Visit; n (%)	
Newborn	212 (38%)
1 Month	80 (14%)
2 Month	144 (26%)
4 Month	108 (20%)
6 Month	8 (2%)
Age of Mother years; mean (st dev)	
Less than 19; n (%)	36 (7%)
20–29	276 (50%)
30–39	230 (42%)
40 or higher	10 (2%)
Number of Pregnancies; n (%)	
1–2	267 (48%)
3–4	216 (39%)
5 or greater	69 (13%)
Number of Live Births; n (%)	
1–2	292 (53%)
3–4	210 (38%)
5 or greater	50 (9%)

Post-implementation, over the 6-month period, while the overall screening rate increased, a decrease in screening was seen at 1 month and 6 month well child visits with only 14% of eligible screenings (80/552) being completed at 1 month visits and 2% of eligible screenings (8/552) being completed

Fig. 2 Total percent of screening completed over time**Fig. 3** Percent of screenings completed by visit type

at 6 month visits. Newborn, 2 month and 4 month visit screenings showed improvement post-implementation with newborn screenings at 38% (212/522) completed at the recommended intervals. During this time, two-month screenings increased to 26% (144/522) while 4 months increase to 20% (108/522). As noted in Fig. 3, a bar chart demonstrates rates of screening completed based on well child visit. Most notably, out of all newborn, 2 month and 4 month visits, screening rates increased from pre to post intervention.

The rate of patients referred after positive screenings also increased following project implementation. Post-implementation, out of the 9% (50/552) of patients that screened positive for PPD, 22% (11/50) were referred. This was an increase from pre-implementation where only 9% (3/35) of the patients who screened positive were referred for services.

Discussion

Summary

Key findings of this project include the increase of routine EPDS screening, as the authors expected. While

some visits saw the improvements in screening, the project results showed that screening is most often missed at 1 and 6-month well child visits. These overall screening rates agree with Evans, Phillippi and Gee who state that pediatricians screen less frequently than other disciplines, including obstetrics and gynecology and family physicians [9]. On the contrary, pediatric providers and some family practice providers see postpartum mothers at each of the recommended PPD screening intervals; the recommended screenings correlate with the infant's well child visits as compared to a singular postpartum OB/GYN visit. The lack of expected improvement in screening rates at 1 and 6 months may have been impacted by the South Carolina Medicaid Quality Improvement initiative (QTIP) which began looking for screening to be completed at 1 month and earlier well child visits as well as 2- and 4-month visits at the same time this quality improvement project was implemented. This initiative reminded providers to screen at newborn visits but not always at the 1-month visit. It also ultimately omitted screening at 6-month visits. This could explain the decrease seen at 1- and 6-months visits as providers may have been less focused on screening at these recommended intervals as they were screening more often at newborn visits as well as 2- and 4-month visits to align with QTIP recommendations. Further education was provided to the CHWs and providers in hopes of addressing the overall lower percentages of EPDS screening at these recommended intervals.

Once low referral rates continued after project implementation, resources were expanded to increase identifying clinics in the community for those mothers who needed support for PPD. Clinics were identified and separated based on accepted insurance type, availability of a translator and transportation to help CHWs find clinical resources appropriate for patient referral. The authors identified several barriers to refer during implementation that correlate with barriers found in existing literature, including provider concerns with time constraints, lack of a referral process and identification of adequate mental health resources for this population [18]. Even with the provided clinic options for referral, a large barrier for this population, the lack of insurance coverage remained. Postpartum women must meet income, citizenship, or permanent resident requirements to be eligible for Medicaid which only covers postpartum care within the first 60 days [28], meaning women must pay out of pocket for medical visits related to PPD, be seen at a free clinic or health department where they are required to wait, sometimes for an extended period, and often if child-care is unavailable, they must wait with their infant [29]. Based on the collected data, providers were more likely to refer patients who scored in the moderate-severe range of the screening even though a score of 10 is the cutoff point, indicating a positive screening, in which the patient should

have been referred. Of the 11 patients that were referred 7 of them scored 16 or higher on the EPDS. Of the remaining patients who scored positive on the screening tool but were not referred, providers would recommend continued monitoring, may provide PPD resources or would make a note in their chart for follow up at next visit. Upon provider interview as part of a continuous plan, do, study, act (PDSA) process, a common practice in the clinic by providers was to offer a referral and only initiate the referral if a mother agreed to it. This may be another barrier to referral.

The CHWs were found to be contributory to increasing PPD screening and referral within this population. Since they are members of the community, CHWs are uniquely able to reduce the stigma associated with mental health and address patient concerns. Most of the patients at this site are either Spanish speaking only or are bilingual; having someone able to address their concerns and struggles as a new mother in their own language was found to be beneficial. Previous studies have demonstrated similar results with CHWs being an asset to increase screening practices [7, 30, 31].

Future implications include addressing barriers facing providers during the referral process for PPD treatment and creating additional referral resources for the Latinx population. At the time of this manuscript submission, the state of SC had enacted legislation to expand Medicaid coverage to postpartum women that meet the requirements around income, citizenship, or permanent resident alien status from 60 days to 1 year postpartum [32].

Implications for clinical practice include implementing earlier postpartum visits, expanding behavioral healthcare provider capacity to see women experiencing PPD, addressing providers reluctance to refer patients to mental health services, and increasing provider knowledge. Additionally, educating the nurses and medical staff to assist with PPD screening is critical for sustainability.

Clinics looking to implement this model must focus on coalition building with professional organizations serving expectant and postpartum mothers and infants to advocate for policy changes at the federal and state levels. These changes must include provision of mental healthcare services for PPD regardless of payor status and continued federal and state level funding of culturally sensitive community support programming around pregnancy, childbirth, and the postpartum period through programs. This would assist in mitigating some of the effects of social isolation before, during and after childbirth [33]. Additionally, including fathers in screening for PPD as well as parents of infants born with medical complexities are important areas for future research.

Strengths and Limitations

Strengths of this project include large sample size, administration support, staff buy-in, availability of CHWs, ease of using the EPDS screening tool and its availability in many languages.

This project was performed in a pediatric PCMH with a primarily Latinx immigrant population, which could limit the generalizability of the project findings. Since the CHWs were available for this project, this intervention may not be available in other clinics that don't have access to this resource. The limited number of CHWs (2) was also a factor as they were not always available to assist patients with the screening.

Conclusions

Postpartum depression is a serious problem that affects many new mothers and often goes unrecognized, with even higher prevalence among minority populations, specifically immigrant mothers. Pediatric providers caring for infants and mothers must prioritize screening for PPD to improve diagnostic rates and ensure effective referrals and treatment protocols are in place. This project demonstrates how CHWs can assist providers with PPD screening and behavioral health referrals by addressing patient barriers to care. Future studies focusing on the referral process for PPD treatment and resources for minority populations, are needed to assess the impact of screening on maternal and infant clinical outcomes.

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Declarations

Ethics approval and consent to participate This quality improvement study was evaluated by the Medical University of South Carolina's Institutional Review Board Guidelines and passed an expedited review.

Conflicts of Interest No conflicts of interest were identified during this planning or implementation of this intervention.

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