Research Paper

Sleep Quality Predicting Perinatal Anxiety among Primigravida and Multigravida

Malavika Vipul[1]*, Betty Paul[2]

ABSTRACT

Pregnancy is a period in which a woman goes through many changes and continues with the struggle of adapting and accommodating these changes. The mental, physical and social life of a woman alters through this period and it calls for keen attention. Perinatal anxiety is a concept that has been under researched as the major focus has always been on postnatal concerns and related care. The present study therefore tries to understand better about the perinatal anxiety and considers sleep quality as a factor that could predict perinatal anxiety among pregnant women. The study also taps on the experiences of women who are primigravida and multigravida to understand if this brings about any major differences in these variables of concern. The qualitative study was conducted on a sample of 61 pregnant women of Kerala with nearly equal proportions of multigravida and primigravida. The authors used Sleep Quality Scale (Yi et. al., 2006) and Perinatal Anxiety Screening Scale (Somerville et. al., 2014) to measure sleep quality and perinatal anxiety among pregnant women. The study concluded with the help of statistical reports that being multigravida or primigravida plays a major role in the experiences of sleep quality and perinatal anxiety. It was revealed that multigravida experiences higher levels of sleep disturbances along with higher perinatal anxiety. There is a positive correlation between these variables among pregnant women irrespective of them being primigravida or multigravida, and sleep disturbances proves to be a very major predictor among primigravida when compared with multigravida. Possible reasons, limitations and further possibilities of the study have also been discussed further in the article.

Keywords: Multigravida, Perinatal Anxiety, Primigravida, Sleep Quality

The period of pregnancy and the necessary physical and psychological care have been part of research studies over long periods of time. While focussing on the psychological care, the different mental conditions in the postpartum period has been the major focus which includes the postpartum depression, postpartum blues and postpartum psychosis. Even when these psychological concerns have been part of the academic and healthcare discussions, the extent to which the common people around the world are aware about any of these concerns are a matter of question (Knudson-Martin & Silverstein, 2009).

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[1]BSc. Psychology, Christ College Autonomous, Irinjalakuda, Kerala
[2]Assistant Professor, Christ College Autonomous, Irinjalakuda, Kerala
*Corresponding Author

Taking the Indian cultural context which in itself is a merge of a number of sub-cultures and traditions into focus, it gives a clear picture of a spatial arrangement in which people still continue to stay in line with the cultural beliefs and practices which includes the cases of medicine and healthcare (Jain & Levy, 2013). Even when alternative medicine is promoted by the World Health Organization, there is an innate tendency of people to neglect or remain away from novel understandings regarding matters of healthcare which can have detrimental effects on people (Greenhalgh et. al., 2015). Pregnancy has a number of traditional correlates of care which people continue to follow even with the additional consultation of modern healthcare practices. The rate of acceptance and understandability of the issues like postpartum depression or postpartum blues are therefore still a matter of concern within the Indian context (Savarimuthu et. al., 2010).

While the postnatal period is being given a certain amount of focus, the perinatal period which is equally significant is not being given enough concentration in the academic literature (Highet et. al., 2014). The perinatal period is considered to begin from the 20-28th week of pregnancy up to the 1-4 weeks after delivery. Considering that the adjustment to pregnancy and motherhood, as well as stress from the economy, the workplace, physical exertion, and interpersonal relationships, can all affect mothers' capability to recover from mental illness, the perinatal period is a time when women are particularly vulnerable to mental health concerns resulting from a wide range of influences (Hine et. al., 2018). A number of research reports show that the perinatal period is also accompanied by depression and anxiety among pregnant women which also leads to severe issues in both the child and the mother in their future. Perinatal anxiety and related depression have been significant topics of research in recent times and have revealed that its impact on children includes preterm birth, infant death, emotional problems in the future, conduct issues and special education needs (Bauer et. al., 2016). While these are the effects on the infant, the effects on the mother are also significant which includes disturbances in a wide range of emotional, physical and social functions (Thorseness et. al., 2018).

The prevalence of perinatal anxiety has been reported by a number of studies by focussing on the western population and therefore making a concrete conclusion on that basis do not appear much relevant within the Indian context. On a generalized basis, the reports showed 15-21 percent prevalence (Heron et. al., 2004) can be taken into consideration while there are other studies that report a prevalence of 39 percent (Leach et. al., 2017). But at the same time, it cannot be left unseen that a minimum of 10 percent of the pregnant population has reported anxiety issues during the perinatal period in most of the research works conducted across the world (Osness et. al., 2019). The presence of generalized anxiety disorder in the perinatal population has been given very little importance and research gives evidence that its prevalence is about 8.5-10.5 percent which is significantly higher than the prevalence in the normal population (Misri et. al., 2015).

Sleep disturbances are a common problem that is faced by pregnant women throughout their pregnancy and also during the postpartum period (Mindel & Jacobson, 2000). Sleep disturbances have been found to be the causal factor for depression, anxiety and other psychological disturbances of common people (Neckelmann et. al., 2007; Baglioni & Riemann, 2012). Similarly, sleep disturbances and quality of sleep are factors that influence the well-being of pregnant women (Okun et. al., 2013). Therefore, while trying to understand the causal factors of perinatal anxiety for the provision of proper psychological care to pregnant women it is highly necessary to keenly understand the role of sleep quality. Osness et. al (2019) has worked in this area recently and has explained that sleep

disturbances have a high chance of predicting the perinatal anxiety among pregnant women. Making a conclusive note on all these concepts, another concern arises, what if the woman is pregnant for the first time, or has already had the experience of pregnancy before? Will there be any significant difference in the psychological conditions connected with pregnancy?

Primigravida is a woman who is pregnant for the first time and multigravida is a woman who is pregnant not for the first time. The entire set of experiences could differ among primigravida and multigravida and therefore the conditions must be analysed separately in order to have a clear idea in providing psychological care for the pregnant women. The present study therefore tried to focus on both the primigravida and multigravida population and understand if there is a difference in the sleep quality and perinatal anxiety experienced by both the populations. It also aimed at exploring the relationship between these variables among both the groups of pregnant women, and understanding if there is a major difference between the two groups. Sleep quality is considered as a potential predictor of perinatal anxiety and the extent of prediction becomes a question to explore future within the primigravida and multigravida population.

Aim
The major aim of the present study is to understand if sleep quality is a factor that influences Perinatal anxiety among pregnant women and also understand if this relationship varies among primigravida and multigravida.

Need and Significance of the Study
Perinatal anxiety has been explained as an unfamiliar and under researched area (Folliard et. al., 2020) even within medical or psychological research and thereby the level of public acceptance and care for the same among pregnant women would be highly limited. The present study adds significantly to the literature and tries to bring about discourses within the Indian context about the perinatal anxiety experienced by pregnant women. Rodgers (1989) has explained that although the main source of worry is frequently related to parental issues, perinatal anxiety does not have a distinctive bodily or mental appearance. It is a bizarre idea that makes it difficult for medical experts to diagnose and treat patients, and it presents women with psychological difficulties related to the biopsychosocial aspects of adjusting to motherhood (Rodgers, 1989). This clearly shows the necessity for exploring more about the factors that cause perinatal anxiety in women to effectively provide them with treatment and psychological care. There have also been very limited studies that have tapped on the differences within the experiences of primigravida and multigravida, and thereby the study provides immense scope for developing significant and effective strategies for taking care of pregnant women.

Hypotheses
- There is no significant difference in sleep quality among primigravida and multigravida
- There is no significant difference in Perinatal anxiety among primigravida and multigravida
- There is no relationship between sleep quality and Perinatal anxiety among primigravida and multigravida
- Sleep quality does not predict Perinatal anxiety among primigravida and multigravida.

Sample
The study was conducted on a population of pregnant women which included both primigravida and multigravida of Kerala. The sample for the present study included a total 61 pregnant women in which 30 were primigravida while 31 were multigravida. The considered age group of the sample was 20-30 years with their Perinatal either being their first or the second experience. It was also made sure that none of the participants had any history of anxiety or sleep disorders. The sampling technique used was convenience sampling and snowball sampling in order to reach the population of the study.

Instruments
Two measures were used in this study,
- **Sleep Quality Scale (SQS):** The Sleep Quality Scale is a 28-item questionnaire developed by Yi et. al. (2006) to assess the subjective aspects of sleep quality. Six dimensions of sleep quality are being tapped through the 4-point Likert scale which includes sleep restoration, difficulty falling asleep and staying asleep, daytime symptoms, difficulties waking up, and sleep satisfaction. The scoring pattern of the scale is such that an increase in score shows that there are more sleep difficulties and the score ranges between 0 and 84. The scale has been revealed to have a high internal consistency with the Cronbach's alpha score being .92 and a test-retest reliability coefficient has been revealed to be .81. The test also has significant concurrent validity scores of .72.
- **Perinatal Anxiety Screening Scale (PASS):** The scale was developed to assess the anxiety experienced by pregnant women in their perinatal period by Somerville et. al. (2014). The scale consisted of 31 items with the answering pattern being 4-point Likert. The total score of the scale ranges between 0-93 with a higher score indicating higher perinatal anxiety. The test-retest reliability score of .74 reveals that the scale is reliable and the correlation between the scores of PASS and other Depression and Anxiety scales ranges between .74 to .83 proving the construct validity (Somerville et. al., 2014).

Procedure
A combined mode inclusive of offline and online means of data collection was employed in the present study. Either pen-paper forms or google forms with the personal data sheet and both the questionnaires along with the consent form were shared with the participants to collect the necessary data for quantitative analysis based on feasibility. The consent form was carefully made by providing all the necessary information regarding the ethical guidelines followed by the researchers and also gave them the confidence to quit at any point, or contact the researchers personally to clarify any of their doubts. The offline mode of data collection was done majorly by visiting the district hospital in Thrissur, Kerala. The data collected using the google forms and pen-paper forms were properly coded and scored as per the guidelines or norms of the tools used. The scored data was analysed statistically using SPSS version 25 to make the necessary conclusions regarding the hypotheses and objectives of the study.

To test the hypotheses of the study, Pearson's correlation, Simple linear regressions and Independent sample t-tests were used. The results of the tests were carefully examined to reach the appropriate conclusions. The kurtosis and skewness of the data was examined in the case of the sample considered and it was concluded that the data was normal, which led to the choice of the necessary parametric statistical tests for analysis. The results obtained

have been tabularly represented with necessary explanations to reach the conclusion of the study.

Table No. 1 t-test on Perinatal Anxiety and Sleep Quality among Primigravida and Multigravida.

Grouping variables	Primigravida			Multigravida			
Dependent variables	N	Mean	SD	N	Mean	SD	t-value
Perinatal Anxiety	30	33.83	11.28	31	45.87	12.39	-3.96**
Sleep Quality	30	34.06	9.51	31	44.54	8.68	-4.49**

** p < 0.01

The independent sample t-tests were conducted to know if there is a significant difference in the sleep quality and Perinatal anxiety among multigravida and primigravida. The test results clearly depict that Perinatal anxiety is higher in multigravida (M = 45.87, SD = 12.39) than in primigravida sample (M = 33.83, SD = 11.28). The difference in Perinatal anxiety among the two groups of pregnant women is also found to be highly significant (t = –3.96, p < 0.01). Even in the case of sleep quality, the difference between primigravida and multigravida is found to be significant (t = -4.49, p < 0.01) with the sleep quality being higher among multigravida sample (M = 44.54, SD = 8.68) when compared with primigravida sample (M = 34.06, SD = 9.51).

Table No. 2 Correlation between Perinatal Anxiety and Sleep Quality among Primigravida

Variables	1	2
1. Perinatal Anxiety	-	
2. Sleep Quality	.878**	-

N = 30, ** p < 0.01

Table No. 3 Linear regression predicting Perinatal Anxiety among Primigravida

	B	SE B	β
Constant	-1.63	3.79	
Sleep Quality	1.04	0.107	.878**

Note: R^2 = .771, ** p < .01, N = 30

The relationship between sleep quality and Perinatal anxiety among primigravida is analysed using the results of Pearson's correlation between the variables depicted in Table 2. It clearly depicts that there is a greatly significant positive correlation of high strength between the variables of concern among Primigravida (r = .878, p < 0.01). It should be taken into account that a lower score in sleep quality scale refers to lower experience of sleep disturbances, and thereby, the positive correlation between the variables mean that an increase in sleep disturbance is related with an increase in the Perinatal anxiety among primigravida. As the relationship between the variables are strong, the predictability of Perinatal anxiety is checked using simple linear regression and the results are depicted in Table 3. The table shows that 77.1 % of Perinatal anxiety is significantly predicted by sleep quality and a unit increase in sleep disturbances increases the Perinatal anxiety among primigravida by .878 units.

Table No. 4 Table representing correlation between Perinatal Anxiety and Sleep Quality among Multigravida

Variables	1	2
1. Perinatal Anxiety	-	
2. Sleep Quality	.436**	-

*N = 31, ** p < 0.01*

Table No. 5 Linear regression predicting Perinatal Anxiety among Multigravida

	B	SE B	β
Constant	18.15	10.81	
Sleep Quality	0.622	0.238	.436*

*Note: $R^2 = .190.$, * p < .05, N = 31*

The relationship between Perinatal Anxiety and Sleep Quality among multigravida was revealed through the Pearson's correlation results given in table 4. It is clearly evident that there is a significant positive correlation between these variables of moderate strength clarifying that an increase in the sleep quality issues brings about an increase in Perinatal anxiety among multigravida (r = .436, p < 0.05). It is noteworthy in this case that the correlation strengths between the similar variables among primigravida and multigravida are different which calls for regression analysis to understand the level of predictability of Perinatal anxiety by sleep quality among multigravida. Table 5 shows the results of the simple linear regression done to understand the said predictability and it proves that 19% of Perinatal anxiety is being predicted by the sleep quality of multigravida. A unit change in sleep quality predicts .43 units of change in the Perinatal anxiety.

DISCUSSION

Pregnancy and anxiety are two concepts which cannot be seen separately as it is obvious to understand that the pregnancy period for any woman would give them moments of anxiety which is the reason why it is said that pregnancy is 'inherently anxiety arousing' (Rowe & Fisher, 2015). To a certain extent this anxiety can be considered normal as the entire experience of pregnancy from the very beginning brings up a number of novel physical, psychological and social changes in a woman, to which they adapt and accommodate to move forward in the journey. However, it becomes an issue when pre-existing anxiety is made worse or when newly developed anxiety shows up suddenly during this vulnerable period which can bring about crippling results (Folliard et. al., 2020). The social pressure, the concerns around well-being of the mother and the infant, worries related to parenting, financial concerns and getting back to the flow of social life are all significant factors that can induce anxiety among pregnant women (Folliard et. al., 2020).

The final trimester of pregnancy and the first month after delivery is considered more crucial for developing perinatal anxiety which has a prevalence of more than 10 percent (Osness et. al., 2019). The present study therefore tried analysing the extent of perinatal anxiety experienced by primigravida and multigravida and also saw the impact of sleep quality on the perinatal anxiety experience. The higher rate of perinatal anxiety among the multigravida was one of the interesting findings of the study. To dig deeper on the factors that might be influencing such a high rate of anxiety among multigravida can be the extent of anticipatory anxiety which might develop from the previous experience of delivery and parenting; the concern of taking care of the infant along with their other children; the lack of support from the social world when compared with the first experience of pregnancy; anxiety regarding

the relationship between the siblings; and possible financial concerns. Devi et. al. (2018) had also worked on primigravida and multigravida women and concluded in the similar lines of high perinatal anxiety among multigravida through the qualitative study done with the help of interviews. The mentioned factors can also be considered responsible for the increased sleep disturbances experienced by multigravida women when compared with the sleep disturbances experienced by the primigravida.

Taking the biopsychosocial aspects of health, a focus onto the biological, psychological and social determinants of perinatal anxiety is important. The potential biological factors that can induce pregnancy anxiety include the pregnancy in itself, pregnancy related health conditions, medication, family history of psychological disturbances and sleep problems. Psychological conditions would include pessimism, unwanted/unexpected pregnancy and inner convictions about oneself. Similarly, adverse childhood experiences, dysfunctional relationships, being the victim of intimate partner abuse, having a low financial standing, or having low educational achievement are examples of social antecedents of perinatal anxiety (Folliard et. al., 2020). Among these many potential factors, gestational insomnia has been found to have a significant relationship with perinatal anxiety (Osness et. al., 2020). The results of the present study have also been in line with this finding, along with an interesting addition that it is a major predictor of perinatal anxiety among the primigravida than in the case of multigravida. As explained earlier, the living conditions of multigravida are far more different from that of primigravida which would have made sleep disturbances as the major predictor or perinatal anxiety among primigravida.

The finding of the study opens up the need for further research by stressing on the fact that sleep disturbances do not take up a major causal role in the case of multigravida and thereby there is a significant necessity to understand better about the factors that lead to perinatal anxiety in multigravida. It has been repeated over researches that it is highly important to identify the causal factors along with the signs of perinatal anxiety as they can have adverse effects on the infant and the mother (Bauer et. al., 2016, Thorseness et. al., 2018). Managing the sleeping conditions of the pregnant women and providing proper care regarding the sleep disturbances experienced by them can therefore be considered as an effective strategy for managing the perinatal anxiety among pregnant women. It should also be taken care that particularly in the case of multigravida, beyond the sleep concerns which are found to be comparatively higher than primigravida, all the different biopsychosocial determinants must be keenly analysed in order to manage and treat the perinatal anxiety better.

CONCLUSION

The study concluded that perinatal anxiety and problems in sleep quality are higher among multigravida while the positive relationship between the variables are stronger in the case of primigravida when compared with that of multigravida. The study also concludes that even when sleep quality predicts perinatal anxiety among pregnant women irrespective of being primigravida or multigravida, sleep quality predicts a very major percent of perinatal anxiety among primigravida while some other unknown factors are taking up the major causal role in the case of multigravida which calls for further research.

Limitations and Future Recommendations

One of the major limitations of the study was the very limited sample size of the study which disallows a concrete generalization of the research findings. Similarly, even when the population considered for the present study is the pregnant women of Kerala, the sample collected for the study belongs to a very limited part of the state which makes sure that the

data does not come from all over the place. To make clear–cut conclusions, a further large-scale research has to be conducted as a replication of the present study. Similarly, the use of first-hand language would be more effective than using English in the questionnaires. The results of the present study also open a clear space to look at the causal factors that influence the perinatal anxiety in the case of multigravida. Qualitative study could be more helpful in digging out the phenomenological experiences of pregnant women, especially the multigravida.

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