

Exploring Perinatal Anxiety Detection, and Perinatal Women's Perceived Social Support From Medical Providers: A Quantitative Study

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Abstract

Objective: Anxiety disorders during the perinatal period, or perinatal anxiety (PNA), occur at rates comparable to perinatal depression and often go undetected. Obstetric providers are perfectly positioned to identify PNA; yet, most literature focuses on informal supports as primary protective factors the prevention and detection of PNA. This study aims to contribute to this gap by exploring the relationship between perceived support from medical providers and the detection of PNA.

Materials and methods: The current study asked postpartum women to reflect on their levels of anxiety, perceived social support from obstetric care providers, help seeking behavior, and factors influencing their decision to disclose symptoms of PNA to their obstetric care provider during their perinatal period. Participants were recruited via an electronic flyer posted in social media groups for mothers. They completed an online survey consisting of a demographic questionnaire, Perinatal Anxiety Screening Scale (PASS), Modified Multidimensional Scale of Perceived Social Support (MSPSS), Subscale 1, Subscale 2.

Results: Totally 98 postpartum women participated in this study. A Spearman correlation demonstrated a significant positive relationship between levels of perceived social support from obstetric providers and perinatal women ranking their obstetric provider as a barrier, neutral or motivating factor in help seeking behavior for PNA. A chi-square test of independence indicated a significant relationship between rankings of a provider as a barrier, neutral or motivator in help seeking behavior and the disclosure of PNA directly to obstetric care providers. It was found that levels of perceived social support reported on the Multidimensional Scale of Perceived Social Support (MSPSS) significantly predicted ranking obstetric providers as a barrier, neutral or motivating factor in the decision to disclose symptoms of PNA to their obstetric care provider.

Conclusion: The results of this study indicate a missed opportunity in more effective detection of PNA. Specifically, the role of obstetric providers in detection of PNA and potential to serve as a protective factor or motivator in the disclosure of PNA is mentioned.

Keywords: Perinatal Anxiety; Perinatal Mood Disorder; Perinatal Anxiety Detection; Perinatal Anxiety Disclosure; Social Support; Help Seeking Behavior; Quantitative Study

Introduction

Anxiety disorders during the perinatal period,

commonly referred to as perinatal anxiety (PNA), occur within the defined perinatal period, starting at 22 weeks gestation and ending seven completed days after birth or up to 12 months postpartum (1-4). PNA symptoms can range from mild to severe and is

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characterized by persistent excessive worries in multiple domains, restlessness, irritability, fatigue, sleep disturbance, and poor concentration, fear related to pregnancy, delivery, becoming a mother and can mimic symptoms within generalized anxiety disorder or post-traumatic stress disorder (5, 6). Emerging evidence indicates that PNA is more common than other perinatal mood disorders (i.e. perinatal depression) affecting 22-40% women in the United States (7-9). Historically, the focus has been on perinatal and postpartum depression. However, as our understanding of the pervasiveness of PNA has grown, evidence has emerged that PNA is more common than depression with 60% comorbidity of PNA and depression (10, 11). Despite the insidiousness of PNA, 60% of symptomatic perinatal women do not receive a clinical diagnosis, and 50% with a diagnosis do not receive treatment (12-14).

The consequences of untreated perinatal anxiety are detrimental and include but are not limited to increased risk of premature birth, pre-eclampsia, impaired infant bonding, infanticide, higher levels of cortisol for infants at birth, impaired cognitive performance of infants, higher risk of childhood psychiatric disorders, and decreased brain development in areas of the infants brain associated with learning, memory, attention, emotional regulation and auditory language processing (6, 15-20). Untreated perinatal mental health can be fatal for perinatal women and has emerged as one of the leading causes of death for pregnant and postpartum women in the United States (21-24). According to the U.S. Center for Disease Control and Prevention (25) severe maternal morbidity, is defined as “unexpected outcomes of labor and delivery that result in significant short- or long-term consequences to a woman’s health” (25). Maternal morbidity is very common with approximately 50-60,000 (15%) of women experiencing severe maternal morbidity each year in the United States (26, 27). Maternal morbidity is highly correlated with the development of PNA; rates of anxiety and other posttraumatic stress symptoms are higher if women experience an adverse perinatal complication or outcome, such as preeclampsia, or a preterm birth (28). In a systematic review and metaanalysis of perinatal mood and anxiety disorders, it was found that mental health conditions now contribute to 20% of all maternal deaths with stark increases in incidents of self-harm and suicide among pregnant or postpartum women (29). Deaths related to self-harm, overdose, or suicide up to one

year postpartum are considered as “pregnancy associated” due to these causes of death being categorized as incidental (30).

Despite these alarming adverse outcomes, research to inform the effective detection and successful treatment of perinatal mood disorders is scant and overwhelmingly focused on depression (31-34). This gap in literature is exemplified in a systematic review conducted by Grigoriadis et al. (16), exploring the effects of maternal depression, anxiety, and perceived stress during pregnancy. Grigoriadis et al. (16) examined 1469 articles published in English between 1980 and 2013; of the 39 articles that met their criteria, 14 studies focused on maternal depression and only 3 studies on anxiety in perinatal women. While there is a growing body of literature focusing on PNA in recent years, studies focusing exclusively on PNA are rare, with the first published findings to report both the prevalence and incidence of perinatal anxiety with the use of a representative sample available in 2016 (7). There is a dire need for more research to inform the prevention, detection, and treatment of PNA, especially in the United States. In addition, existing literature has focused heavily on emotional or instrumental support from partners, friends, and family members as protective factors in the prevention and early detection of PNA. There has been limited examination of types of support (i.e., informal support vs, professional support from medical providers), and how this may serve as a protective factor in the prevention and detection of PNA (35). Specifically, there is a need for research that focuses on how obstetric providers are uniquely positioned to screen for PNA due to their expertise, access to screening tools, and frequent contact conducive to establishing rapport with patients (6).

The Role of Obstetric Providers in the Detection and Patient Disclosure of Perinatal Anxiety (PNA)

In response to the increased sense of urgency to address maternal mental health as a vital aspect of perinatal care, a new understanding of how critical obstetric providers are to the effective assessment and treatment of perinatal psychopathology has emerged (36). Routine, consistent, and thorough screening is the first step to early detection and successful treatment of PNA, and obstetric providers are crucial to this process (6, 37). Obstetric care providers are the most consistent and likely the only care provider for women during the perinatal period (38). The perinatal period offers a unique opportunity for

Obstetric providers to effectively screen patients for PNA, due to the frequency of interactions (i.e., office visits, delivery, postpartum follow ups) and high levels of motivation for perinatal women to improve their mental health; despite this, screening in office settings is rare (27, 39). Routine visits should be utilized as an opportunity to conduct a full psychosocial assessment of the patient to obtain a comprehensive analysis of the patient's current risk factors (i.e., family history, history of mental illness, exposure to violence, isolation), protective factors (i.e., social support from family and friends, quality of her partner relationship); however this is not common practice (40). The consequences of the absence of routine screening are detrimental and include but are not limited to: up to 75% of women who meet criteria going undiagnosed, symptoms intensifying postpartum, diminished connection to treatment, and inability to seek help from other providers due to being unsure if symptoms are abnormal (37).

Finally, the frequency of perinatal office visits also offers the opportunity for medical providers to establish rapport with clients with the goal of creating a safe space for perinatal women to disclose symptoms. The US Preventive Services Task Force (USPSTF) recommends that providers focus on patient engagement, education, screening, and developing collaborative trusting relationships with patients (41). This recommendation is corroborated by qualitative studies that indicate that women value patient centered trusting relationships with their obstetric providers. According to Small et al. (35) perinatal women derived the most value from social support provided from health care providers when they engaged in meaningful relationships with their providers during office visits, rather than technical and regimented transactions. Kiraly et al. (42) conducted a study and found that by training obstetric providers to complete face-to-face screenings as well as open-ended interviews, there is a high potential for enhanced patient-provider communication; this can lead to improved detection rates and follow-up care. Obstetric providers are perfectly positioned to proactively detect and treat PNA during the perinatal period.

In sum, this work addresses the significant gap in literature by exploring the relationship between perinatal women's perceived level of social support from their medical providers and their willingness to disclose symptoms of PNA. This study also evaluates medical providers as a motivator for seeking help, a neutral factor in seeking help, or as a deterrent from

seeking treatment for PNA. Finally, this study required participants to rank specific experiences, fears or perceived expectations from medical providers based on how influential they perceive these factors to be to the disclosure of perinatal anxiety symptoms. The objective of this work was to identify if medical providers are currently serving as a protective mechanism in the prevention and early detection of PNA, or as a risk factor by adversely impacting perceived social support and subsequently, disclosure of PNA symptoms. Exploring the role of medical providers in providing social support serves to validate or eliminate the need for future research into social support from medical providers as a protective factor in the prevention, early detection and successful treatment of PNA.

Materials and methods

Design Setting: This quantitative study and is a pre-experimental one group posttest design. This study consisted of one group of participants who have been introduced to a stimulus (their perinatal obstetric care during the perinatal period) and a posttest (the online survey) to retrospectively operationalize perceived levels of social support from their medical provider(s) during the perinatal period, to evaluate the rates of disclosure of PNA symptoms to their provide, to identify their provider as a barrier, neutral or motivator in help seeking; and to allow participants to rate the level of influence seven factors played in their decision to disclose or not disclose symptoms of PNA to their medical provider. The time frame for the perinatal period is defined as twenty-two weeks gestation and ending seven completed days after birth (4) all participants will be a minimum of six months postpartum, a maximum of two years postpartum. All eligible participants completed an electronic consent form, eligibility questionnaire, the Perinatal Anxiety Screening Scale (PASS), a modified Multidimensional Perceived Social Support Scale (MPSS), and scales created for this study titled Subscale 1 and Subscale 2. All recruitment and participation in this study was completed online and no face-to-face interaction occurred.

Participants

Inclusion & Exclusion Criteria: To be eligible to participate in this study, all participants were required to be a minimum of 18 years old, live in the United States of America, be a minimum of six months postpartum, and no more than two years postpartum. The subject population did not consist of

any women actively in the perinatal period. The time frame for the perinatal period is defined as twenty-two weeks gestation and ending seven completed days after birth (4).

Sampling & Recruitment: Convenience sampling was utilized and mothers were recruited via the use of an electronic flyer that was shared in Facebook groups designed for mothers. Letters of support with permission to post the flyer for this study were obtained from the following: 1) Facebook group “PhD Mamas: Mothers Navigating Academia”, 2) Facebook group “Saratoga Moms”, and 3) Facebook group “Postpartum and Beyond”. PhD Mama: Mothers Navigating Academia had 18,000 members, Postpartum and Beyond had 81 members, and Saratoga Moms has 2,400 members. In addition, a formal letter of support was also received from the owner of Rosy Glow Maternity, LLC, a maternity boutique in Webster, NY. The study for this flyer was shared on the social media (Instagram) for this boutique and hung in their store. Recruitment and data collection began on May 17, 2023 and ended on July 16, 2023. A total of 175 individuals completed this survey, and a total of 135 participants met eligibility requirements to participate in this study. However, once participants were removed due to incomplete information, a total of 98 participants remained.

Measures

The Perinatal Anxiety Screening Scale (PASS): The Perinatal Anxiety Screening Scale (PASS) (10) is a 31-item self-report questionnaire that is utilized to assess four categories of anxiety symptoms, i.e., 1) acute anxiety and adjustment, 2) general worry and specific fears, 3) perfectionism, control and trauma and 4) social anxiety. A Likert scale of 0-3 is utilized to rate answers from not at all “0”, sometimes “1”, often “2” or almost always “3”. This scale demonstrates adequate convergent validity, excellent sensitivity and specificity (AUC of 0.85) and excellent reliability for the entire scale ($\alpha = 0.96$) (10, 43).

The following modifications were made to the Perinatal Anxiety Screening Scale (PASS):

The original scale allows participants to choose either their antenatal age (weeks pregnant) or their postnatal age (baby’s age). In addition, before participants are asked to rate their answers, they are asked to consider their experience over the last month. This study will only utilize postpartum participants who are retrospectively assessing their experience. Therefore, the option for “antenatal age”, “postnatal age” and the “over the past month” are not

relevant. “Antenatal age” and “postnatal age” will be removed and the “over the past month” will be replaced with the statement provided below.

Original Scale

ANTENATAL POSTNATAL Weeks pregnant
() Baby’s age ()

OVER THE PAST MONTH, *How often* have you experienced the following? Please pick the response that most closely describes your experience for *every* question.

Modified Scale

How often did you experience any of the following during the perinatal period of pregnancy (starting at 22 weeks of your pregnancy and following childbirth)? Please pick the response that most closely describes your experience for every question.

The Multidimensional Perceived Social Support Scale (MPSSS): Next, participants completed the Multidimensional Perceived Social Support Scale (MPSSS) (44). The MPSSS is a 12-item questionnaire that assesses perceived social support from three sources: friends, family members and spouse. This instrument utilizes a Likert type scale ranging from *very strongly disagree* “1”, to *very strongly agree* “7”. Scoring is conducted by calculating low, medium or high levels of support. According to Zimet et al. (45), mean scores are organized as follows: mean score of 1-2.9 (low support), mean score of 3-5 (moderate support) and 5.1 to 7 (high support). There are currently no scales available that measure perceived social support from medical providers due to the lack of research surrounding perceived social support from medical providers. Therefore, the following two modifications were made to the 12 items in the Multidimensional Scale of Perceived Social Support: 1) Changed terms from friends, partner, or family member to the term medical provider, 2) The language of the scale was modified to past tense: “is” modified to “was” and “has” modified to “had”. This modification allows for the participants to answer these questions retrospectively.

Upon extensive testing across differing populations and settings, the psychometric properties of the Multidimensional Scale of Perceived Social Support (MSPSS) have demonstrated construct (46) and factorial validity (47). According to a systematic review of the psychometric properties of the MSPSS, this instrument demonstrated high internal consistency ($\alpha = 0.88$) and moderate construct validity (46). Furthermore, additional research

conducted in subsequent years by Zimet and his colleagues demonstrated internal reliability ($\alpha = 0.91$) and factorial validity across other specialized populations, including pregnant women (44).

Evaluating Factors Perinatal Women Consider in the Decision to Talk to Medical Providers about Symptoms of Anxiety (Subscale 1 and Subscale 2)

Finally, the Subscale 1 and Subscale 2 scales created by the PI. The aim of this measure is to quantify participants' rates of disclosure of PNA to their obstetric care providers, to evaluate how participants rank their medical provider in the help seeking process (i.e., a barrier, neutral or motivator), and to evaluate the most influential factors considered by women in the decision to disclose or not disclose PNA to their provider. The themes utilized to formulate the seven statements or factors in the help seeking aspect of this subscale were chosen by the principal investigator based on the available qualitative studies exploring honesty, comfort levels and barriers to the disclosure of perinatal anxiety (15, 48-50). These studies conducted semi- structured interviews with perinatal women and their findings supported the variables being explored in this scale.

Instructions: Please indicate if you disclosed symptoms of anxiety to your provider. Select "yes" or "no".

Question: Did you disclose symptoms of anxiety to your medical provider during the period of 22 weeks pregnant to seven days post birth? (i.e., fear, fatigue, sleep disturbances, excessive worry, loss of appetite or loss of energy) Participants answer by choosing "yes" or "no".

Instructions: Please identify your provider as a barrier, neutral factor or motivator to seeking help for perinatal anxiety.

Question: Would you say that your medical provider(s) were a barrier, neutral factor or motivating factor in the decision to seek help for perinatal anxiety? Participants answer using a Likert Scale:

"0" your provider served as a barrier to seeking help for symptoms of perinatal anxiety

"1" your provider played a neutral role in seeking help for perinatal anxiety

"2" your provider served as a motivator to seeking help for perinatal anxiety

Instructions: There are seven statements below describing examples of fears, experiences or perceived expectations that may impact the decision to talk to your medical provider(s) about symptoms of anxiety or worry. You will identify how much the

following fears, experiences and perceived expectations influence the decision to talk to your medical provider(s) about symptoms of anxiety or worry by clicking on and rearranging the statements below. To rearrange the statements to the desired order, click and drag the statements with the most influential statement listed at "1" and the least influential statement at "7".

The following statement were provided to participants:

1. Fear of being judged by your medical provider(s).
2. Fear of your medical provider(s) thinking that you are mentally unfit to mother your child or children.
3. Fear of the possible consequences of your medical provider(s) thinking that you are an unfit mother to parent your child or children.
4. Fear of further evaluations or recommendations i.e., attending therapy or taking prescribed medications etc.
5. Experience(s) of medical provider(s) ignoring or dismissing your attempts to discuss symptoms related to anxiety or worry.
6. Experience(s) of medical provider(s) saying or acting like they did not have the time to talk with you about symptoms or concerns during your medical appointment(s)
7. Expectation or pressure felt from medical provider(s) to emotionally experience pregnancy exclusively as a period of happiness, excitement, joy or love etc.

Data Analysis

Statistical Software: Statistical Package for Social Sciences (SPSS) version 29.0 was utilized to conduct data analysis in this study.

Descriptive Data Analysis: Descriptive statistics were utilized to determine the frequency and percentages, and of demographic variables such as: age, race, highest level of education, and marital status. Descriptive statistics were then utilized to demonstrate the frequencies, and mean of scores for the two standardized instruments included in this study: The Perinatal Anxiety Screening Scale (PASS) and the Multidimensional Scale of Perceived Social Support (MSPSS). Frequencies using descriptive statistics were then utilized to identify the percentage of participants within each range of severity for both instruments were then evaluated (i.e., asymptomatic or PASS score of 0-20, mild-moderate anxiety or PASS score 21-41, severe anxiety or PASS score 42-93, low perceived social support or MSPSS score 12-35, medium perceived social support or MSPSS

score 36-60, high perceived social support or MSPSS score 61-80). Descriptive statistics were utilized to assess the frequencies and percentages of participants' rates of disclosure of PNA to their obstetric providers and how they rated their provider in the process to seek help for symptoms of PNA (i.e., barrier, neutral factor, motivator). Frequencies were utilized to determine the frequencies and percentages for participant ranking of the seven statements (i.e., fears, experiences, expectations) that they deemed to be "1" most influential to "7" least influential in their decision to disclose symptoms of PNA to their obstetric care provider. An exploratory factor analysis of the seven factors was conducted in preparation for a logistic regression. While the results of the logistic regression were not statistically significant, all information will be reported below due to these findings still having potential to inform the critical need to cultivate interactions with obstetric care providers that are conducive to help seeking.

Inferential Data Analysis: A Spearman's rank correlation was conducted to assess the relationship between levels of perceived support on the Multidimensional Scale of Social Support (MSPSS) (low perceived social support, medium perceived social support, high perceived social support) and ranking of obstetric providers as a barrier, neutral, or motivating factor in the decision to disclose symptoms of PNA. A chi-square test was utilized to assess association between participants' ratings of their medical providers as a barrier, neutral, or motivator in their decision to disclose symptoms of PNA to their obstetric provider. Finally, a multiple linear regression was implemented to assess if level of perceived social support, and level of anxiety serve as predictors of ranking their obstetric provider as a barrier, neutral, or motivator in the decision to seek help for symptoms of PNA.

Results

Participant Characteristics: All participants in this study were women who were 18 years or older, lived in the United States of America, and were a minimum of six months postpartum, and a maximum of two years postpartum. Of the 167 participants that completed this survey, 32 participants were excluded and exited from the survey due to not meeting eligibility requirements, and an additional 37 participants were excluded due to missing or incomplete answers on key measures. Descriptive statistics were utilized to analyze demographic

characteristics of the sample. There was little diversity across multiple domains of participant characteristics including age with 64.3% or 63 participants ($N=98$) reporting an age within 25-34. Similar findings for race, with 86.1% or 85 participants identifying as White, and only 6.1% or 6 participants identifying as Black, 3.1% or 3 participants identifying as Asian, and 3.1% of participants identifying as Hispanic or Latina, and 1.1% or 1 participant identifying as other ($N=98$). Education level offered some variance with 1.0% or 1 participant indicating High school graduate (high school diploma or equivalent including GED), 9.2% or 9 participants indicating an education level of Some college but no degree, 4.1% or 4 participants indicating an Associate degree in college (2-year), 26.5% or 26 participants indicating a Bachelor's degree in college (4-year), 43.9% or 43 participants indicating a Master's degree, 11.2% or 1 participants indicating a Doctoral degree and 4.1% or 4 participants indicating a Professional Degree (J.D., M.D.) Finally, the most homogeneous findings were within marital status with 91.8% or 90 participants ($N=98$) identifying as married.

Perinatal Anxiety Screening Scale Scores & Severity of Anxiety Symptoms among Participants

The average score on the Perinatal Anxiety Screening Scale (PASS) was 35 ($M= 35.4$, $SD = 16.03$). Per the scoring instructions for the PASS, a cut off score of 26 is recommended to differentiate between high risk and low risk for PNA. Therefore, the average score for participants would indicate a high risk for PNA. Somerville et al. (10) offer specific guidance to categorize scores by severity and the following ranges are provided: asymptomatic 0-20, mild-moderate 21-41, and severe 42-93. This would place the average score for participants within the mild-moderate range, 21-41, for severity of symptoms. For range of severity, 20 (20.4%) scored within the asymptomatic range, 69 (70.4%) scored within the mild-moderate range of symptomatology, 36 (36.7%) scored within the severe range of severity, and 67 participants (68.3%) were identified as high risk based on the cut off score of 26 or above.

The Multidimensional Scale of Perceived Social Support (MSPSS) Scores & Levels of Support among Participants

Scoring instructions provided by Zimet et al. (44) for the MSPSS indicate scores within 12-35 a low perceived support, 36-60 as medium perceived support, and 61-80 as high perceived support. The

mean score on the Multidimensional Scale of Perceived Social Support (MSPSS) was 58 ($SD= 14.35$). Per the scoring instructions for the MSPSS, the mean score is consistent with a medium level of support. Results for ranges of support (i.e., low, medium, high) were as follows: 4 (4.1%) of participants scored within the low range of perceived social support, 44 (44.1%) scored within the medium range of perceived social support, and 50 (51.0%) of participants scored within the high level of social support range. Therefore, the majority of participants scored within medium to high levels of perceived social support from their medical providers during the perinatal period.

Evaluating Factors Perinatal Women Consider in the Decision to Talk to Medical Providers about Symptoms of Anxiety: Rates of Disclosure & Rating Providers as Barrier, Neutral or Motivating Factor in Help Seeking

The role of obstetric care providers in help seeking behaviors was explored within this subscale and participants were asked to rank their obstetric provider as a barrier “1”, neutral factor “2” or motivator “3” for seeking help for perinatal anxiety. Of the 98 participants, 9.2% of participants identified their provider as a barrier to help seeking, 61.2% identified their provider as a neutral factor in help seeking, and 29% of participants identified their provider as a motivating factor in their decision to seek help ($M=2.2$, $SD= .591$). Within this subscale participants were also asked about disclosure of PNA to obstetric care providers and 54 (55.1%) of participants reported that they did disclose symptoms of PNA, and 43 (43.8%) participants did not disclose symptoms of PNA.

Evaluating Factors Perinatal Women Consider in the Decision to Talk to Medical Providers about Symptoms of Anxiety: Ranking Specific Fears, Experiences or Expectations

Descriptive statistics were utilized to evaluate the frequency and averages for participants' rankings of seven influential statements from 1-7, with “1” as the most influential, and “7” as the least influential in their decision to disclose PNA symptoms to their obstetric care provider. There was substantial variation within ratings of each factor. The most influential factor was determined to be “Fear of the possible consequences of your medical provider(s) thinking that you are an unfit mother to parent your child or children” and was ranked as a “1” by 19 (19.4%) of participants. The highest ranking for “2”

was identified as “Fear of your medical provider(s) thinking that you are mentally unfit to mother your child or children” by 28 (28.6%) of participants. The highest ranking for “3” was identified as “Fear of being judged by your medical provider(s)” by 25 (25.5%) of participants. The highest rankings for “4” were identified as “Fear of further evaluations or recommendations i.e., attending therapy or taking prescribed medications” and “Experience(s) of medical provider(s) ignoring or dismissing your attempts to discuss symptoms related to anxiety or worry (i.e. did your medical provider’s response to your concerns make you feel that your symptoms were “normal”, not a big deal or not worthy of further discussion” both ranked as “4” by 18 (18.4%) of participants. The highest ranking for “5” was identified as “Expectation or pressure felt from the medical provider(s) to emotionally experience pregnancy exclusively as a period of happiness, excitement, joy or love etc.” by 22 (22.4%) of participants. The highest ranking for “6” was identified as “Fear of the possible consequences of your medical provider(s) thinking that you are an unfit mother to parent your child or children” by 24 (24.5%) of participants. The highest ranking for “7” as the least influential factor was identified by 27 (27.6%) of participants as “Expectation or pressure felt from the medical provider(s) to emotionally experience pregnancy exclusively as a period of happiness, excitement, joy or love”.

These seven statements were derived from themes of the limited qualitative studies exploring women’s experiences with help seeking for perinatal mental health in obstetric care (15, 49, 50). The inclusion of the lived experiences of perinatal women aimed to explore specific covert or overt forms of communication between perinatal women and their providers that may impact how they rate their provider in the disclosure process (i.e., barrier, neutral, motivator), their perceived social support, and ultimately, disclosure and help seeking.

Exploring Levels of Perceived Social Support, Levels of Anxiety & Providers Serving as a Barrier, Neutral or Motivating Factor in Help Seeking

Spearman’s Rank Correlation: Spearman’s rank correlation was computed to evaluate the association between levels of perceived social support from obstetric care providers (i.e., low, medium, high) and ranking of obstetric care providers as a barrier, neutral factor, or motivating factor in the decision seek help for PNA. There was a significant positive relationship

between levels of perceived social support from obstetric providers and perinatal women ranking their obstetric provider as a barrier, neutral or motivating factor in help seeking behavior for PNA, $r_s(96) = .48$, $p < .001$, $N=98$. Therefore, as levels of perceived social support from obstetric care providers increase, the ranking on the provider as a barrier, neutral or motivator scale increases as well (i.e., high level of perceived social support from obstetric score is associated with a ranking of a provider as a motivating factor in help seeking for PNA).

Multiple Linear Regression: Multiple linear regression was used to test if the level of perceived social support from obstetric providers, level of perinatal anxiety, significantly predicted ranking obstetric providers as a barrier, neutral or motivating factor in the decision to disclose symptoms of PNA to their medical providers (Table 1). The overall regression was statistically significant ($R^2 = .236$, $F(2, 97) = 15.94$, $p = <.001$). It was found that levels of perceived social support reported on the Multidimensional Scale of Perceived Social Support (MSPSS) significantly predicted ranking obstetric providers as a barrier, neutral or motivating factor in the decision to disclose symptoms of PNA to their obstetric care provider ($\beta = .021$, $p = <.001$). This means that as the score increases by one point on the MSPSS scale, 0.02 points can be added to that score of perceived social support. For levels of perinatal anxiety, it was found that levels of anxiety reported on the Perinatal Anxiety Screening Scale (PASS) did not significantly predict ranking obstetric providers as a barrier, neutral or motivating factor in the decision to disclose symptoms of PNA to their obstetric care provider ($\beta = .003$, $p = .307$). In sum, level of perinatal anxiety is not a predictor of identifying obstetric providers as a barrier, neutral or motivating factor in the decision to seek help for PNA. However, perinatal women's level of perceived social support from their obstetric provider is a predictor of their ranking of their provider as a barrier, neutral or motivator in their decision to seek

help for symptoms of PNA.

Providers Serving as a Barrier, Neutral or Motivating Factor in Help Seeking & Disclosure of PNA to Obstetric Care Providers

A chi-square test of independence was performed to evaluate the relationship between rankings of a provider as a barrier, neutral or motivator in help seeking behavior and the disclosure of PNA directly to obstetric care providers.

The relationship between these variables is significant, $\chi^2(4, N = 98) = 16.99$, $p = .002$. Therefore, perinatal women's ranking of their provider as a barrier, neutral or motivator in the decision to seek help for symptoms of PNA is associated with their decision to disclose symptoms of PNA directly to the obstetric provider caring for them (Figure 1).

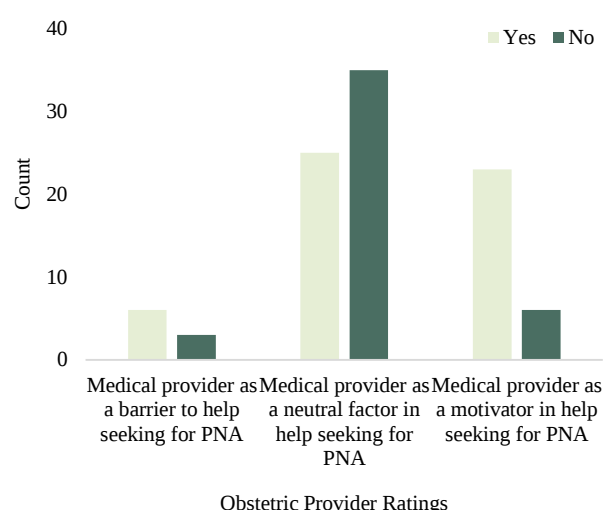


Figure 1: Chi Square Test of Independence: Perceived Levels and Disclosure of Symptoms to their Provider

Discussion

The aim of this study was to explore specific factors associated with or as predictors of help seeking behavior or disclosure of PNA.

Table 1: Multiple Linear Regression: Predicting Disclosure of Perinatal Anxiety Symptoms Based on Perceived Social Support and Severity of Perinatal Anxiety

Independent Variables	95% Confidence Interval					t	R	R ²	p Value
	Unstandardized Coefficient	Standard Error	Lower Bound	Upper Bound	Standardized Coefficient				
Perceived social support	0.021	0.004	0.014	0.028	0.506	5.64	0.501	0.236	0.001
Severity of anxiety	0.003	0.003	-0.003	0.010	0.092	1.028			0.307

The most surprising finding was an unsuccessful regression analysis to examine the seven statements in the *Subscale (Part 2)* requiring participants to rank specific fears, experiences, or expectations that most influenced their decision to disclose symptoms of PNA to their medical provider. The findings of this ranking scale were not as homogeneous as expected, and this speaks to the need to continue to deeply explore the unique fears, experiences and expectations that impact a perinatal woman's decision to disclose symptoms of PNA.

Similarly, the findings of the multiple linear regression indicated perceived level of social support as a predictor of rating a provider as a barrier, neutral or motivator in help seeking. However, perceived level of social support was not found to be a predictor of disclosure. In addition, there were several unsuccessful attempts to complete a binary logistic regression to evaluate the seven "influential factors", scores on the MSPSS, and score on the PASS. Therefore, all findings indicate perceived level of support, anxiety, specific factors in the decision to disclose and participants perception of their provider in the help seeking process; and yet, all findings on the act of disclosing were inconclusive. More research is needed to understand what factors predict the act of disclosure in order to aggressively address any adverse factors and promote any resiliency factors that may contribute to disclosure rates.

Implications

Findings from this study indicate a need to obtain a deeper understanding of the interactions between providers and perinatal patients to cultivate spaces where disclosure of symptoms is encouraged, and screening is a part of routine care. An interesting finding to support the need for further inquiry, are participant responses to identifying their provider as either a barrier, neutral, or motivating factor in their decision to disclose symptoms of perinatal anxiety. Of the 98 participants in this study, 60 participants or 61% identified their medical provider as a neutral factor in seeking help, 9 (9.2%) of participants identified their obstetric care provider as a barrier in their decision to seek help for PNA, and 29 (29.6%) identified their obstetric care provider as a motivating factor in their decision to seek help for symptoms of PNA. Obstetric providers should serve exclusively as a motivating factor in the decision to disclose symptoms of any perinatal mental health disorder, and these findings indicate a need to explore what attitudes, comfort levels or implicit messages are

occurring in these providers to patient interactions that remove the obstetric care provider from an active participant or motivator in perinatal women's decision to seek medical care for PNA. If providers are unable to provide this level of care, an interdisciplinary approach may need to be introduced to obstetric care settings to ensure that the psychosocial needs of these patients are being met.

Based on available qualitative data exploring women's experiences being dismissed by or having their symptoms minimized (15, 49, 50), having only 9 (9.2%) of participants identify their providers as a barrier to help seeking is a surprising finding. More research is needed here to deeply explore perinatal women's understanding of the impact of their interactions with their obstetric providers during the perinatal period. More research is needed to understand how the power dynamics, gender norms, stigma, and how diminished treatment for mental health has become normalized in the traditional biomedical model of care in the United States. Limitations of this study will be discussed below, but adding a qualitative question here could have offered an opportunity for participants to describe and offer insight into what interactions or experiences moved them to identify their provider as a barrier, neutral factor, or motivator in help seeking for PNA. Therefore, there is a need for more qualitative research analyzing the interactions with obstetric care providers and help seeking for perinatal mental health.

Limitations: The sample size of this study was a total of 98 women. In the future, if this study were to be replicated, a larger sample size would offer more meaningful data. The data collection period for this study was eight weeks. If time constraints were removed, a longer data collection could have offered a larger sample size. Another limitation of this study was a missing key measure that would have been meaningful to the findings for this study. In this survey, participants were asked if they disclosed symptoms of PNA to their obstetric care provider, and the severity of symptomatology indicating who should have been screened for PNA was also included in this survey, however, a question asking participants if they were screened for PNA was not included. The focus of this study was to explore obstetric care providers in their role to provide social support, serve as a resilience factor (i.e. motivating factor in the decision to seek help), but the rates of screening for participants would have been powerful to include, especially with women with high risk

scores and available literature indicating low rates of screening (2, 51).

Further research is needed to focus exclusively on specific obstetric care providers (i.e., board certified obstetrician) due to such stark differences in the interpersonal skills, roles, time with patients, and training of each discipline. For the purposes of this study, participants were given the following definition of a medical provider: Medical provider is a term used to include a range of providers such as obstetricians, maternal and fetal medicine providers, physicians, nurse practitioners or physician assistants. The broad definition utilized for this study may have made the identification of specific providers or experiences with specific providers difficult for participants. In addition, the nature of obstetric care can require one patient to see a variety of providers throughout their care, therefore, it may be difficult to assess perceived social support and their provider's role in help seeking due to differing experiences with each provider.

Conclusion

The findings of this study validate the critical role of social support from obstetric providers in the successful disclosure of perinatal anxiety. This work also demonstrates the profound impact obstetric care providers exert on the help seeking behavior of perinatal patients. Perinatal women's perceived level of social support from their obstetricians was significantly associated with how they ranked their obstetric provider (i.e., a barrier, neutral factor, motivating factor) in their decision to disclose perinatal anxiety symptoms during routine obstetric care visits. In addition, a significant relationship between the ranking of a provider and likelihood of disclosing symptoms of perinatal anxiety symptoms was also found. These findings suggest that the quality of rapport between obstetricians and their patients is critical in the successful disclosure of perinatal anxiety symptoms directly to the provider. Therefore, it is imperative that obstetric care providers emphasize providing social support, building relational trust and open communication around perinatal mental health to ensure early detection and successful treatment of perinatal anxiety.

Conflict of Interests

Authors declare no conflict of interests.

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