ORIGINAL RESEARCH

A study on the epidemiological factors associated with perceived stress among pregnant women in urban settings

[1]Dr. Vishu Tantia, [2]Dr. Prem Mittal, [3]Dr. Nishant Khurana

[1]Associate Professor, Department of Psychiatry, Dr. S.S. Tantia Medical College, Hospital and Research Centre, Sri Ganganagar, Rajasthan, India
[2]Associate Professor, Department of General Medicine, Dr. S.S. Tantia Medical College, Hospital and Research Centre, Sri Ganganagar, Rajasthan, India
[3]Associate Professor, Department of General Surgery, Dr. S.S. Tantia Medical College, Hospital and Research Centre, Sri Ganganagar, Rajasthan, India

Corresponding author
Dr. Nishant Khurana
Associate Professor, Department of General Surgery, Dr. S.S. Tantia Medical College, Hospital and Research Centre, Sri Ganganagar, Rajasthan, India

ABSTRACT
Background and objective: A woman is likely to experience stress at any time throughout her pregnancy. The sensations or ideas a person has regarding the amount of stress they are experiencing at a certain moment or during a specific time period are known as perceived stress. The purpose of this research was to evaluate the epidemiological correlates of prenatal women's felt stress. **Materials and methods:** 133 pregnant women who were enrolled in the prenatal clinic at the Urban Health Training Centre (UHTC) participated in a cross-sectional research. The Cohen felt Stress Scale-10 (PSS-10) self-designed, pre-tested proforma was used to collect pertinent data on felt stress and sociodemographic profile. **Results:** More over half (69, or 52%) of the 133 pregnant women reported moderate stress, while 19 (or 14%) reported severe stress. Our research found that the following factors predict the amount of stress in pregnant women: relationship with husband and in-laws (p=0.003, 0.000), verbal and physical abuse by the husband (p=0.000, 0.001), and overcrowding in the home (p=0.03). **Conclusion:** The research comes to the conclusion that stress risk seems to be reduced by more social, spouse, and in-law support. Pregnant women's stress levels may be reduced by educating them and their families about the value of family and husband support.
Keywords: Antenatal, Perceived stress, Pregnancy, Perceived stress score

INTRODUCTION

A condition of emotional well-being is pregnancy. The mother should be in excellent physical and mental health for the pregnancy to progress well. Numerous studies have shown that a negative mental state during pregnancy may have an impact on the outcome of the pregnancy (1). When a pregnant woman cannot handle the expectations, she experiences pregnancy stress, which manifests both physically and behaviourally (2). The sensations or thoughts that a person has about the amount of stress that an event or circumstance causes at a certain moment in time or over a specific amount of time are known as perceived stress (3). There are several elements at play at the moment, including confusion, panic, despair, anxiety, concern, stress, and sadness (4). According to one theory, antenatal maternal stress is a multifaceted phenomenon that arises from an imbalance between personal resources and environmental demands. It causes maladaptive coping and elevated stress perception (5). Women who suffer perceived stress during pregnancy may have poor obstetric outcomes, including preterm delivery, attention deficit hyperactivity disorder (ADHD), intrauterine growth retardation (IUGR), hyaline membrane illness, and impaired neural and cognitive development (6,7,8,9). From conception until day 280 of pregnancy and beyond, maternal health has a significant impact on the health of the unborn child. Therefore, it is crucial that the mother be in excellent physical condition and that the surroundings be conducive to healthy mental health. The problem of

1044

perceived stress during pregnancy must be addressed since stress during the prenatal period might have negative effects. In India, there aren't many research on the epidemiological variables linked to prenatal women's reported stress, and none have been conducted in Punjab. Therefore, we intended to carry out a research to evaluate the epidemiological correlates of reported stress in pregnant women. Pregnant women's reported stress levels and their associations with various epidemiological and social variables, such as lighting, ventilation, overcrowding, socioeconomic position, and relationships with husbands and other family members, have been evaluated.

MATERIAL & METHODS

- **Study period:** The study was conducted over a period of one year.
- **Study design:** This was a cross-sectional study design.
- **Study population:** Every pregnant woman enrolled in the prenatal clinic at the Urban Health Training Centre participated in the study.
o **Inclusion criteria:** Every pregnant woman who was willing to participate in the research went or enrolled at the Urban Health Training Center's prenatal clinic.
o **Exclusion criteria:** History of any psychiatric illness. Coexisting medical diseases.
- **Sampling:**
o Sample Size:
o Sample size was calculated using single proportion sample size formula:

Sampling technique
Simple random sampling was the method utilised in the research to get the sample. The four Auxiliary Nurse Midwives (ANM) of UHTC serving the urban field practice area of the Department of Community Medicine of G.G.S. Medical College & Hospital, ., provided a line list of all pregnant women who registered or visited UHTC. The research participants were chosen at random using computer-generated random numbers.

Methodology
Before the research started, four ANMs from UHTC provided a list of all the pregnant women who were registered at the Urban Health Training Centre. Following the acquisition of the line list from ANMs, each home including antennal women was assigned a unique identification number. This number served as the basis for the computer-generated random selection of the sample size. Informed permission was acquired from antennal women who met the inclusion and exclusion criteria after visiting a selected home. The socio demographic profile, environmental features, social/family issues, personal history, obstetrical history, gynaecological history, physical health using a self-designed questionnaire, and perceived stress using Cohen's PSS-10 were all the subjects of one-on-one interviews.
The next home was contacted right away after informed consent was denied. If the home was locked or the pregnant lady was not there, the same process was carried out.

Data analysis
Microsoft Excel was used to input the survey data, while SPSS software was used for analysis. Frequencies, tables, and figures were used to display the descriptive data. The Chi square and Fischer exact tests were used to assess the association between felt stress and clinical and sociodemographic traits. Significant values were defined as $p < 0.05$.

RESULTS
Socio- demographic Factor
Table: 1 Distribution of participants according to Socio-demographic characteristics (n=133)

Variable	Category	Frequency (n)	Percentage (%)
1. Age (in years)	15 – <25	52	39.1
	≥25-<34	71	53.4
	≥34-45	10	7.5
2. Religion	Hindu	59	44.4
	Sikh	72	54.1
	Muslims	0	0
	Others	2	1.5
3. Education of women	Illiterate	14	10.5
	Primary Education	10	7.5
	Middle Class	27	20.3
	10th Pass	19	14.2
	12th Pass	34	25.6
	duation and above	29	21.9
4. Education of Husband	Illiterate	12	9.0
	Primary Education	8	6.0

	Middle Class	25	18.8
	10th Pass	26	19.6
	12th Pass	38	28.6
	duation and above	24	18.0
5. Socio economic Status (MKSS)*	Upper	7	5.3
	Upper Middle	13	9.8
	Lower Middle	16	12.0
	Upper Lower	92	69.2
	Lower	5	3.7
6. Type of family	Joint family	90	67.7
	Nuclear family	43	32.3
7. Family size	1-4	53	39.9
	5-8	70	52.6
	9-12	8	6.0
	13-16	2	1.5
8. No. of children	0	50	37.6
	1	64	48.1
	2	14	10.5
	3	5	3.8

According to this table, 71 (53.4%) of the research participants were between the ages of 25 and 34. By religion, the majority of participants were Sikhs (72, 54.1%), followed by Hindus (59, 44.4%). In terms of the participants' education, 34 (25.6%) and their spouses (38, 28.0%) were qualified up to the 12th grade. The majority of participants—70, or 52.6%— had families with sizes ranging from five to eight.

PERCEIVED STRESS
Using the felt Stress Scale-10, it was found that over half of the research participants—69, or 52%—had moderate, 45, or 34%, low, and 19 (or 14%) high levels of felt stress.

Table: 5 Epidemiological correlates of perceived stress among antenatal women

Variable	Category	Perceived Stress			P- Value
		Low	**moderate**	**High**	
1. Age (in years)	15-<25	18	25	9	0.407
	≥25-<34	24	40	7	
	≥34-45	3	4	3	
2. Type of family	Nuclear	12	21	10	0.113
	Joint	33	48	9	
3. Socio-economic status	Upper	4	3	0	0.359
	Upper Middle	8	4	1	
	Lower Middle	6	8	2	
	Upper Lower	26	50	16	
	Lower	1	4	0	
4. Overcrowding	Present	13	24	12	0.027
	Absent	32	45	7	
Do you have good relationship with your husband	Yes	44	67	14	0.003
	No	1	2	5	
6. Husband verbal Abuse	Yes	0	11	13	0.000
	No	45	58	6	
7. Husband physical abuse	Yes	1	3	6	0.001
	No	44	66	13	
Do you have good relationship with your in-laws	Yes	40	58	7	0.000
	No	5	11	12	
9. Any Addiction in the family	Yes	3	8	5	0.091
	No	42	61	14	
10. Do you keep money aside for yourself	Yes	16	17	1	0.032
	No	29	52	18	
11. History of infertility	Present	9	9	1	0.335
	Absent	36	60	18	

12. Gestational age (in weeks)	0-12	9	11	5	0.840
	13-27	21	33	9	
	28-40	15	25	5	
13. Vaginal Discharge	Yes	7	15	5	0.552
	No	38	54	14	
14. Dysuria	Yes	4	7	4	
	No	41	62	15	0.376
15. Pain in abdomen	Yes	3	21	7	0.002
	No	42	48	12	

Using the Fischer exact test and the Chi square test, many epidemiological correlations of prenatal women's reported stress were identified. The following factors were found to be statistically significant: whether or not they have a good relationship with their husband (p=0.003), whether or not their husband verbally and physically abuses them (p=0.001), whether or not they have a good relationship with their in-laws (p=0.000), whether or not they set aside money for themselves (p=0.032), whether or not the house is overcrowded (p=0.027), and whether or not they have abdominal pain (p=0.02). However, it was shown that several characteristics were statistically insignificant, including age (p=0.407), family type (p=0.113), socioeconomic level (p=0.359), history of infertility (p=0.335), and gestational age (p=0.840).

DISCUSSION

The majority of women in the present study—69, or 52%—perceived moderate levels of stress. Forty-five (34%) of the research participants reported low felt stress, whereas 19 (14%) reported severe perceived stress. Roy P. and Andurkar S. did a similar research in Aurangabad and found that the majority of participants—122, or 43.5%—had severe stress. Stress levels were low in 71 (25.4%) and moderate in 87 (31.1%) (10) people. However, the majority of participants (53.3%) in the research by Yarube I et al. in Kano, Nigeria, reported low levels of stress, while the remaining respondents (46.7%) reported moderate levels of stress, and none of the participants reported intermediate levels of stress (11). The sociocultural and regional differences may be the source of the discrepancy in the outcome. The present research found a statistically significant correlation between felt stress and verbal abuse (p=0.000) and physical abuse (p=0.001) from the spouse. According to a research by Yarube I et al. in Kano, Nigeria, there was a statistically significant correlation between felt stress and both verbal and physical abuse from the spouse (p=0.001) (11). But according to a study by Daro Kable W et al. in Ethiopia, there was no statistically significant (p=0.09) link between spouse abuse and felt stress (12). The age of research participants and reported stress did not statistically significantly correlate in this investigation (p=0.407). In contrast, younger women in a research by Lauc Y et al. in Macao, China, experienced significant levels of stress (p=0.002) (13). This may be because the majority of research participants in the present study were between the ages of 25 and 34. Perceived stress and socioeconomic position were shown to be statistically unrelated (p=0.359). As a statistically negligible connection with socioeconomic class was found (0.803), this result was in line with research done in Aurangabad by Roy P and Andurkar S. In the current research, a statistically insignificant correlation (p=0.091) was found between perceived stress and any family addiction (alcohol, tobacco, or any other). Roy P. and Andurkar S.'s study in Aurangabad did find a statistically significant correlation between stress and spouse alcohol use (p=0.001) (10). This might be because just alcohol intake was taken into account in previous studies.

CONCLUSION

The main elements that affected the degree of perceived stress were family issues, such as the spouse's verbal and physical abuse and the relationship with the in-laws and husband. Overcrowding in the home was identified as an environmental factor that was statistically significant. This demonstrates how pregnant women may feel more stressed when there is a lack of privacy in the home. When it came to felt stress, obstetrical characteristics including gestational age (in weeks), history of infertility, and history of abortions were statistically irrelevant. Given that prenatal women's perceptions of stress might have a negative impact on their pregnancy outcomes, screening for perceived stress should be part of standard prenatal treatment. The lady and her family members need to get counselling so they understand how their actions during pregnancy might negatively impact the mother and the foetus by causing stress in the mother.

REFERENCES

1. Boakye-Yiadom A, Shittu S, Dutt J, Dapare P, Alhassan A. Perceived stress and anxiety among Ghanaian pregnant women. J Medical and Biomed Sci. 2015;4(2):29-7.
2. Shenoy TH, K. Remash, T. Sheela Shenoy. Screening for perceived stress among pregnant women availing antenatal care at a tertiary care teaching institution in Kerala, India. Int J Reprod Contracept Obstet Gynecol. 2020;9(8):3279–7.
3. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. J Health Soc Behav.

1047

1983;24(4):385–6.

4. Deo BK, Sapkota N, Kumar R, Shakya DR, Thakur A, Lama S. A Study on Pregnancy, Perceived Stress and Depression. JBPKIHS. 2020;3(1):79–7.

5. Schetter CD. Psychological science on pregnancy: Stress processes, biopsychosocial models, and emerging research issues. Annu Rev Psychol. 2011;62:531–58.

6. Thongsomboon W, Kaewkiattikun K, Kerdcharoen N. Perceived stress and associated factors among pregnant women attending antenatal care in urban Thailand. Psychol Res Behav Manag. 2020;13:1115–22.

7. Traylor CS, Johnson JD, Kimmel MC, Manuck TA. Effects of psychological stress on adverse pregnancy outcomes and nonpharmacologic approaches for reduction: an expert review. Am J Obstet Gynecol MFM. 2020;2(4):1-6.

8. Najjarzadeh M, Abbasalizadeh S, Mohammad-Alizadeh- Charandabi S, Asghari- Jafarabadi M, Mirghafourvand M. Perceived stress and its predictors in women with threatened preterm labour: A cross-sectional study. Nurs Open. 2022;9(1):210–21.

9. Dowell J, Elser BA, Schroeder RE, Stevens HE. Cellular stress mechanisms of prenatal maternal stress: heat shock factors and oxidative stress HHS Public Access. Neurosci Lett. 2019;709: 34368.

10. Roy P, Andurkar S. Assessment of stress and associated factors among pregnant women availing antenatal care at government medical college and hospital, aurangabad, india. Int J Creat Res Thoughts. 2021;9(6):58-8.

11. Yarube IU, Sani L, Saleh A, Alhassan. Assessment of perceived stress amongst primigravidae attending an ante natal clinic in Kano, Nigeria. J Afr Assoc Physiol Sci. 2018;6(1):46–1.

12. Daro Kabale W, Bekele GG, Yohannes E, Gonfa N. Perceived Stress and Associated Factors Among Pregnant Women in Western Ethiopia: Community Based Cross- Sectional Study, 2021. J Obstet Gynaecol Reprod Med. 2023;7(3):1–8.

13. Lau Y, Yin L. Maternal, obstetric variables, perceived stress and health-related quality of life among pregnant women in Macao, China. Midwifery. 2011;27(5):668–73.