

Stress and Coping Strategies among Pregnant Women attending Antenatal Clinic of a Teaching Hospital in eastern Nepal

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ABSTRACT

Aim: To find out the stress and coping strategies among pregnant women attending antenatal clinic.

Methods: A descriptive, cross-sectional research design was used for the study. The sample was taken from an antenatal outpatient department of Nobel Medical College Teaching Hospital. A total of 300 pregnant women was selected by using non-probability consecutive sampling technique. Data was collected by using standard tool, Pregnancy Stress Rating Scale (PSRS) and Brief Coping. Data analysis was done by descriptive and inferential statistics.

Results: The study revealed that 40.7% of the respondents experienced a high level of stress and 84.0% of respondents had used adequate coping strategies where "self-distraction" was the most used coping strategy by the respondents with a mean score (2.99±.56). Stress and coping strategies had positive mild correlation ($r=0.040$).

Conclusions: More than one-third of the respondents had experienced a high-level stress and the majority of the respondents had used adaptive coping strategies. The different methods of coping strategies during pregnancy should be expanded as per the best available evidence to lower stress and other adverse outcomes of stress.

Keywords: Brief cope, coping strategies, pregnancy stress rating scale, stress

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INTRODUCTION

Pregnancy is a time of great happiness and fulfillment for most women.¹ It is one of the most critical periods in a woman's life, which can lead to psychopathological disorders like maternal stress due to major changes in physiological, psychological and social roles of the family.² Stress during pregnancy was associated with adverse outcomes, including premature birth and low birth weight, which are major causes of infant mortality, cerebral palsy, developmental delays, vision and hearing loss.

These negative birth outcomes affect the transition of women to motherhood and interaction between mother and child, which is important for and leads to optimal growth and development of children.³ The pregnant women require adequate coping strategies to cope with emerging stressors during pregnancy.²

Studies performed in England and Sweden stated that stress during pregnancy was 33% and 7% respectively.⁴ The study conducted in Zimbabwe reported that 37% pregnant mothers were stressed. Regarding coping with stress, 63.3% adopted either crying, ignoring or praying whereas 16.6% did something active like adjusting budget, seeking counseling for stressing issues.⁵ The women using poor coping strategies have higher risk of experiencing adverse pregnancy outcome and postpartum depression.^{6,7} The study conducted in Nepal also showed that stress during pregnancy was prevalent up to 34%.⁸

Regardless of the greater prevalence of stress and its adverse effect on mother and child, research on pregnancy specified stress and coping strategies to prevent those adverse outcomes is still underdeveloped. The objective of the study was

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to find out the stress and coping strategies among pregnant women.

METHODS

The descriptive cross-sectional research study design was used to identify the stress and coping strategies among pregnant women attending the antenatal clinic. The study was carried out at Nobel Medical College Teaching Hospital (NoMCTH), Biratnagar. The required sample for this study was calculated using Cochran, 1977 formula for the finite population-based on one-month data of a number of antenatal mothers who visited the antenatal clinic of NoMCTH. First, the sample size was determined using the formula for prevalence ($p=0.35$) followed by correction for finite population and non-response error of 10% to yield 300 samples.

The non-probability consecutive sampling technique was used for the selection of pregnant women in the second and third trimester. The women with multiple pregnancies and known comorbidities were excluded. After reviewing related literature using various online and offline resources a semi-structured interview questionnaire for socio demographic characteristic and personal factors of participants was developed.

Furthermore, to determine the prevalence of stress, the Pregnancy Stress Rating Scale (PSRS)⁹ was adopted. The PSRS includes 32-items. Items were rated on a 5-point Likert scale which range from 0 (definitely no) to 4 (very severe). The sum total of all items scores provided the prenatal stress score; higher values indicated higher perceived prenatal stress. The summed scores for the five factors formed the global PSRS 32 score (range= 0-128). The stress score was classified as: low stress (score from 0-65) and high stress (score from 66-128).

Additionally, to determine the utilization of coping strategies by pregnant women, a Brief Coping Scale¹⁰ was used. BRIEF COPE Inventory was developed by Carver (1977) which is an abbreviated version of the COPE inventory. The Brief Coping comprised 14 subscales of two items each with 28 items under three major domains. The three domains are emotion-focused, problem-focused and dysfunctional coping strategies. Emotion-focused coping strategies include (religion, positive reframing, and use of emotional support, acceptance, and humor). Problem-focused

coping strategies include (use of instrumental support, active coping, and planning). Dysfunctional-coping strategies include (self-distraction, denial, venting, substance use, behavioral disengagement, self-blame). This tool is a 4- rating Likert scale in which each item has 4 options (1-not doing at all to 4-doing this a lot). Responses are then added to obtain a total score. The higher score specified the higher use of the coping strategies. Coping score was classified as: maladaptive coping (score from 28-56) and adaptive coping (score from 57-112).¹⁰

PSRS and Brief Coping is valid and reliable tool. PSRS Reliability, Cronbach's alpha: 0.87.⁹ Brief Coping Reliability, Cronbach's alpha: 0.86.¹¹

The research instrument content validity was set by a subject expert, consultant and linguistic professionals. Two stage back translation of research instrument was done. The research instrument was pre tested among 27 pregnant women who met the inclusion criteria at the antenatal clinic of NoMCTH, Biratnagar which were excluded in the data collection. The internal consistency of instrument was established by Cronbach's Alpha test where the test results were, PSRS Reliability, Cronbach's alpha: 0.89 and Brief Coping Reliability, Cronbach's alpha: 0.78.

Data were collected after getting ethical clearance from the Institutional Review Board of NHRC and approval letter from Nobel Medical College Teaching Hospital, Biratnagar. Informed written consent was obtained from respondents before interviewing them. The data were collected from 2019/08/15 – 2019/10/30 in day shift and 6-7 respondents were interviewed per day taking 20-25 minutes for one respondents. The data were analyzed using the IBM SPSS version 20.0 for analysis. Data was summarized using descriptive statistics i.e. frequency, percentage, mean and standard deviation to assess stress and coping strategies. Chi square test was checked between dependent and independent variables to establish associations. Pearson's correlation coefficient test was used to find out the relationship between the dependent variables.

RESULTS

The respondents' mean age was 25.23±4.58 years. There were 71.0% Hindu by religion; 39.7% of had completed secondary level education 43.3% had

monthly family income of NPR 20,000-30,000; 68.0% live in a joint family; and 35.3% were employed. By the pregnancy attributes, 79.3% had planned pregnancy; 50.7% were in the third trimester of pregnancy; 56.3% were multigravida; and 63.3% had a spontaneous vaginal delivery and 24.3% had a history of abortion.

Among five dimensions of PSRS scale, the maternal role identification stress dimension had a greater mean percentage ($2.41 \pm .38$). Concerning the coping strategies used by the pregnant woman while they were in stress, the problem-focused domain of coping strategies had higher mean score ($2.39 \pm .31$) followed by emotion-focused coping strategies with mean score $2.25 \pm .28$ and dysfunctional domain of coping strategies with mean score $1.89 \pm .22$. Three-fifth of them had low level of stress and 84.0% used adaptive coping strategies while only 16.0% used maladaptive coping strategies while they face stress [Table-1].

Table-1: Level of Stress and type of coping among Pregnant Women (n=300)

PSRS Domains	Level and type	Number	Percent
Level of stress	Low Stress (0-64)	178	59.3
	High Stress (65-128)	122	40.7
Level of Coping	Adaptive Coping (57-112)	252	84.0
	Maladaptive Coping (28-56)	48	16.0

There was statistically significant association of level of stress with age of respondents ($p=0.011$), educational status ($p=0.025$), monthly income ($p=0.015$), type of family ($p=0.002$), employment status ($p=0.003$) and type of marriage (0.008); but there was no significant association of level of stress with other socio-demographic and personal variables [Table-2].

Table-2: Association of Selected Demographic and Personal Characteristics with Stress Levels of Pregnant Women

Characteristics	Stress Level		X ²	p Value
	Low Stress n (%)	High Stress n (%)		
Age				0.011*
≤20	25 (44.6)	31 (55.4)	11.06	
21-25	53 (55.2)	43 (44.8)		
26-30	70 (70.7)	29 (29.3)		
31+	30 (61.3)	19 (38.7)		
Educational Status				
Upto Secondary Level	71 (50)	71 (50)	12.86	0.025*
Above Secondary Level	107 (67.7)	51 (32.3)		
Monthly Family Income				
Less than 20000	55 (49.5)	56 (50.5)	10.51	0.015*
More than 20000	123 (65.1)	66 (34.9)		
Type of Family				
Nuclear Family	69 (71.8)	27 (28.2)	9.2	0.002*
Joint Family	109 (53.4)	95 (46.6)		
Employment Status				
Yes	75 (70.8)	31 (29.2)	8.86	0.003*
No	103 (53.0)	91 (47.0)		
Type of Marriage				
Arranged Marriage	131 (64.5)	72 (35.5)	7.03	0.008*
Love marriage	47 (48.5)	50 (51.5)		
Type of Pregnancy				
Planned Pregnancy	137 (57.6)	101 (42.4)	1.49	0.221
Unplanned Pregnancy	41 (66.1)	21 (33.9)		
Gravida				

Characteristics	Stress Level		X ²	p Value
	Low Stress n (%)	High Stress n (%)		
Primigravida	74 (56.5)	57 (43.5)	0.78	0.377
Multigravida	104 (61.5)	65 (38.5)		

Note: *Chi square test: Significant ($P < 0.05$ at 95% confidence level)

There was statistically significant association of coping strategies with educational status ($p = < 0.001$), monthly family income ($p = 0.014$), type of family ($p = < 0.001$), type of pregnancy ($p = 0.002$) and mode of previous delivery ($p = 0.022$); but there was no significant association of coping strategies with other socio-demographic and personal variables [Table-3].

Table-3: Association of Selected Demographic and Personal Characteristics with Coping Levels of Pregnant Women

Characteristics	Coping Level		X ²	p-value
	Maladaptive Coping	Adaptive Coping		
Age				
</20	7 (12.5)	49 (87.5)	4.64	0.192
21-25	20 (20.8)	76 (79.2)		
26-30	11 (11.1)	88 (88.9)		
31+	10 (20.4)	39 (79.6)		
Educational Status				
Up to Secondary Level	41 (28.9)	101 (71.1)	33.24	<0.001*
Above Secondary Level	7 (0.6)	151 (99.4)		
Monthly Family Income				
Less than 20000	23 (20.7)	88 (79.3)	10.57	0.014*
More than 20000	25 (13.2)	164 (86.8)		
Type of Family				
Nuclear Family	3 (3.1)	93 (96.9)	17.41	<0.001*
Joint Family	45 (22.1)	159 (77.9)		
Employment Status				
Yes	11 (10.4)	95 (89.6)	3.85	0.050
No	37 (19.1)	157 (80.9)		
Type of Pregnancy				
Planned Pregnancy	30 (12.6)	208 (87.4)	9.87	0.002*
Unplanned Pregnancy	18 (29)	44 (71)		
Mode of Previous Delivery				
Normal Delivery	26 (24.3)	81 (75.7)	7.6	0.022*
Cesarean Section	3 (6)	47 (94)		
Instrumental delivery	2 (16.7)	10 (83.3)		

Note: *Chi square test: Significant ($P < 0.05$ at 95% confidence level)

The Pearson's correlation coefficient which is calculated to find out the bivariate relationship among stress and coping strategies among pregnant women, the findings showed a mild positive relationship between stress and coping strategies among pregnant women ($r = 0.04$). Likewise, there was no significant

relationship of emotion-focused ($r=0.05$) coping strategies with stress at a 95% confidence interval while dysfunctional domain ($r=0.131$) and problem-

focused ($r=-0.124$) were significantly related to stress [Table-4].

Table-4: Correlation between Stress and Coping Strategies of Pregnant Women

Stress	Coping Domain				
	Overall Stress	Problem focused	Emotion focused	Dysfunctional	Overall Coping
Pearson Correlation	1	-0.124*	0.015	.131*	0.04

*Correlation is significant at the 0.05 level (2-tailed)

DISCUSSION

The current study shows that more than half (59.3%) of pregnant women experienced low stress and 40.7% of the respondents experienced a high level of stress. These findings are nearly similar to the study conducted in a selected tertiary maternity hospital of Kathmandu, Nepal in which more than two-thirds (35.0%) pregnant women had experienced high stress⁸ Study by Ahmed et al¹¹ also showed that 33.4% of pregnant women had perceived high stress. Another study by Nyamakura et al⁵ also showed that 37.0% pregnant women had exhibited maternal stress which is consistent to the current study.

According to this study finding, the stress of the respondents was compared between different selected variables of the respondents. Among all variables age of respondents, educational status, monthly income, type of family, employment status and type of marriage was found to be significant with the stress of respondents. Ahmed et al¹² conducted a correlational study which showed the significant association between stress and income. Correspondingly, another study conducted by Engidaw et al¹³ also showed that age of the respondents, occupation status and marital status were significantly associated with perceived stress which is similar to current study.

In the current study, the mean Score of stress was 61.48 (± 10.07) out of score 128. The finding is nearly similar to the study carried by Chen⁹ which showed the mean score of stress was 53.96 (± 21.04).

In the present study, dimension 1 of PSRS (Stress from seeking safe passage for mother and child through pregnancy, labor, and delivery) and dimension 3 (stress from the maternal role identification) scores of PSRS were significantly higher among pregnant women which is consistent with the result of the

study carried by Zhou et al.¹⁴

In the current study, 84.0% had used adoptive coping strategies while 16.0% had used maladaptive coping strategies. The most commonly used coping strategies were "Self -distraction" followed by "Use of emotional support", "Use of instrumental support" "Positive reframing", "Venting" and "Religion". The less common strategies used was "Substance use" followed by humor. The finding is inconsistent with the study finding of Sarani et al² that showed the most commonly used coping strategies were positive spiritual strategies followed by avoidance strategies and planned preparedness strategies. This constraint might be due to the difference in perception of stress especially in the setting of a different country.

In the current study, the coping strategies that respondents used were compared between different selected variables of the respondents. Among all variables, educational status, religion, family income, type of family was found to be significant for influencing the coping strategies used by the respondents. The finding was similar to the study finding of Kotze et al¹⁵ that showed economic status and education level are associated with adaptive coping strategies.

The findings of the present study showed a mild positive relationship between stress and coping strategies among pregnant women ($r=0.04$). Faramarzi et al.¹⁶ carried the cross-sectional study which showed no significant relationship between perceived pregnancy stress and coping strategies Likewise, in the current study there was no significant relationship of emotion-focused ($r=0.05$) coping strategies with stress at 95.0% confidence interval while dysfunctional domain ($r=0.131$) and problem-focused ($r=-0.124$) are significantly related with stress. The study findings of study by Sarani et

al.³ showed planned readiness strategy and positive spiritual strategy had a significant inverse correlation with the perceived stress levels but the dysfunctional domain had a direct and significant relationship with perceived stress which is consistent with current study.

The limitation of the study is that, our study was conducted in one of the advanced centers in the readily accessible areas of the country. The findings of this study may not be generalized among the women of Nepal. So, further researches in large scale need to be conducted before generalizing the results among the Nepalese women.

CONCLUSIONS

More than one-third of the respondents experienced high stress and concerning the coping strategies, the majority of the respondents had adequate coping

strategies. The results indicates that the age of respondents, educational status, religion, monthly income, type of family, employment status and type of marriage were a predictor of stress during pregnancy and were too the predictor to utilization of adequate coping strategies. Hence, health care providers should give due attention to the screening of stress from the first trimester so that the likelihood of pregnancy- specific perceived stress will be reduced as well as providing counseling to women on various aspect of pregnancy, possible complications related to pregnancy which may occur reduces the stress level which in turn reduces the adverse stress related outcomes. Likewise, the different methods of coping strategies should be expanded which may influence birth outcomes by serving to minimize negative emotional, cognitive, behavioral and physiological responses to stressors.

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