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Screening and Referring for Postpartum Depression in Pediatric Primary Care

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A Dissertation Submitted to The Graduate School at the University of Missouri-St. Louis

in partial fulfillment of the requirements for the degree

Doctor of Nursing Practice with an emphasis in Pediatric Nurse Practitioner

December

2020

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Abstract

Problem

Postpartum depression (PPD) can lead to increased risk of child abuse, delays in infant development, and increased medical costs (Earls et al., 2019). The American Academy of Pediatrics (AAP) recommends all mothers of infants 0-6 months be screened for PPD during well-child visits. Despite these recommendations, many pediatric offices have no PPD screening process.

Methods

This quality improvement project utilized a standardized tool to screen mothers of infants 0-6 months for PPD during their infants' well-child visits. Mothers who screened positive for PPD were offered referrals to treatment resources and given the opportunity to participate in two follow-up telephone interviews about their experiences.

Results

During the 12-week implementation period, 83.5% of eligible mothers (152/182) were screened for PPD. Fourteen mothers (9.2%) screened positive for PPD, and six of those individuals were interviewed by telephone. Of mothers interviewed, two felt they did not have PPD and did not seek treatment, three had been previously diagnosed with depression and were receiving services, and one planned to connect with treatment resources but had not done so five weeks after her initial screening. This mother identified barriers to treatment, including lack of time, transportation, and childcare.

Implications for Practice

Screening and referring mothers of infants for PPD is feasible in pediatric primary care and gives objective data that providers can use for follow-up counseling.

Postpartum depression (PPD) is a subset of perinatal depression, the most common complication related to childbirth in the United States. Symptoms of PPD are reported by 11% to 18% of women after childbirth (Earls et al., 2019). According to the American Academy of Pediatrics (AAP), PPD can lead to delayed infant development, increased risk of infant abuse and neglect, increased medical costs, breastfeeding discontinuation, and family dysfunction (Earls et al., 2019). Early recognition and treatment of PPD is essential to reduce the widespread impact of this mental health disorder. Screening for PPD with an evidence-based tool, such as the Edinburgh Postnatal Depression Scale (EPDS), is recommended by the American College of Obstetricians and Gynecologists (ACOG, 2015), Centers for Medicare and Medicaid Services (CMS, 2016), and the American Academy of Pediatrics (Earls et al., 2019).

The pediatric primary care clinician (PCC) is in an ideal situation to screen for PPD and connect at-risk mothers with services. Mothers are more likely to keep appointments for their child's medical care than their own (Emerson, Mathews, & Struwe, 2018). The AAP recommends pediatric PCCs incorporate routine screening for PPD during well-child visits at 1, 2, 4, and 6 months (Earls et al., 2019). By screening all mothers during well-child visits, those at risk for PPD can be identified early. Identification has no value, however, without an effective treatment referral process (Bauer, Ofner, Pottenger, Carrol, & Downs, 2017). It is essential for pediatric providers to know how to help mothers at risk for PPD access appropriate mental health services (Earls et al., 2019). By referring mothers who screen positive for PPD for treatment, mothers can be treated early, minimizing negative effects of this mental health disorder.

The AAP has recommended screening mothers for PPD in pediatric primary care since 2010 (Earls et al., 2010). An AAP study conducted in 2019 showed less than half of pediatric offices follow these recommendations (Earls et al., 2019). The purpose of this quality improvement initiative was to address this gap by implementing and evaluating a PPD screening and referral process in a pediatric primary care clinic, with an aim of screening at least 25% of eligible mothers. The following outcomes were measured: (1) rate of mothers screened for PPD, (2) rate of mothers identified to be at risk for PPD, (3) rate of mothers who self-report a follow-up to begin treatment for PPD, and (4) reported barriers to PPD treatment. This project attempted to answer the following questions: (1) How does screening mothers of infants 0-6 months old for PPD using the EPDS affect the identification of mothers at risk for PPD? (2) How does the identification of mothers at risk for PPD using the EPDS during well-child visits and the referral of these mothers to treatment resources affect the likelihood of these mothers to begin treatment for PPD?

Review of the Literature

In order to understand the scope of the problem, a comprehensive review of literature was performed using the Cochrane Library, Medline, and CINAHL. Key words “postpartum depression screening” were utilized in the Cochrane Library search. This search yielded four results, all irrelevant to this literature review. Keywords “postpartum depression screening” AND “pediatric OR child OR children OR infant” were utilized in Medline and CINAHL searches. Results (n = 288) were filtered to include only articles published in English between years 2014 and 2019. A total of 97 potential articles were identified. After removing duplicate articles, 49 abstracts were reviewed. Of these articles, 14 are included in this review. The remaining 35 articles were not relevant.

The AAP (Earls et al., 2019) published guidelines for postpartum depression screening and management in pediatric primary care in January 2019. This policy statement provides the foundation for this quality improvement project, as it recommends screening for PPD at 1-, 2-, 4-, and 6-month well-child visits. A descriptive, cross-sectional survey of pediatric primary care providers in Oregon found that only 29% of respondents followed AAP recommendations for PPD screening (Docherty, Najjar, Combs, Woolley, & Stoyles, 2019).

The literature supports use of a validated PPD screening tool such as the Edinburgh Postnatal Depression Scale (EPDS). A systematic review published in 2017 concluded screening for PPD using a validated tool during well-child visits led to significantly higher detection of mothers with depression (Zee-van den Berg, Boere-Boonekamp, IJzerman, Haasnoot-Smallegange, & Reijneveld, 2017). A randomized controlled trial evaluated the accuracy of the EPDS for identifying PPD among mothers, finding the EPDS is a highly accurate and effective screening tool for PPD (Venkatesh, Zlotnick, Triche, Ware, & Phipps, 2014).

Three publications reviewed were quality improvement projects with the goal of meeting AAP screening recommendations for PPD. Magonja and Schoening (2017) implemented a PPD screening using the EPDS at well-child appointments. Emerson, Matthews, and Struwe (2018) conducted a similar project but included an assessment of the practicality of complying with screening recommendations through a staff survey. This project concluded screening at AAP recommended intervals is feasible. Russomagno and Waldrop (2019) implemented a similar PPD screening and referral process, resulting in 47% increase in screening rate and 13% increase in referral rate.

Two studies attempted to determine if a relationship exists between demographic factors and PPD screening. One study found the majority of mothers who screened positive for PPD were African American, single, and did not have a college degree (Kallem, Matone, Boyd, & Guevara, 2019). A quality improvement project reported low-income mothers of Hispanic, male infants were more likely to screen positive for PPD (Sorg, Coddington, Ahmed, & Richards, 2019). As both of these studies had statistically insignificant findings, this is an area in need of further investigation.

An area of interest is mothers' treatment seeking behaviors. Bauer et al. (2017) interviewed mothers who screened positive for PPD about their treatment seeking behaviors. Less than half of study participants (36/73) reported seeking treatment. Reported reasons for not seeking treatment included lack of time, lack of transportation, frustration with the referral process, and perception that symptoms would improve without treatment. Reported demographic characteristics, including race, ethnicity, maternal age, marital status, education level, and number of children, were not predictive of treatment seeking behavior. Canty, Sauter, Zuckerman, Cobian, and Grigsby (2019) interviewed 17 mothers who screened positive for PPD. Four categories of factors – attitudes about personal health, family and friends, community, and the health care system – were identified as barriers or facilitators to treatment seeking behaviors. Kallem et al. (2018) found that of 263 mothers who screened positive for PPD, only 23 women (11.8%) received depression treatment. Puryear, Nong, Correa, Cox, and Greeley (2019) reported only 20% of mothers who screened positive for PPD completed follow-up appointments. Young et al. (2019) conducted interviews with 20 mothers receiving mental health care services embedded in a pediatric clinic. This qualitative study

recognized mothers face many barriers to mental health care and found offering maternal mental health services in pediatric offices facilitated treatment and improved outcomes.

Weaknesses related to study design limit available literature about PPD screening in pediatric primary care. Of note, there have only been three quality improvement projects published in recent years aimed at improving rates of screening. These projects confirmed screening for PPD using a validated tool is effective at identifying mothers at risk for PPD (Mgonia & Schoening, 2017; Russomagno & Waldrop, 2019; Sorg, Coddington, Ahmed, & Richards, 2019). Unfortunately, the majority of relevant literature available is low level evidence. More rigorous research in this area has not been implemented, therefore clinicians must rely on non-experimental studies and evidence from quality improvement projects for best practices. Furthermore, qualitative studies are limited by small sample sizes, homogeneous samples, and bounded by location.

Gaps in available literature are found in relation to demographic characteristics of mothers who screen positive for PPD and in referrals for treatment. Research attempting to define demographic factors that increase a mother's risk for PPD was not statistically significant (Kallem et al., 2019; Sorg et al., 2019). Research has been unable to definitively determine the cause of the disparity between mothers who screen positive for PPD and those who receive treatment (Bauer et al., 2017; Canty et al., 2019; Kallem et al., 2019; Young et al., 2019). Other areas needing further investigation include identifying barriers to PPD treatment and the efficacy of referring mothers to free community resources, online resources, and other non-traditional mental health services.

The Plan-Do-Study-Act (PDSA) framework was used to implement this quality improvement initiative. This framework is endorsed by the Institute for Healthcare

Improvement (IHI, 2019). In the first phase of the framework, project methods, aims, and outcome measures were established. Second, the intervention was implemented over a 12-week timeframe. Third, the data were analyzed to determine desired outcomes were achieved. During this phase, successes, failures, and unintended results were identified and evaluated. In the final phase of the PDSA cycle, the intervention was modified based on results before the next PDSA cycle (CMS, 2017).

Methods

Design

The quality improvement project was a mixed methods descriptive study utilizing prospective data collection. The intervention used current evidence-based practice recommendations from the AAP for screening mothers of infants for PPD and referring them for treatment (Earls et al., 2019).

Setting

The project was implemented in a private, faith-based pediatric primary care clinic with two pediatricians and one pediatric nurse practitioner. Clinic visits average 45-60 patients per day, and an estimated 75% of patients receive Medicaid benefits. The clinic is located in a large Midwestern metropolitan area with a population of 2.85 million (World Population Review, 2019). Prior to implementation of this quality improvement project, the clinic had no process in place for screening mothers for PPD.

Sample

A convenience sample of postpartum mothers of infants age 1-6 months were recruited to participate during their infants' well-child exams. Mothers who did not speak English or were unable to provide informed consent were included in the screening and

referral process but were not given the option to receive a follow-up telephone call. One hundred and fifty-two mothers were screened for PPD using the EPDS, and six mothers were contacted for follow-up conversations during the 12-week implementation period.

Procedures

During the 12-week implementation period (January 13, 2020 – April 3, 2020), all mothers of infants age 1-6 months were given the opportunity to participate in PPD screening during well-child visits using the EPDS. Mothers completed the EPDS screening on paper while waiting to see providers. Medical assistants scored the EPDS and notified the respective provider of the individual mother's scores, highlighting any positive screens. Scores on the EPDS range from 0-30, with a score greater than 9 considered at risk for PPD. Mothers who scored greater than 9 or identified any thoughts about self-harm were considered to have positive PPD screens. Providers addressed results of the PPD screening during well-child visits, offering to make referrals to mental health providers for mothers with positive screens and encouraging them to utilize the community resources identified in a handout provided at time of appointment check in. Mothers who screened positive for PPD were asked to consent to be contacted by telephone for quality improvement purposes. After the visit, providers documented the results of the EPDS screening in the child's medical record and billed for this screening service using CPT code 96161. Mothers who screened positive for PPD and gave consent were contacted by telephone 1-2 weeks and 3-5 weeks after initial positive screening.

Data Collection/Analysis

Data were collected every two weeks, including staff screening compliance, number of mothers who screened positive, and follow-up phone call information.

Descriptive statistics were used to analyze quantitative data. During follow-up phone calls, demographic data were collected, along with qualitative data about barriers mothers experienced connecting with treatment resources and their opinions about the PPD screening and referral process. Due to small sample size (n=6) and non-normal distribution of the sample, quantitative statistical analysis was not completed.

Approval Process

The Institutional Review Board (IRB) of the healthcare organization that oversees the clinic and the University's IRB approved this quality improvement project prior to initiation of procedures. Written consent to be contacted and full telephone informed consent were obtained from all mothers who agreed to participate. Project data were securely stored, complying with IRB requirements.

Results

During the 12-week implementation period (January 13, 2020 – April 3, 2020), 182 mothers were eligible to be screened for postpartum depression (PPD) using the Edinburgh Postnatal Depression Scale (EPDS) (Zee-van den Berg et al., 2017). Three mothers (1.6%) declined screening, and 27 (14.8%) were inadvertently not screened by staff, resulting in a total of 152 (83.5%) mothers screened for PPD over 12 weeks. Prior to implementation of this screening process, no mothers were screened for PPD by the pediatric clinic, yielding a PPD screening rate of zero. After implementation of this project, screening rates for PPD rose to 83.5% (152/182), rounded to 84% for purposes of communicating results to stakeholders.

Results are reported on the 152 mothers who were screened for PPD. Distribution of EPDS scores can be seen in Figure 1. Scores on the EPDS ranged from 0-21 (potential

score range on the EPDS is 0-30), with a mean of 4.16 and standard deviation of 3.97. A score less than 10 on the EPDS is considered a negative PPD screen, while a score of 10 or greater is considered a positive PPD screen. Fourteen mothers (9.2%) screened positive for PPD. Positive scores ranged from 10 (low risk for PPD) to 21 (high risk for PPD). Of the 14 positive screenings, eight individuals consented to be contacted for a follow-up interview. One mother screened positive twice during the data collection period and consented to be contacted both times. Six of the eight mothers who screened positive for PPD and consented to be contacted were interviewed by telephone. Three of these mothers were interviewed twice (1-2 and 3-5 weeks after initial positive screening), three were interviewed once (1-2 weeks after initial positive screening), and two were unable to be reached by telephone. All five mothers who did not consent to be contacted scored 10 or 11 on the EPDS (low risk for PPD). Additional attempts to contact mothers who screened positive for PPD were unable to be made during the last three weeks of data collection due to hospital IRB-mandated cessation of the project as a result of unforeseen, non-project related circumstances.

The six mothers interviewed provided qualitative data about PPD treatment seeking behaviors. Demographic data were collected from these six mothers during the interview process (Table 1). Two of the six mothers interviewed felt they did not have an issue with postpartum depression or anxiety, and therefore did not seek any treatment resources. One of these mothers said she felt she was “a little emotional” and “just dealing with typical new mom things,” but did not think she needed any professional help. Another mother said she had been “feeling down” and was interested in connecting with resources for PPD, but had not done so five weeks after screening positive for PPD.

This mother said she experienced many barriers to PPD treatment, including a lack of time, lack of transportation, and lack of childcare. One-half (3/6) of mothers interviewed were previously diagnosed with depression before becoming pregnant and were already receiving mental health services at the time of their PPD screening. These three women did not identify any specific barriers they experienced in connecting with mental health resources for PPD.

Discussion

Results of this quality improvement project validate current evidence-based recommendations for screening mothers for PPD at well-child visits using a standardized tool such as the EPDS. Just over 9% of mothers (14/152) screened during this process screened positive for PPD, compared to AAP findings that 11% to 18% of women experience PPD symptoms after childbirth (Earls et al., 2019). It is not known why this project had a lower rate of positive screens than estimated by the AAP. One possible explanation is mothers answering screening questions experienced response bias. One mother interviewed said “a lot of moms are afraid to speak up.” Another mother said, “the first time I got screened, I just put the answers they wanted to hear.” Therefore, mothers as a group may not answer the screening questions honestly.

The process implemented during this project appreciably improved the clinic’s PPD screening rates. Clinic staff willingly incorporated screening into their intake process during the project and continued the procedure after the implementation period was completed. When asked about the 27 mothers (14.8%) who were not screened, staff members said they simply forgot to give the screening tool to the mothers at check-in, typically because of busy workloads. In the future, a computerized prompt could be

incorporated into the check-in process to remind staff to use the screening tool. A second PDSA cycle is recommended to determine if this change would improve screening rates.

As only eight of the 14 of mothers who screened positive for PPD consented to be contacted for follow-up, and two of these mothers were unable to be reached by phone, demographic data and information about barriers accessing PPD treatment resources was limited by small sample size (n=6). Reasons for mothers declining to be contacted are unknown. Despite the small sample size, the interview process produced useful qualitative data that can inform further improvements to the PPD screening and referral process. It is worthwhile to note five of the six of the mothers interviewed (83%) did not have a college degree, were not married, had a yearly household income under \$50,000, and had other children in the home. These factors possibly contributed to additional stress for the mothers, putting them at greater risk for PPD. One of these mothers said she felt “overwhelmed trying to adjust to a new lifestyle.” while another said she “felt anxious before the baby, just more intense now.” The mother who had a college degree, was married, and had a yearly income over \$100,000 had no other children at home and did not agree with screening positive for PPD. She experienced some anxiety making decisions, but thought her feelings were “typical new mom things.” More data are needed to better understand how demographic factors influence mothers’ risks for PPD. A noteworthy finding is that three of the six mothers interviewed were previously diagnosed with depression, highlighting the need to recognize previous mental health diagnoses as significant risk factors for PPD.

During phone interviews, mothers were asked to share feelings about the PPD screening process. All six mothers interviewed felt screening for PPD was valuable but

had suggestions to improve the process. Three of the six mothers commented on the importance of personal interaction during the screening process. One mother said, “Some one-on-one time with an actual person” would be more beneficial than a paper screening. Another mother said, “It’s easy to check whatever boxes you think you should check. It would be more helpful if the pediatrician asked questions verbally.” A third mother had similar feelings, adding, “The vibe and approach that caregivers have is important too.” She said it is important for mothers to feel they are “Talking with someone who is not judging them.” All of these comments suggest that although screening mothers using a written standardized screening tool is valuable, it is important for pediatric providers to talk with mothers about PPD and express concern about mothers’ feelings during visits.

This project proposes two recommendations for further study. First, it would be beneficial to study whether or not different rates of positive PPD screens are identified by completing the PPD screening verbally with a provider instead of on paper. A component of this study would include mother and provider satisfaction with the process, including length of time dedicated to data collection and follow-up during provider visits. Another area for further study is screening for postpartum depression among fathers and other primary caregivers. During the project implementation period, one father accidentally filled out the EPDS himself and was found to be at risk for PPD. A recent statement published by the AAP reports the prevalence of PPD among fathers at 2% to 25% and recommends pediatric providers assess the mental health of all new parents, including fathers (Walsh, Davis, & Garfield, 2020). Therefore, future studies and quality improvement projects should address a screening process for all new parents.

Conclusion

Screening mothers of infants ages 1-6-months of age for PPD in pediatric primary care is a beneficial clinical practice. Use of an evidence-based screening tool such as the EPDS standardizes the screening process, as evidenced by this quality improvement project. Before implementation of this project, no mothers were screened or identified as at risk for PPD at the pediatric primary care office. After implementation of this project, 83.5% of mothers were screened for PPD, and 9.2% of those screened were found to be at risk for PPD. It is important for providers to have an open and honest conversation with all mothers of infants about PPD and take time to reinforce the need to seek treatment resources for mothers who screen positive for PPD. This provider follow-up of the screening process would complement a second PDSA cycle.

This project successfully improved the postpartum depression screening and referral process in the pediatric clinic. The staff were able to seamlessly incorporate the screening and referral process into their daily workflow, a protocol they intend to continue. Findings from this quality improvement project reiterate conclusions from recent literature that PPD screening using the EPDS is feasible and beneficial in pediatric primary care (Emerson, Matthews, & Struwe, 2018; Magonia & Schoening, 2017; Russomagno & Waldrop, 2019). Identifying mothers at risk for PPD through this screening and referral process can lead to a decrease in negative effects of PPD, improving long-term child and family physical and mental health.

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Table 1: *Demographic characteristics of mothers positive for postpartum depression who completed screening and follow up calls (n=6).*

Mother's Age >30	3/6
Baby's Age >4 months	3/6
Other Children at Home	5/6
Work Outside the Home	2/6
Married	1/6
African American Race	2/6
Caucasian Race	4/6
College Degree	1/6
Yearly Household Income <50,000	5/6

Figure 1: *Edinburgh Postnatal Depression Scale score distribution table*

