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Screening for and preventing perinatal depression

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Abstract

New York City (NYC) public hospitals recently mandated that all pregnant women be screened for depression, but no funds were allocated for screening or care coordination/treatment, and research suggests that unfunded mandates are not likely to be successful. To address this, we implemented an on-site depression prevention intervention (NYC ROSE) for positive depression screens among pregnant, mostly Black and Hispanic, lower-income women in one public hospital. In this paper, we used Aarons' implementation model to describe the successes and challenges of screening and intervention. Patient tracking sheets and electronic medical records were abstracted. Key informant interviews and an informal focus group were conducted, and staff observations were reviewed; common implementation themes were identified and fit into Aarons' model. We found that a lack of funding and staff training, which led to minimal psychoeducation for patients, were outer context factors that may have made depression screening difficult, screening results unreliable, and NYC ROSE enrollment challenging. Although leadership agreed to implement NYC ROSE, early involvement of all levels of staff and patients would have better informed important inner context factors, like workflow and logistical/practical challenges. There was also a mismatch between the treatment model and the population being served; patients often lived too far away to receive additional services on site, and economic issues were often a higher priority than mental health services. Screening and interventions for perinatal depression are essential for optimal family health, and a detailed, thoughtful and funded approach can help ensure effectiveness of such efforts.

Keywords

postpartum depression; perinatal depression; primary care; depression treatment; depression screening

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Author Contributions

BDK: designed and executed the study and wrote the paper. JAG: designed and executed the study and contributed to the writing of the paper. RG: collaborated with the design and execution of the study, and contributed to the writing of the paper. MP: collaborated with the design and execution of the study, and contributed to the writing of the paper. KEH: collaborated with the design and execution of the study, and contributed to the writing of the paper. SMH: designed the study, collaborated with the execution of the study, and contributed to the writing of the paper.

INTRODUCTION

Depression affects approximately 20% to 40% of mothers with young children (Chaudron et al., 2004; Field, 2010), with rates highest among women with low socioeconomic status (Goyal et al., 2009; Lorant, et al., 2007). The negative consequences of postpartum depression are well established, and include insecure attachment, unsafe parenting practices, increased emergency care for infants, and poor cognitive and mental health outcomes in children (Field, 2010; Murray et al., 2010). However, although treatments for both prenatal and postnatal depression have been found to be effective (Fitelson et al., 2011; Misri & Kendrick, 2007), most women with perinatal depression go undetected (Evins et al., 2000; Goodman & Tyer-Viola, 2010). Data show that screening improves the detection of depression in primary care settings (Chaudron et al., 2004; Evins et al., 2000); thus, numerous professional organizations have issued recommendations for depression screening both prenatally and postnatally, but all stop short of specifying clear guidelines for what constitutes appropriate follow-up and treatment (Committee on Obstetric Practice, 2015; Earls, 2010; Sui & The U.S. Preventive Task Force, 2016).

Several policy initiatives have responded to these recommendations by encouraging healthcare providers to screen pregnant and postpartum women, and either treat on-site or refer to services. New York City (NYC) THRIVE is a Mayoral initiative that aims to “screen and treat all pregnant women and new mothers for pregnancy-related depression” among participating hospitals and clinics, as a part of a city-wide mental health strategy (City of New York, 2017). As of this writing, NYC THRIVE was working with 29 hospitals, including all public hospitals in NYC, to screen and treat (or refer) all women in their care. As part of this initiative, Health + Hospitals, which runs NYC’s public hospitals, pledged that depression screening and connection to care would be universal in its hospitals (reaching 78% of all NYC births) by the end of 2017 (Bologna, 2017). When this perinatal screening initiative began, it relied on hospitals’ existing resources for both screening and providing/referring to effective treatment.

Implementing standardized screening and treatment guidelines across the city is an important effort. However, adding a new unfunded screening and treatment mandate to an already overburdened system can be challenging (Yoo et al., 2007), and the literature shows that screening without staff supports and follow-up is not effective at increasing access to care or improving outcomes (Byatt et al., 2015; Kozhimannil et al., 2011). In 2005, for example, New Jersey established the New Jersey Postpartum Wellness Initiative to raise awareness about postpartum depression and to increase access to clinical services. In 2006, it became the first state to require postpartum depression screening among women who had recently given birth. However, the new policies did not include financing for screening services, nor did they address patient-level barriers to treatment. As of 2007, New Jersey’s policies were not found to have improved the detection or treatment of postpartum depression among Medicaid recipients (Kozhimannil et al., 2011).

The extant literature suggests that the ability of primary care providers to screen and refer patients to on-site services may be crucial for successful implementation of perinatal mental health services, as many depressed mothers will not otherwise follow-up with referrals

(Marcus et al., 2003; Schulberg et al., 1993). Miller et al. (2009) described the implementation of a stepped-care model in which pregnant women were screened for depression and referred for mental health treatment within the prenatal care setting. Almost all (98.6%) women who screened positive accepted the co-located formal diagnostic assessment, which the authors attributed to lack of stigma, ease of co-located care, and minimization of financial barriers to mental health care.

Some initiatives implemented on-site have been shown to reduce depressive symptoms among women at risk for postpartum depression. For example, *Reach Out and Stay Strong Essentials for new mothers* (ROSE), an evidence-based treatment based on interpersonal therapy (IPT) principles, aims to prevent postpartum depression among low-income pregnant women through psychoeducation on depression, coping skills, and effective utilization of social supports. ROSE has been evaluated in three randomized controlled trials with low-income women receiving prenatal care, and was effective in preventing depression in women who had recently delivered (Zlotnick et al., 2001, 2006, 2016). In the most recently published study, 31% of control participants were diagnosed with postpartum depression at 6-months post-delivery, compared to 16% in the intervention group. This effect was maintained at 12 months post-delivery (40% of controls vs. 26% of intervention participants) (Zlotnick et al., 2016).

In an attempt to maximize benefits from the new screening protocols, we worked with providers at one large NYC public hospital to implement an adapted version of ROSE among at-risk women who screened positive for depressive symptoms during pregnancy (NYC ROSE). In this paper, we use an implementation model described by Aarons et al. (2011) to outline the successes and challenges involved in both screening low-income pregnant women for depressive symptoms and implementing a preventive intervention at a NYC public hospital.

METHOD

Participants

The intervention took place at the women's health clinic in a NYC public hospital that has more than 500,000 ambulatory care visits per year. The participants in this implementation were the 559 women who attended their first prenatal appointment at the hospital clinic between September 2016 and February 2017. More than half of the women identified as Hispanic (55.5%), 11.6% as Black, 6.1% as White, 4.3% as Asian, and 22.5% as another race or ethnicity. The mean age of the participants was 30 (SD=6.09); women under the age of 18 attend a separate, adolescent prenatal clinic. More than three-quarter (78.5%) of the women used Medicaid (government-funded, needs-based health care) to pay for services, and 14% paid for services themselves (self-pay) (Table 1).

Procedure

As part of NYC Thrive and a NYC Health + Hospitals initiative, depression screening with the PHQ-9 during the first prenatal visit at the clinic began in September 2016. Women were handed the instrument (in either English or Spanish) with other medical forms when they

registered and asked to complete it alone in the waiting room. Patients were told to keep the form and give it to social work staff who would review it with them during the social services intake. Women who met eligibility criteria were referred to NYC ROSE.

The NYC ROSE implementation discussed here occurred between September, 2016 and February, 2017. Eligible women endorsed depressive symptoms (PHQ-9 score >4 and <19), and were at least 18 years old, English- or Spanish-speaking, and in their second trimester. Women who indicated they were suicidal (PHQ-9 item 9 >0) or severely depressed (PHQ-9 score >18), as well as those who were currently experiencing domestic violence, had been previously diagnosed with a serious mental health condition, or had an active substance use disorder, were ineligible for NYC ROSE and triaged to a higher level of care.

NYC ROSE was implemented in an individual format in order to maximize scheduling flexibility and meet the needs of women seeking care at the hospital. Sessions were offered in either English or Spanish by *prenatal educators* to women at the time of their prenatal appointments to reduce the travel burden on participants. The 5 prenatal educators were volunteer students, professionals and peer-partners. They were trained with over 10 hours of classroom and didactic sessions.

Measures

The PHQ-9 has been shown to be a valid and reliable measure of depression severity, and its brevity makes it a useful instrument (Kroenke et al., 2001). The instrument has also been shown to have high sensitivity (85%) and specificity (84%) for depression diagnosis, as well as sub-diagnosis (75% and 88%, respectively) among pregnant women (Sidebottom et al., 2012). In this study, both English and Spanish versions of the instrument were administered.

We chose the Aarons et al. implementation model (2011) because it is widely recognized that implementing new interventions is heavily influenced by both clinical practices and implementation processes (Fixsen et al., 2009; Palinkas et al., 2008). In fact, many programs designed to improve outcomes have not been widely adopted due to implementation challenges (Aarons et al., 2011). The model focuses on outer and inner context variables in four implementation phases: exploration, adoption/preparation, active implementation and sustainment. In this paper, we focus on the “active implementation phase,” when the intervention is put into place.

Data Analyses

Data on the prevalence of PHQ-9 screening in the clinic and PHQ-9 scores came from electronic medical records and were provided by NYC Health + Hospitals. Data on the contacts with participants came from study tracking sheets, which were updated each time staff were in the field. These data were compiled using Microsoft Excel.

Information on reasons for non-participation came from staff observations and notes taken after conversations with participants. In addition, staff took notes on the implementation process throughout the study, and the PI held an informal focus group with staff to further clarify the positive factors and challenges that influenced the process. Thematic analysis was used as a method for identifying, analyzing and reporting patterns within data (Braun &

Clarke, 2006). All notes were reviewed by study staff with previous qualitative experience. After several group discussions, the reviewers reached consensus and common themes were identified. Interviews with key informant clinic social work staff were also conducted and, similarly, common themes were documented.

RESULTS

Outer Context

Outer context factors include items such as funding and inter-organizational networks (Aarons et al., 2011). In our case, important outer barriers included a lack of resources available to train staff on how to administer the PHQ-9 or discuss the benefits of NYC ROSE with patients. As a result, staff (both administrative staff and providers) did not consistently describe the instrument to patients, assure patients about confidentiality, explain the importance of the PHQ-9 to identify depressive symptoms, interpret the measure's findings, or describe the help available through NYC ROSE. For example, social work staff members had not received training regarding how to interpret endorsements of poor sleep or appetite changes, which are normative during pregnancy; this may have impacted the results of the screenings and referrals to NYC ROSE.

Although the external NYC ROSE collaborators worked extensively with clinic administrators, who saw great potential value in the program, NYC ROSE staff did not include front-line staff or patients in planning and, consequently, created inappropriate and inefficient processes. For example, women were meant to be referred to NYC ROSE after the PHQ-9 screen at their first prenatal visit, which tended to be in the first trimester. This resulted in serious workflow issues as at-risk women were told to "come back" when they reached their second trimester and would be NYC ROSE-eligible. Consequently, NYC ROSE staff were not able to capitalize on the immediacy of the on-site service, which has been identified as an important variable in implementation (Miller et al., 2009).

Inner Context

Inner context factors include items such as organizational characteristics (structures and processes that exist and/or take place in organizations) and individual adopter characteristics (Aarons et al., 2011). In our case, due to a lack of communication between clinic administrators and front-line staff, staff were not prepared for workflow and responsibility changes associated with the screening tool and intervention, resulting in poor adherence to the screening and referral protocol. In fact, throughout the intervention, NYC ROSE was revised several times in an attempt to more effectively fit into the clinic workflow.

Further, because of insufficient clinic staff, women completed the PHQ-9 on their own and did not receive psychoeducation about the tool or postpartum depression until meeting with the social worker, which often occurred hours into their prenatal visit. As one social worker explained, women were not likely to comply if they felt they were completing a form "so we can find out if you're depressed." Consequently, many women did not complete the PHQ-9 by the time they saw the social work staff, who were often too overburdened to administer the instrument during their sessions. From September 2016 to February 2017, only 31% of

patients completed the PHQ-9 on their first prenatal visit according to hospital electronic medical records, although the percentage did increase over time (from 17.4% in September to 56% in February).

Organizational structure was also a barrier to NYC ROSE implementation. The program relied on student and unpaid volunteers as prenatal educators. Although the volunteers attended extensive training and were dedicated to the intervention, they often faced scheduling conflicts. As a result, NYC ROSE staff did not have a consistent presence in the clinic, which impeded full integration and acceptance into the workflow.

An additional obstacle involved the long wait times to see providers, ranging from 20 minutes to 2 hours. Many women were afraid of missing their appointments, and were reluctant to leave the waiting area to speak with an NYC ROSE educator. It was also difficult to schedule NYC ROSE sessions after appointments; many patients travel great distances to get to the hospital and were not open to staying after medical appointments for additional services. As a result, the way NYC ROSE was administered was an inappropriate structural fit for this clinic.

Individual patient characteristics also influenced the success of screening implementation. Interviews with clinic social work staff suggested that patients rarely acknowledged that stress and mental health were concerns in their lives on screening tools; many experienced extreme stigma and were not used to having the freedom to speak about such issues. In addition, according to one social worker, “many patients believe that the minute they disclose a mental health issue, child welfare will come and take their children away.” In fact, the social workers noted that women who originally did not endorse items on the PHQ-9 often would disclose symptoms of stress and concern after they built a level of trust with the provider. These factors may have contributed to the fact that only 15% scored 10 or above on the PHQ-9 over the entire time period (ranging by month from 6.3% to 23.8%).

Even women who disclosed multiple stressors often declined the NYC ROSE referral. According to the social work staff, many patients could not commit to coming back to the hospital for continued services. Others felt that they could “handle the stress,” or that “the church would help with that.” Still others were not comfortable admitting that their symptoms might lead to a mental health condition. Of the 30 eligible women who *were* referred to NYC ROSE in this time period, 1 woman agreed in person to participate and 11 women agreed after being contacted by phone. However, of those 12 women, only 2 ultimately began the intervention, and each only received 2 sessions (out of 5).

There were also strengths in this environment that aided in the implementation of this intervention. At the individual adopter level, the providers in the Women’s Health Clinic were very committed to their patients (many of whom had high levels of psychosocial stressors), which greatly facilitated implementation. The perinatal screening mandate and NYC ROSE were highly congruent with providers’ goals and culture, even if they were somewhat incongruent with hospital systems and procedures. Some of the providers worked in a receptive sub-context, meaning that they were open to and ready for change, and supportive of new policies. These providers were champions of both screening and NYC

ROSE. Other providers were supportive of the intervention, but did not have the time or motivation to actively assist in implementation, perhaps because of a lack of communication from leadership or necessary shifts in workflow.

DISCUSSION

Implementing standardized screening and treatment guidelines across the city is an important effort. However, similar to previous research (Biggar, 2001; Kozhimannil et al., 2011), we found that an unfunded mandate may be insufficient to ensure staff capacity and adequate implementation in a busy urban women's health clinic. Given the early stages of the screening initiative, the hospital had some notable successes, but funding may be needed to hire new staff to implement a new protocol, train and supervise all involved staff, and ensure a dedicated staff person to manage changes in workflow. Furthermore, champions at every level should be identified, so that all providers have the same understanding of the context in which the screening is conducted.

Providers in our setting screened an impressive 56% of new prenatal patients by February 2017, only 6 months after the inception of the initiative. In addition, the social work staff were committed to the process and open to learning from their experiences thus far. However, there are several issues that, if addressed, could increase the usefulness of this initiative. For example, it is unclear if other services were compromised in the screening process since the staffing levels were not increased; this is an important component that deserves further exploration. In order to enhance screening compliance without impacting other services, additional personnel and training resources should be allocated, and a modified workflow should accommodate the screening practice. In fact, Kaiser Permanente recently showed that it could achieve a 96% screening rate among pregnant and postpartum women using an approach that identified and used best practices, identified champions and educated clinicians, used data that drove performance, and streamlined the office workflow (Flanagan & Avalos, 2016).

We found a similar rate of PHQ-9 positive screens as a recent study of low-income pregnant women seeking prenatal care at Federally Qualified Health Centers (Sidebottom et al., 2012). However, there is evidence to suggest that economically disadvantaged and minority women are at greater risk for PPD compared to the rest of the population (Goyal et al., 2009; Lorant et al., 2007). Research, for example, has found the average PHQ-9 score among low-income women to be 10.6 (SD = 6.5) (Kneipp et al., 2010), which is not consistent with our finding of 15% scoring 10 or above. It is worth exploring whether differential ethnic makeups of the samples, and the cultural adaptability of the instrument, could account for some of this difference.

As our social worker interviews suggested, the lower scores might be due to the stigma still attached to mental health issues, particularly in certain immigrant communities prevalent at this hospital (Derr, 2015; Nadeem et al., 2007), as well as the lack of psychoeducation provided and trust garnered. Similar to findings in the literature (Canvin et al., 2007), clinic social work staff noted that low-income pregnant populations may be particularly sensitive to answering these types of screenings honestly as they fear the negative repercussions, such

as having a child removed from their care. In addition, many patients at this clinic struggle to secure basic needs such as housing, food, and employment, so they may be more focused on solving tangible problems than identifying and addressing mental health issues. Efforts to both educate patients on the importance of addressing depressive symptoms and develop trusting relationships with patients before asking them to answer sensitive questions might lead to more accurate results; in addition, it is essential that patient education and relationship-building be both culturally- and linguistically-appropriate.

Even with accurate depression screening scores, the literature suggests that screening without staff supports and follow-up does not improve outcomes (Byatt et al., 2015; Kozhimnir et al., 2011), and that on-site services may be crucial for successful implementation of perinatal mental health services, as many depressed mothers will not otherwise follow-up with referrals (Marcus et al., 2003; Schulberg et al., 1993). We attempted to address these issues by offering on-site mental health services (NYC ROSE), and encountered several challenges to doing so. Having leadership agree to implement a new intervention is a necessary but not sufficient component of introducing a new program. The support and involvement of all levels of staff and patients were necessary to modify the workflow effectively, identify logistical and practical challenges, and ultimately ensure success. In addition, even though external staff were provided to implement NYC ROSE, they were volunteers. Ideally, paid professionals or para-professionals who are part of clinic staff should be trained to implement interventions in order to maximize flexibility, availability, and integration into workflow.

There were also a few notable obstacles encountered with regard to patient acceptability. Many women did not identify stress or mental health concerns as a priority; they focused more on tangible concerns, such as housing. Psychoeducation should be part of any screening and intervention effort to help women assess whether addressing these less tangible issues might help with their day-to-day challenges. Alternatively, it may be prudent to introduce this type of service only once other more pressing psychosocial issues have been addressed.

Finally, even for women who were interested in NYC ROSE, participation was difficult. Most patients did not live near the clinic, and travelled far to receive their prenatal care. Implementation teams would benefit from meeting with patients prior to launching a new program to better understand their specific needs and situations. Other, more useful models in this type of hospital might be to form strong linkages with follow-up services in other NYC boroughs, pilot a version of ROSE through an on-line electronic app, or implement ROSE through home visits or by telephone sessions.

Limitations and Future Research

This analysis has several limitations. Our data were derived from non-standardized field notes and were not systematically collected. Future studies would benefit from systematic collection of data. Similarly, while we did conduct interviews to better understand different players' perspectives, we did not speak to all parties and can therefore not generalize beyond our participants. In addition, we do not have pre-post data for women who started the program because post-intervention measures were only scheduled to be collected after the

completion of the sessions, and no women reached that point. Further, adolescents and teens did not attend this clinic, and although all clinic patients were given the PHQ-9, those who were deemed to have a high level of clinical need were excluded from this study. Unfortunately, the clinic workflow did not include a mechanism to capture the number of women excluded for this reason, but previous, exploratory work at this clinic has shown that only a small percentage of women would be expected to be excluded due to high clinical need (about 6.5%). Nonetheless, we cannot speak to the implementation process among all women. Finally, the data on screening and PHQ-9 scores came from electronic medical records, which may be inaccurate due to documentation errors.

This study is limited in what conclusions can be drawn, and future research should be conducted using more comprehensive and systematic data collection. Nonetheless, it is useful to consider whether perinatal screening mandates are enough. Our experience suggests that unfunded mandates are not likely to succeed as workflow inefficiencies may lead staff to feel overburdened, potentially resulting in inaccurate screening results, strained referral processes, less effective interventions, and compromises in existing clinical services. Further, treatment models need to match the population being served; alternative models should be examined to meet the needs of the needs of specific populations. While our study focused on perinatal depression, these findings may also apply to the identification and treatment of other mental health conditions among pregnant women. Screening and interventions for perinatal mental health conditions are essential for optimal family health; a detailed and thoughtful approach can help ensure effectiveness of such efforts.

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Table 1

Description of women attending their first prenatal appointment at the hospital clinic, September 2016 – February 2017

	N	%
Total	559	
Race/ethnicity		
Non-Hispanic White	34	6.1
Non-Hispanic Black	65	11.6
Hispanic	310	55.5
Asian	24	4.3
Other	126	22.5
Age		
<18	0	0
18–24	109	19.5
25–34	310	55.5
35–44	137	24.5
45+	3	0.54
Health Insurance		
Private	37	6.6
Medicaid (Government-funded, needs-based health care)	439	78.5
Self-pay	79	14.1
Other	4	0.72