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Research Article

Identification and Management of Perinatal Depression: Differences between Healthcare Providers

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ABSTRACT

Objective: Pilot data was collected to examine providers' beliefs, knowledge, self-efficacy, barriers, and practices related to perinatal depression and how they may differ across provider types.

Background: High prevalence and detrimental impact of depression during pregnancy and the first year postpartum (i.e. perinatal period) on maternal and child health outcomes highlights the need for improving diagnosis and treatment during this critical period. Healthcare providers play a significant role in helping to identify and manage perinatal depression.

Methods: Ninety-nine providers (e.g. physicians, nurses, mental health workers, public health practitioners) who provide care to pregnant women in Colorado completed a 64-item online survey.

Results: Although 94% of providers reported it was their responsibility to recognize perinatal depression, variations across specialties with regards to responsibility to treat were found. Most providers (91%) reported use of a screening tool for depression, 60% of providers provide counseling on perinatal depression, and 80% of providers refer patients for treatment of perinatal depression on at least a monthly basis. Significant differences in knowledge, self-efficacy, current practices, and perceived patient barriers were found across provider specialties.

Conclusion: These findings highlight the need for expansion of online training programs to increase awareness of mental health resources in the community, improve confidence related to diagnosis and treatment of perinatal mood disorders, and to enhance communication between mental health specialists and healthcare providers in order to effectively identify and manage maternal depression.

Introduction

Depression during pregnancy is common among women, with prevalence estimates ranging from 8-12% for minor and major depressive disorder [1, 2]. Prenatal depression is linked to postnatal depression, pregnancy complications, increased medical care, and compromised fetal and child outcomes [2-4]. Comorbidity of depression and anxiety during pregnancy is also common, with as many as half of cases occurring together [5]. Past studies suggest that the interaction between the chronicity and the severity of maternal depressive symptomatology increases the risk of offspring' developing behavioral and learning problems later in life [4]. As such, there is a clear need to enhance the early identification and treatment of prenatal depression.

Women in the perinatal period (i.e. pregnancy throughout one year postpartum) have expressed a need for help in identifying and treating

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their depressive symptoms [6]. Oftentimes healthcare providers are the sole source of mental health resources and care for women, indicating a significant role of healthcare providers in helping to identify and manage (e.g. treat and/or refer) perinatal mood disorders [7]. National guidelines and recent legislation underscore the need for improvement in the detection and treatment of mood disorders in the perinatal period [8]. Currently, 25-50% of primary care providers fail to assess (e.g. discuss, provide information, or screen), treat or refer women at-risk for depression in the perinatal period [9, 10]. Limited time and training are often cited as barriers to providing care [9, 11]. Less is known about other provider types (e.g. physician assistants, nurses, social workers, public health educators) that deliver care to pregnant women. The present research intends to address this gap in the literature by conducting a descriptive study to evaluate beliefs and current practices regarding the assessment and treatment of perinatal depression across a variety of providers.

Materials and Methods

I Research Design

We conducted a descriptive, pilot study with a convenience sample of 99 healthcare providers (i.e., obstetricians, family medicine practitioners, physician assistants, certified nurse-midwives, registered nurses, nurse-practitioners, social workers, counselors, case workers, health educators, registered dieticians). We recruited participants throughout the state of Colorado, and they completed the online survey. All study procedures were approved by a University-affiliated Multiple Institutional Review Board.

II Data Collection

Providers were invited to participate in the study if they were administering care to pregnant women in Colorado. We used an informational flyer with an open link to the pre-survey sent via email to recruit providers. We distributed the flyer through a variety of 23 email listservs identified by a partnership with the State Health Department. Listservs included public health agencies, health departments, primary care offices, and a variety of maternal and child health focused advisory committees. Due to budget constraints and the pilot nature of the study, we limited the sample to the first 100 providers who completed the consent form and survey. Once the link was accessed, eligible providers were asked to complete an online consent form (e.g., described the purpose of the study, criteria for participation, confidentiality measures, incentive details, and contact information for the principal investigator and study coordinator) followed by the 64-item online survey. We compensated providers with a $15 gift card upon completion of the online survey.

III Survey

The online survey was based on the 64- items from the Management of Maternal Depression Inventory, which includes subscales to assess providers' knowledge, attitudes, beliefs, perceived barriers current practices, previous training, and patient-provider communication quality pertaining to the management of perinatal mood disorders [9]. This scale has demonstrated good internal consistency in past research, with confirmatory factor analysis of its structure and subscales demonstrating good fit [9, 12]. Attitudes toward managing depression focused on the providers' perceived level of responsibility toward treating and diagnosing maternal depression (e.g., "Recognizing maternal depression is my responsibility"). Providers' knowledge on DSM-5 criteria was assessed as well as providers' beliefs pertaining to maternal depression such as "depression is normal during pregnancy" or "depression will go away on its own". Providers' level of confidence (self-efficacy) toward managing maternal depression was also measured by items such as, "How confident are you with diagnosing maternal depression?".

Providers were asked to describe their current management practices (i.e. assessing, treating/referring) of perinatal mood disorders as well as their previous training on diagnosing and treating perinatal mood disorders. The average time for completion of the survey was approximately 15 minutes. We asked participants to rate the extent of their agreement with series of statements about their beliefs, attitudes, self-efficacy, perceived barriers, and previous training. Responses were measured on five-point Likert-type scales (i.e. strongly disagree, disagree, neutral, agree, strongly agree). We also asked participants to rate their current practices regarding the management of perinatal depression on a five-point Likert scale (i.e. never, rarely, monthly, weekly, daily).

IV Data Analyses

We used REDCap (Research Electronic Data Capture) electronic data capture tools hosted at the respective University to collect and manage survey data. REDCap is a secure, web-based application designed to support data capture for research studies [13]. We explored individual survey items and their Likert scale responses as continuous variables and as dichotomous variables that reflected percent agreement (i.e., agree or strongly agree); Dichotomous variables reflecting percent agreement (i.e., % agree or strongly agree) are presented in these results for ease of interpretation. We performed chi-square tests of independence of individual survey items using the dichotomized outcomes to examine the relationship between type of provider (1, physicians and physician assistant; 2, nurse practitioners and midwives; 3, mental health workers; 4, public health educators and practitioners) and percent agreement. We used SPSS for all our analyses [14].

Results

I Sample Characteristics

The sample of healthcare providers (n=99) comprised 23 physicians (obstetricians, family medicine practitioners), 48 nurses (registered nurses, nurse midwives, nurse practitioners), 15 mental health workers (social workers, counselors, case workers, psychiatrists), and 13 public health practitioners (health educators, registered dieticians). One of the 100 providers was subsequently dropped from the study due to lack of direct contact with patients. The remaining sample was homogeneous. Almost all the providers were female (97%), and the racial composition of the sample was 89% white, 3% African American, 3% Asian, 1% American Indian and 4% other. Fifty-five percent of healthcare providers practiced in local urban areas, 23% in suburban areas, and 20% in rural areas throughout Colorado. Almost half of providers (45%) have

been practicing for over 10 years and 17% of providers have been practicing for less than one year.

II Providers' Attitudes, Beliefs, and Efficacy in Relation to Maternal Depression

Table 1 shows detailed description of healthcare providers' attitudes, beliefs, and efficacy in relation to perinatal depression. Almost all the providers (94%) reported that they believed it was their responsibility to recognize maternal depression. Approximately two-thirds (62%) of providers reported that treating maternal depression was their responsibility, with physicians reporting the highest agreement (96%) and public health practitioners the lowest (23%) ($p<.01$). Similarly, more than half of providers (64%) reported being familiar with the DSM-5 criteria, although there were significant differences by type of provider with 91.3% of physicians reporting agreement compared to 38% of public health educators and practitioners ($p<.01$). All public health practitioners reported that it was their responsibility to refer patients for further mental health treatment when compared to 98% of nurses, 80% of mental health workers, and 36% of physicians ($p<.05$).

Table 1: Beliefs, Attitudes, and Self-Efficacy of Healthcare Providers.

	Full Sample	Physicians (n=23)	Nurses (n=48)	Mental Health Workers (n=15)	Public Health Practitioners (n=13)	P-Value
Recognizing maternal depression is my responsibility.	93.9%	100.0%	93.8%	86.7%	92.3%	0.40
Treating maternal depression in my patients or their mothers is my responsibility.	61.6%	95.7%	54.2%	66.7%	23.1%	0.00**
It is my responsibility to refer depressed mothers for further mental health treatment.	94.9%	95.7%	97.9%	80.0%	100.0%	0.04*
I am familiar with the DSM-5 criteria for depression.	64.3%	91.3%	53.2%	80.0%	38.5%	0.00**
I feel confident in my ability to diagnose maternal depression.	55.6%	82.6%	45.8%	66.7%	30.8%	0.00*
I feel confident in my ability to treat (e.g., counseling, prescribing medication) maternal depression.	42.4%	78.3%	29.2%	53.3%	15.4%	0.00**
I am familiar with available mental health resources in my community.	83.8%	78.3%	83.3%	100.0%	76.9%	0.27

Responses to items were captured on a 5-point scale and values represent % agree or strongly agree.
*p≤0.05; **p≤0.01; ***p<0.001.

III Healthcare Providers' Practices Related to Managing Maternal Depression

Table 2 depicts more details on healthcare providers' practices in relation to maternal depression management. Across all disciplines, only 12% of providers reported rarely or never assessing for maternal depression among mothers demonstrating depressive symptomatology during their healthcare visit. Sixty-seven percent of providers reported use of a screening tool in their office on at least a monthly basis to assess maternal depression. Approximately 74% of physicians and mental health workers provided counseling for maternal depression on at least a monthly basis compared to 56% of nurses and 31% of public health practitioners ($p=.05$). Typical treatment of maternal depression varied by type of healthcare provider; the most common treatment of maternal depression used by physicians was prescribing medication (96%) and referring patients to off-site mental health specialists (70%). The most common treatment used by nurses was referral to off-site mental health specialists (71%). Among mental health workers and public health practitioners, 80% and 92% respectively reported that they referred patients to an off-site mental health specialist.

Table 2: Healthcare Providers Current Practices.

	Full Sample	Physicians (n=23)	Nurses (n=48)	Mental Health Workers (n=15)	Public Health Practitioners (n=13)	P-Value
How often do you assess for maternal depression among mothers demonstrating depressive symptomatology?	87.9%	95.7%	89.6%	73.3%	84.6%	0.21
How often do you use a screening tool to help in your assessment of maternal depression?	67.3%	68.2%	72.9%	66.7%	46.2%	0.34
How often do you provide counseling for maternal depression in your practice?	59.6%	73.9%	56.3%	73.3%	30.8%	0.05*
How often do you refer a patient for treatment of maternal depression?	79.6%	90.9%	75.0%	73.3%	84.6%	0.40
How often do you consult with a mental health specialist?	61.3%	69.6%	53.2%	73.3%	61.5%	0.41

Responses to items were captured on a 5-point scale and values represent frequency of current practices (% weekly or daily).
*p≤0.05; **p≤0.01; ***p<0.001.

IV Healthcare Providers' Perceived Patient Barriers to Managing Maternal Depression

63% of providers reported they believed patients feel stigmatized by being told they have depression. Ninety-two percent of public health practitioners reported they agreed that patients feel stigmatized compared to 70% of physicians, 56% of nurses, and 47% of mental health workers (p=.05) (Table 3). The most commonly reported barriers that reduced providers' likelihood to diagnose maternal depressions were perceived patient barriers (57%), limited time (44%), and availability of mental health referral options (41%). The most commonly reported barriers that reduced providers likelihood to treat maternal depression were inadequate mental health care available (42%), limited time (35%), and uncertainty about available resources.

V Healthcare Providers' Communication and Referral Practices

While no significant differences emerged between provider types on the communication items, some interesting findings arose (Tables 3 & 4). Approximately one third (35%) of providers reported that they were satisfied with access to mental health professionals in their communities. Eighty percent of providers felt comfortable contacting a mental health professional in their community, although 19% reported more comfort consulting another primary care provider rather than a mental health professional. Overall, 58% of providers agreed that it generally takes a long time to get an appointment with a mental health specialist. Less than 10% of providers agreed that it was not their responsibility to follow up after making a referral, and 27% reported that they did not have the time to follow up. Sixty percent of providers agreed that mental health resources for maternal depression were inadequate in their communities.

Table 3: Perceived Patient and Provider Barriers.

	Full Sample	Physicians (n=23)	Nurses (n=48)	Mental Health Workers (n=15)	Public Health Practitioners (n=13)	P-Value
Patients often deny feeling depressed[+]	64.6%	60.9%	60.4%	80.0%	69.2%	0.54
Patients believe feeling depressed is normal[+]	33.3%	47.8%	29.2%	33.3%	23.1%	0.37
Patients do not follow up with treatment for depression[+]	76.8%	73.9%	72.9%	93.3%	76.9%	0.42
Patients feel stigmatized by being told they have depression[+]	62.6%	69.6%	56.3%	46.7%	92.3%	0.05*
Patients have other beliefs that interfere with assessment and/or treatment for depression[+]	60.4%	50.0%	59.6%	85.7%	53.8%	0.17
Provider barriers to diagnose						
a. Perceived patient barriers	57.0%	69.6%	55.3%	71.4%	35.7%	0.26
b. Limited time	44.0%	60.9%	44.7%	35.7%	21.4%	0.68
c. Availability of mental health referral options	41.0%	47.8%	46.8%	21.4%	36.7%	0.31
d. Lack of knowledge/skills	29.0%	8.7%	36.2%	21.4%	50.0%	0.02*
e. Reimbursement/insurance options	20.0%	21.7%	23.4%	28.6%	0.0%	0.28

[+]Responses to items were captured on a 5-point scale and values represent % agree or strongly agree.
*p≤0.05; **p≤0.01; ***p<0.001.

Table 4: Healthcare Provider Communication.

	Full Sample	Physicians (n=23)	Nurses (n=48)	Mental Health Workers (n=15)	Public Health Practitioners (n=13)	P-Value
I am very satisfied with my access to mental health professionals in the community	35.4%	34.8%	31.3%	53.3%	30.8%	0.46
I am comfortable contacting a mental health professional to consult about a patient	78.8%	95.7%	75.0%	80.0%	61.5%	0.08
Payment does not enter in the decision of whether to refer or not refer a patient for mental health care	57.6%	60.9%	64.6%	33.3%	53.8%	0.19
I am satisfied with my experiences consulting with mental health professionals	41.4%	60.9%	31.3%	46.7%	38.5%	0.12
I am more comfortable consulting with other primary care providers than with mental health professionals on mental health issues	19.2%	8.7%	27.1%	6.7%	23.1%	0.16
Mental health resources for maternal depression in my community are inadequate	60.6%	60.9%	64.6%	60.0%	46.2%	0.69
It generally takes a long time to get an appointment with a mental health professional	58.2%	69.6%	64.6%	33.3%	41.7%	0.07

Responses to items were captured on a 5-point scale and values represent % agree or strongly agree.
*p≤0.05; **p≤0.01; ***p<0.001.

Discussion

Our study aimed to identify current maternal depression screening and referral practices across provider types to strengthen future intervention work and ultimately improve systems of care. We found that the majority of providers (94%) believed it was their responsibility to recognize maternal depression, which is significantly higher than 57% in past research [15]. This change may reflect an increase in overall prevalence and awareness of mental health disorders over the past decade and training emphasis on the importance of screening of depression. This change may also be due to selection bias of our study; participants were self-selected and may represent an over-sample of providers that were particularly focused on recognizing maternal depression. Providers in this study also represented a wider range of disciplines than previous studies, which may have contributed to such difference [16].

Although most providers (95%) reported that they feel that it is their responsibility to refer, shortcomings of the referral process should be noted. Often there is an incomplete uptake of referrals by patients and lack of follow-up by referring providers [17]. Women at risk for maternal depression are often unsuccessful in obtaining treatment due to perceived barriers at the patient-level (e.g., stigma), provider-level barriers (e.g., poor patient-provider communication), or system-level barriers such as cost and access to care (e.g., lack of convenient location for treatment) [18]. Knowledge and confidence related to identifying and managing (treating and/or referring) maternal depression varied among specialties. Approximately two-thirds of providers were familiar with the DSM-5 criteria for depression and unsurprisingly, physicians and mental health workers reported higher familiarity compared to nurses and public health practitioners. However, just over half of the providers felt confident in detecting maternal depression and slightly less than half reported confidence in treating maternal depression in their practice. Lower levels of confidence were reported among nurses, mental health workers and public health practitioners compared with physicians. This finding may be a result of limited training on maternal depression. A study found limited training to be a significant barrier contributing to physicians' inability to treat maternal depression in an alternative study [19].

When asked about current practices, most providers reported that they assessed for maternal depression when symptoms were present. While only two thirds of all providers reported using a screening tool for their assessment, the actual screening rate per office is higher when staff efforts are combined (either the provider or someone else in the office), with the screening rate rising to 91%. This is substantially higher than reports in the current literature, with a recent review demonstrating that maternal depression is assessed in primary care settings less than 50% of the time, and the use of screening tools is even lower (22%-46%) [20]. The higher utilization of assessment and screening tools in our study may be due to self-selection and the broader representation of diverse types of providers. In terms of management, more than half of all providers reported that they deliver counseling in their office for patients who have a positive screen for maternal depression. These were higher among physicians and mental health workers than nurses and public health practitioners which may indicate an expansion of non-specialized workers becoming trained in psychosocial support for patients, a method that has proven to be effective for maximizing mental health care access [21].

All provider types were involved in treatment and/or referrals for maternal depression. The management of patients however varied substantially between groups. Approximately one half of all physicians and mental health workers counseled patients in the office and physicians reported to prescribe medications. More nurses and public health practitioners reported to treat by providing written information and referrals to community support groups. This behavior may reflect the need to refer to organizations that utilize nonspecialized workers or non-pharmacological approaches in order to expand mental health care resources for patients [21]. Improvements in patient outcomes and staff capacity are evident when involving extended staff (e.g. nurses, midwives) in the management and treatment of maternal depression [21].

While advice on patient self-care may not encompass all a mental health worker's scope, it is notable that the reported use of such advice is lowest among mental health workers. This may imply mental health workers see patients with more severe mental health issues where self-care may not be a primary treatment option or mental health specialists may have scope or capacity limitations that prevent them from providing behavior change advice to their patients. Mental health workers may also not be giving behavior change advice as other provider groups (such as primary care physicians) may be delivering such advice themselves [21]. This reflects ongoing efforts to involve more provider types in all aspects of care for maternal depression by building capacity in mental health collaborations and utilizing nonspecialized health workers to provide maternal depression care [22, 23].

Providers identified a variety of perceived patient barriers to treating maternal depression. Most providers, particularly mental health providers, agreed that patients often deny feeling depressed. Patients' denial of symptoms may be related to a lack of education regarding depression and misconceptions about depressive symptoms [6, 24]. Patient denial may also be related to the common perceived stigma regarding depression and a majority of providers agreed that patients feel stigmatized by being told they have depression [19]. More than half of providers identified that patients have other beliefs that interfere with assessment and/or treatment of depression which is consistent with previous findings indicating that patients are often skeptical about the efficacy of treatment for perinatal depression [6, 16]. With the negative stigma relating to a depression diagnosis and other beliefs that impede help-seeking it is not surprising that women are under treated or untreated for depression and that there is often a lack of follow-through for treatment referrals [19, 25].

Most providers agreed that patients do not follow up with treatment for depression, with mental health professionals having highest percent agreement. There are a variety of potential causes for this lack of follow-through including transportation and cost barriers as well as perceived stigma and fear of human services repercussions [6, 19, 24]. One particularly common reason patients gave for the lack of follow-up for mental health treatment is a dislike for seeking services outside the obstetrician's office, and many women have indicated that they would be more likely to seek treatment if it were available in the same building

or office as their obstetrician [6]. The quality of patient-provider communication plays a role such that patients who reported their provider listened carefully to them were more likely to follow-up with mental health treatment [21]. Despite potential stigma and a lack of treatment follow-through, less than half of providers in our study indicated that patients did not feel comfortable discussing their mental health concerns during visits, and more physicians disagreed with this statement.

Our findings underscore the need to strengthen patient-provider communication related to managing maternal depression. Although most providers were comfortable contacting a mental health specialist, only a third reported being very satisfied with their access to mental health professionals in the community. Among those providers who did consult with mental health specialists, over half were not satisfied with their experiences, which is not surprising as perceived poor communication between primary care providers and mental health specialists is consistent with previous literature [9]. Many providers found that it generally took a long time to make an appointment with a mental health specialist. Barriers such as these may contribute to our findings suggesting that 19% of providers prefer to consult other primary care providers rather than mental health professionals.

Findings from this study need to be considered in light of a few limitations. The study involved a small, convenience sample with little heterogeneity, thus may not represent other populations. Selection bias may have skewed study results, as providers with an interest in learning about maternal depression and/or improving their practices related to maternal depression may have been more inclined to complete the survey. We attempted to group specialties based on common characteristics and recognize that more grouping methods are possible, thus further exploration is warranted. In future studies, selecting specific providers based on specialization as well as increasing the sample size will improve generalizability of these results. Finally, incorporation of qualitative data collection methods in future studies is recommended to better understand differences in attitudes, belief, self-efficacy, barriers and practices across different types of providers.

Implications for Practice

The detection and treatment of perinatal mood disorders is of the utmost importance. Paramount to good management of perinatal mood disorders is the early detection and treatment of perinatal mood disorders among providers. In addition to physicians, allied healthcare professionals including nurses, social workers, and non-specialized public health workers, play a significant role in the management of maternal depression. Our findings highlight the need for expansion of online training programs to increase awareness of mental health resources in the community, improve confidence related to diagnosis and treatment of perinatal mood disorders, and to enhance communication between mental health specialists and healthcare providers in order to effectively identify and manage maternal depression.

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Conflicts of Interest

None.

Ethics Approval

All procedures were approved by the respective university's institutional review board prior to the onset of the pilot, randomized controlled trial.

References

1. Melville JL, Gavin A, Guo Y, Fan MY, Katon WJ (2010) Depressive disorders during pregnancy: prevalence and risk factors in a large urban sample. *Obstet Gynecol* 116: 1064-1070. [Crossref]
2. Banti S, Mauri M, Oppo A, Borri C, Rambelli C et al. (2011) From the third month of pregnancy to 1 year postpartum. Prevalence, incidence, recurrence, and new onset of depression. Results from the perinatal depression-research & screening unit study. *Compr Psychiatry* 52: 343-351. [Crossref]
3. Grote NK, Bridge JA, Gavin AR, Melville JL, Iyengar S et al. (2010) A meta-analysis of depression during pregnancy and the risk of preterm birth, low birth weight, and intrauterine growth restriction. *Arch Gen Psychiatry* 67: 1012-1024. [Crossref]
4. Gentile S (2017) Untreated depression during pregnancy: Short- and long-term effects in offspring. A systematic review. *Neuroscience* 342: 154-166. [Crossref]
5. Grigoriadis S, Mamisashvili L, Ross LE (2013) Achieving the balance: treating depressed pregnant women with antidepressants. *J Clin Psychiatry* 74: 375-376. [Crossref]
6. Flynn HA, Henshaw E, O'Mahen H, Forman J (2010) Patient perspectives on improving the depression referral processes in obstetrics settings: a qualitative study. *Gen Hosp Psychiatry* 32: 9-16. [Crossref]
7. Hall KS, Harris LH, Dalton VK (2017) Women's Preferred Sources for Primary and Mental Health Care: Implications for Reproductive Health Providers. *Womens Health Issues* 27: 196-205. [Crossref]
8. Rhodes AM, Segre LS (2013) Perinatal depression: A review of US legislation and law. *Arch Womens Ment Health* 16: 259-270. [Crossref]
9. Leiferman JA, Dauber SE, Heisler K, Paulson JF (2008). Primary care physicians' beliefs and practices toward maternal depression. *J Womens Health (Larchmt)* 17: 1143-1150. [Crossref]
10. Farr SL, Ko JY, Burley K, Gupta S (2016) Provider communication on perinatal depression: a population-based study. *Arch Womens Ment Health* 19: 35-40. [Crossref]
11. Price SK, Corder Mabe J, Austin K (2012) Perinatal depression screening and intervention: enhancing health provider involvement. *J Womens Health (Larchmt)* 21: 447-455. [Crossref]
12. A Leiferman J, Farewell CV, E Lee Winn A, Jewell J, Ulrickson C et al. (2019) Management of Prenatal Depression: Effectiveness of an

Online Training Module Across Health Care Disciplines. *J Contin Educ Health Prof* 39: 178-184. [Crossref]

13. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N et al. (2009) Research electronic data capture (REDCap)--a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform* 42: 377-381. [Crossref]
14. IBM SPSS Inc (2012) SPSS Statistics for Windows. *IBM Corp* 20: 1-8.
15. Olson AL, Kemper KJ, Kelleher KJ, Hammond CS, Zuckerman BS et al. (2002) Primary care pediatricians' roles and perceived responsibilities in the identification and management of maternal depression. *Pediatrics* 10: 1169-1176. [Crossref]
16. Goodman JH (2009) Women's attitudes, preferences, and perceived barriers to treatment for perinatal depression. *Birth* 36: 60-69. [Crossref]
17. Goodman JH, Tyer Viola L (2010) Detection, treatment, and referral of perinatal depression and anxiety by obstetrical providers. *J Womens Health (Larchmt)*19: 477-490. [Crossref]
18. Kim JJ, La Porte LM, Corcoran M, Magasi S, Batza J et al. (2010) Barriers to mental health treatment among obstetric patients at risk for depression. *Am J Obstet Gynecol* 202: 312.e1-312.e5. [Crossref]
19. Byatt N, Biebel K, Lundquist RS, Simas TAM, Debordes Jackson G et al. (2012) Patient, provider, and system-level barriers and facilitators to addressing perinatal depression. *J Reprod Infant Psychol* 30: 436-449.
20. Gjerdingen DK, Yawn BP (2007) Postpartum depression screening: importance, methods, barriers, and recommendations for practice. *J Am Board Fam Med* 20: 280-288. [Crossref]
21. Keller AO, Gangnon R, Witt WP (2014) The impact of patient-provider communication and language spoken on adequacy of depression treatment for U.S. women. *Health Commun* 29: 646-655. [Crossref]
22. Lee E, Kealy D (2014) Revisiting Balint's innovation: Enhancing capacity in collaborative mental health care. *J Interprof Care* 28: 466-470. [Crossref]
23. Chowdhary N, Sikander S, Atif N, Singh N, Ahmad I et al. (2014) The content and delivery of psychological interventions for perinatal depression by non-specialist health workers in low and middle income countries: a systematic review. *Best Pract Res Clin Obstet Gynaecol* 28: 113-133. [Crossref]
24. Kopelman RC, Moel J, Mertens C, Stuart S, Arndt S et al. (2008) Barriers to care for antenatal depression. *Psychiatr Serv* 59: 429-432. [Crossref]
25. Kim JJ, La Porte LM, Adams MG, Gordon TE, Kuendig JM et al. (2009) Obstetric care provider engagement in a perinatal depression screening program. *Arch Womens Ment Health* 12: 167-172. [Crossref]