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Original Research Article

Perinatal depression physical symptoms assessment using PHQ9

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Abstract

Background: Perinatal depression is found in ten to twenty percent of women, which is defined as depression in women during pregnancy or in the postnatal period up to 12 months postpartum (Woody et al. 2017). Untreated depression is linked to long-term consequences for the mother, child, and family as well as unfavorable foetal and neonatal outcomes (Yeaton-Massey and Herrero, 2019). When evaluating depression using the EPDS, psychological symptoms could be more significant, while evaluating depression using the PHQ-9, physical symptoms might have a greater impact. In the present study the physical symptoms of perinatal depression is assessed among pregnant and nursing mothers using PHQ 9 in hospital setting.

Materials and Methods: The study was a prospective, single-center cross sectional research carried out with IEC approval at the GMCH, Secunderabad, TS, and India. The pregnant and new mothers attending Obstetrics and Gynecology outpatient and admitted to inpatient ward in GMCH were contacted and explained about the proposed research and those who are willing to participate and gave informed consent were included in the study. The total participants (N= 122) completed the standardized Telugu version of nine item Patient Health Questionnaire (PHQ9) with Chronbach's alpha of 0.9. The data was analysed to examine the levels of PND among the sample and the association between the predictor variables studied and perinatal depression.

Results: The results of the study showed that minimal (90.2%), mild (5.7%) to moderate (2.5%) levels of perinatal depression was found among the sample. There was significant association found between Perinatal depression and; locality (p=0.01), education of mother (p=0.01), occupation (0.10) and husband's age (0.10).

Conclusion: The pregnant and nursing mothers in the perinatal period need to be screened for depression in hospital setting using PHQ9 for early intervention and treatment to alleviate the problems related to PND on mother and children.

Keywords: Perinatal depression Pregnancy Postnatal period PHQ-9, Psychological symptoms, Physical symptoms Maternal mental health, Obstetrics, Gynecology screening

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1. Introduction

Perinatal depression is found in ten to twenty percent of women, which is defined as depression in women during pregnancy or in the postnatal period up to 12 months postpartum.[1] Untreated depression is linked to long-term consequences for the mother, child, and family as well as unfavorable foetal and neonatal outcomes.[2] Many guidelines support the universal screening for perinatal depression.[2-8] The Edinburgh Postnatal Depression Scale (EPDS) is the most widely suggested legacy screener with the most evidence behind it. But in addition, a number of specialists think that the Patient Health Questionnaire depression scale (PHQ-9) is a better option for screening for prenatal depression than the EPDS.[2,5-8]

The PHQ-9 is the depression measure that is most often used worldwide,[9] it has been proven to be accurate in a variety of age groups, medical conditions, and clinical settings. When evaluating depression using the EPDS, psychological symptoms could be more significant, while when evaluating depression using the PHQ-9, physical symptoms might have a greater impact. Clinicians in primary care and different specialty settings are very familiar with the PHQ-9 because of its broad integration into healthcare systems, electronic records, and depression screening standards.[10] The PHQ-9 seems to have two main advantages and a few disadvantages when used as a PND case-finding tool. First, the Diagnostic and Statistical Manual of Mental Disorders (DSM) major depressive episode (MDE)

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diagnostic criteria were used to design the PHQ-9. As a result, its detection of PND would resemble that of the MDE, or peripartum onset, which is a diagnosis that is commonly used in clinical practice. Second, the PHQ-9 appears to have a constant cut-off value of 10 for identifying clinically severe depression, which is also valid for PND, whereas the EPDS has many cut-off points for PND detection. As a result, the PHQ-9 is very simple to use in obstetric and postpartum care settings, among other healthcare settings.[11] In the present study the physical symptoms of perinatal depression was assessed among pregnant and nursing mothers using PHQ 9 in hospital setting.

2. Materials and Methods

The Institutional Ethics Committee of Gandhi Medical College and Hospital (GMCH), Secunderabad, Telengana State, India granted approval for this study (Rc.NO.IEC/GMC?2022/06/06, dated 01/12/2022). The study was a prospective, single-center cross sectional research carried out at the GMCH. The pregnant and new mothers aged between 18 -45 years, attending Obstetrics and Gynecology outpatient and inpatient ward in GMCH during July to December 2023 were contacted and explained about the proposed research and those who are willing to participate and gave informed consent were included in the study. The total participants (N= 122) completed the standardized Telugu version of nine item Patient Health Questionnaire (PHQ9) with Chronbach's alpha of 0.9. Among the PHQ scales, the PHQ9 is the regularly used scale in clinical setting, and has reflected standard psychometric properties in several research studies.[12] In addition data on demographic and obstetric factors was also collected, the data was analysed to examine the levels of PND, the difference and association between the predictor variables and PHQ9 scores among the sample using IBMSPSS 25.0 version.

3. Results

The Telugu version of PHQ9 tested (n=40) showed that Chronbach's α coefficient of was 0.9 indicating good internal consistency. The women understudy were categorized based on their levels of depression as per their PHQ9 scores; 1-4: minimal depression (90.2%), 5-9: mild depression (5.7%), 10-14: Moderate depression (2.5%),15-19: moderately severe depression (1.6%) and severe depression: 20-27 (0%), as shown in **Table 1**. The total mean PHQ9 scores of the sample was 1.73 and S.D was 3.21 indicating that the participants didn't very much in their responses. Bivariate Analysis (Associations) between Socio-demographic Characteristics and PHQ 9 (with t test/ F test) was used to study the difference among the sample with regard to twelve predictor variables studied as shown in **Table 2**. These results indicate that the women understudy didn't differ significantly for eleven predictor variables out of twelve, except for their locality in their PHQ9 scores. The Chi square test results presented in **Table 3**, shows the associations between Socio-demographic Variables and PHQ9 scores. A statistically significant relationship was found between PHQ 9 scores and; locality (p=0.014**), Respondent education (0.015**) at 0.01 level of significance. Furthermore, there was association observed between PHQ9 scores and respondent occupation (p=0.070) and husband age (p=0.094) at 0.10 level of significance.

Table 1: Levels of depression among the sample according to PHQ9

S.No	Levels of depression	PHQ9 score range	Frequency (Number)	Percentage (%)
1	Minimal depression	1-4	110	90.2
2	Mild depression	5-9	7	5.7
3	Moderate depression	10-14	3	2.5
4	Moderately severe depression	15-19	2	1.6
5	Severe depression	20-27	0	0.0
Total			122	100.0

Table 2: Difference among the sample according to socio-demographic variables and PHQ 9 scores N=122

S.No	Variables	Mean	SD	t value/F value	p=value	Levels of significance
1	Respondent age	1.1721	3.21333	t=0.866	0.715	Not Significant
2	Locality	1.1721	3.21333	F=2.452	0.035*	Significant at 0.05 level
3	Respondent education	1.1721	3.21333	F= 2.037	0.135	Not Significant
4	Respondent occupation	1.1721	3.21333	t= 0.436	0.664	Not Significant
5	Family income	1.1721	3.21333	F= 1.118	0.330	Not Significant
6	Religion	1.1721	3.21333	F= 0.444	0.642	Not Significant
7	Husband age	1.1721	3.21333	t= 0.815	0.417	Not Significant
8	Husband education	1.1721	3.21333	F= 0.528	0.591	Not Significant
9	Husband occupation	1.1721	3.21333	F= 1.829	0.146	Not Significant
10	Family type	1.1721	3.21333	t= 0.627	0.532	Not Significant
11	Gestation	1.1721	3.21333	F= 0.808	0.448	Not Significant
12	Gravida	1.1721	3.21333	F= 0.032	0.941	Not Significant

Table 3: Association between socio-demographic variables and PHQ9 scores

S.No	Variables	Chi-square value	Degrees of freedom	p-value	Levels of significance
1	Respondent age	0.336	1	0.561	Not Significant
2	Locality	11.267	2	0.004**	Significant at 0.01 level
3	Respondent education	8.376	2	0.015**	Significant at 0.01 level
4	Respondent occupation	2.859	1	0.070	Significant at 0.10 level
5	Family income	1.215	2	0.545	Not Significant
6	Religion	0.114	2	0.945	Not Significant
7	Husband age	2.542	1	0.094	Significant at 0.10 level
8	Husband education	2.922	2	0.232	Not Significant
9	Husband occupation	3.948	3	0.267	Not Significant
10	Family type	0.242	1	0.590	Not Significant
11	Gestation	3.502	2	0.174	Not Significant
12	Gravida	2.118	1	0.347	Not Significant

4. Discussion

In the present study the participants were screened for perinatal depression using PHQ9 scale, it was found that 90.2 percent had minimal depression, around 9.8 percent showed mild to moderately severe PND, which also accounts to a considerable percent in a sample size of N=122. However small is the percent of perinatal women with PND in a hospital setting, they need to be addressed by providing Psychiatric services to help them to overcome depression at early stages. Early identification of depression during prenatal stage and appropriate interventions and management strategies to alleviate the critical and adverse effects on mother and outcome of pregnancy are important.[13] Since all pregnant women experience many of the symptoms of perinatal depression, such as hormone changes, lack of sleep, and acute and chronic stress, it is often overlooked. Furthermore, since they experience an intense sense of guilt and humiliation about being "less of a mother" than they think they should be, new moms may refuse to acknowledge experiencing symptoms.[14]

The Bivariate analysis (t test/F test) results revealed that the respondents differed in their PHQ 9 scores with regard to their locality such as; rural, semi urban and urban significantly at 0.05 level and did not differ in PND levels with respect to other demographic and obstetric measures; Respondent age, Respondent education, Respondent occupation, Family income, Religion, Husband age, Husband education, Husband occupation, Family type, Gestation, Gravida. These findings are consistent with a Canadian study, which revealed that when compared to women living in other areas, the urban women were at increased risk for postnatal depression.[15] Moreover, family members might not recognize that their relative's or partner's actions indicate a clinical depression that needs to be treated. By screening patients who are pregnant or have just given birth for mood and anxiety disorders, primary care physicians can significantly improve the incidence of detection and diagnosis.[16,17]

The results of Chi-square test computed to examine the association between all the twelve predictor variables and PHQ 9 scores denoted a very significant association between PND and Respondent locality and Respondent education at 0.01 level and also a favourable relationship between respondent occupation and husband age at 0.10 level of significance. Which substantiates that some of the demographic variables (locality, education, occupation and husband age) influence the perinatal depression levels among pregnant and new mothers. In a study conducted among pregnant women in Bangalore, Bavle et al. (2016)[18] found that having education but not working outside the home may put a pregnant woman at risk for depression. Research from other low-income settings indicates that a woman's occupation has a significant correlation with depression: pregnant women who were housewives, worked in the private sector, or were employed as labourers or merchants were more likely to experience depression.[19,20] Furthermore, in low and middle income countries very often depression during perinatal period is under identified[21] and goes untreated [15] by health care professionals. Hence, brief depression screening scales usage during prenatal care itself is recommended.[22] Hence, screening for PND is recommended for all women in the perinatal period was recommended by several institutions like the US Preventive Services Task Force.[4,23,24] Pregnant women who satisfied the criteria for present depression were successfully detected by the PHQ-9, which was integrated into a multidimensional risk screening questionnaire. Women with sub diagnostic symptom levels were also identified by the moderate risk score cutoff as potentially benefiting from treatments aimed at reducing their anguish and enhancing the outcomes of their pregnancy. A wide range of screening tools for evaluation of depression were proposed and validated. However, there is dire need for selecting one standardized and globally accepted scale for application.[25] The 9-item version of the Patient Health Questionnaire (PHQ-9) found to be as the most tested, reliable screening scale for assessment of perinatal depression.[25,26] The PHQ-9 was widely validated as a depression screening tool in primary care services in

several countries and its reliability for psychometric assessment is well established.[27] As a screening tool for perinatal depression, Wanga et al.(2021)[28] discovered that the PHQ9 has good diagnostic operating characteristics; its sensitivity, specificity and are all >0.80, which is comparable to the performance of other well validated depression measures used across a variety of clinical conditions[26,29-32] it also seems that the PHQ-9 and the EPDS, which has historically been the legacy perinatal depression scale, perform similarly.

5. Conclusion

The present study reveals that the PHQ9 is a simple and very useful scale for assessing perinatal depression among pregnant and new mothers preliminarily in clinical/ hospital setting. However, small is the percentage women falling under the categories of depression need to be provided referral services to address the PND. Furthermore, this scale can be used in clinical, hospital and community settings as a preliminary measure to identify perinatal depression among pregnant and new mothers.

6. Declaration of Informed Consent of the Patients

All the participants of the pilot and main study gave informed consent

7. Ethical Approval

The study was accorded Ethical Committee IECno. SPMVV/Acad/IEC/CI/III/2019.

8. Source of Funding

None.

9. Conflicts of Interest

There are no conflicts of interest.

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