

## Analytical Cross-Sectional Survey Assessing Stress and Psychiatric Morbidity in Pregnant and Non-Pregnant Women

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### Abstract

**Aim:** The aim of the present study was to assess stress and psychiatric morbidity among a group of pregnant versus non-pregnant women in the reproductive age group using validated research tools.

**Methods:** This was a comparative cross-sectional study among 500 pregnant and 200 non-pregnant at department of psychiatry using an interviewer-administered questionnaire. The study was conducted among women aged 18 to 45 years

**Results:** A total of 700 women of which 500 (71.43%) were pregnant and 200 (28.57%) were non-pregnant participated in the study. Their mean age was  $30.1 \pm 5.4$  and  $29.6 \pm 8.4$  years respectively. A significantly higher proportion 400 (80%) of the pregnant women compared with 104 (52%) were in the 25–39 age category ( $p < 0.001$ ). A higher proportion of the pregnant women were married 475 (95%) compared with the non-pregnant women 120 (60%) which was statistically significant ( $p < 0.001$ ). Among pregnant women, sociodemographic factors significantly associated with psychiatric morbidity. The highest proportion of psychiatric morbidity was found in women attending tertiary facilities, followed by secondary facilities and the least was in women from primary care facilities. In non-pregnant women, correlates of psychiatric morbidity were mainly family characteristics.

**Conclusion:** The study concluded both working and non-working antenatal mothers were at more risk of developing stress. All antenatal mothers participated in this study had mild stress and there was significant difference between working and non-working antenatal mothers stress score. Psychiatric morbidity is high among women of reproductive age group with higher rates among pregnant women.

**Keywords:** Psychiatric morbidity; stress morbidity; women; pregnant; non-pregnant.

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### Introduction

Pregnancy is considered a sanctified spiritual event for women in many countries, specifically in developing countries where they get enormous respect for being pregnant. [1] However, pregnancy is a complex and highly emotional period in the lives of most women. There are many transformations that occur during this period other than the observed physiological ones, including psychological and social effects. Mothers could start experiencing these changes from the very beginning of pregnancy until the postpartum period. Every new mother is prone to encountering frequent mood changes and emotional disturbances such as stress and/or mixed anxiety-depressive symptoms. Compromised maternal mental health in

the perinatal period may result in physical complications for the newborn. [2] Maternal stress is associated with adverse effects on pregnancy, including preeclampsia, preterm birth, low birth weight, and neonatal morbidity. [3] Prenatal depression and anxiety are also associated with preterm labor and, hence, with low birth weight; the latter also increases the risk of hypertension and pre-eclampsia, as well as the risk of cesarean section (C-section) delivery. [4,5] Multiple studies have also shown that prenatal anxiety and depression are related to an increased incidence of nausea and vomiting during pregnancy, increased childbirth-related fear, a greater number of visits to

obstetrics and gynecology clinics, and decreased sleep quality. [2,6]

More than 80 scientific investigations on stress and PTB were recently reviewed by Dunkel Schetter and Glynn [7] of which a majority had prospective designs, large samples, and validated measures, and were fairly well controlled for confounds such as medical risks, smoking, education, income, and parity. A second area of developing convergence concerns the effects of stress on infant birth weight and/or LBW, reviewed recently by Dunkel Schetter and Lobel. [8] Again these studies can be organized by type of stressor. Evidence suggests that 'major life events' somewhat consistently predicted fetal growth or birth weight, whereas measures of 'perceived stress' had small or nonsignificant effects. 'Chronic stressors', however, have been even more robust predictors of birth weight. [9] An important source of chronic stress is 'racism or discrimination' occurring both during the pregnancy and over a woman's lifetime. [10] Pregnant women who are working fulltime in a high stress job should cut down their working hours to around 24 hours a week during pregnancy, Dutch researchers said babies of stressed working mums suffered adverse health effects. Pregnant women who work more than 32 hours a week in a high stress job are more likely to have babies who cry excessively; children with low birth weight and are more at risk for the dangerous pregnancy condition called 6 pre-eclampsia, according to research published. [11]

The aim of the present study was to assess stress and psychiatric morbidity among a group of pregnant versus non-pregnant women in the reproductive age group using validated research tools.

### Materials and Methods

This was a comparative cross-sectional study among 500 pregnant and 200 non-pregnant at department of psychiatry, SKMCH, Muzaffarpur, Bihar, India for one year using an interviewer-administered questionnaire. The study was

conducted among women aged 18 to 45 years attending SKMCH, Muzaffarpur, Bihar, India.

Systematic sampling was used to select respondents in these health facilities. Pregnant women presenting for antenatal care or booking in the second trimester (14 weeks and above) at the antenatal clinic and non-pregnant women attending the out-patient clinics for non- gynaecological conditions in all the selected health facilities were recruited for the study while those who presented with emergency conditions or were too ill to give consent were excluded. Women who met the inclusion criteria were informed about the study by their health professionals, and written informed consent was obtained before the administration of the questionnaire by the trained research assistants. Women who showed signs of psychological distress during interviewing were encouraged to speak with their healthcare professionals for possible referrals as needed.

The WHO Self Reporting Questionnaire (SRQ), General Health Questionnaire 12 (GHQ 12) and adapted Respondent and Partners section of the WHO women's health and life events survey was used to collect data from study participants.

The validated questionnaires were translated into Hindi (the local language) and back-translated to English to ensure meaning was retained. Data on demographic and socioeconomic characteristics; obstetrics, medical history, and living conditions were also collected. Data collected were entered, cleaned and analysed using the Statistical Package for the Social Sciences (SPSS) version 23. Data were reported in frequencies and proportions for categorical variables and means and standard deviations for quantitative continuous variables. Bivariate analysis was conducted to explore the association between independent and dependent variables using Chi- square test. Variables on bivariate analysis were significant at 10% and were subjected to binary logistic regression analysis to detect predictors of psychiatric morbidity among pregnant and non-pregnant women.

### Results

**Table 1: Study participants' characteristics and prevalence of psychiatric morbidity**

Variables	Pregnant n (%)	Non-pregnant n (%)	p-value
Age group (years)			
<24	75 (15)	64 (32)	
25-39	400 (80)	104 (52)	<0.001
>40	25 (5)	32 (16)	
Marital status			
Single	15 (3)	72 (36)	
Married	475 (95)	120 (60)	<0.001
Others	10 (2)	8 (4)	
Family setting			
Monogamous	450 (90)	160 (80)	<0.001
Polygamous	50 (10)	40 (20)	

Educational status			
Primary and less	25 (5)	24 (12)	
Secondary	175 (35)	90 (45)	<0.001
Tertiary and above	300 (60)	86 (43)	
Living status			
Husband	480 (96)	124 (62)	<0.001
Relatives	15 (3)	58 (29)	
Alone	3 (0.6)	16 (8)	
Others	2 (0.4)	2 (1)	
Level of health care attending			
Primary	75 (15)	32 (16)	
Secondary	250 (50)	100 (50)	0.920
Tertiary	175 (35)	68 (34)	
Psychiatric morbidity on SRQ			
Present	170 (35)	40 (20)	<0.001
Absent	330 (65)	160 (80)	
Stress morbidity			
Present	200 (40)	50 (25)	<0.001
Absent	300 (60)	150 (75)	

A total of 700 women of which 500 (71.43%) were pregnant and 200 (28.57%) were non-pregnant participated in the study. Their mean age was  $30.1 \pm 5.4$  and  $29.6 \pm 8.4$  years respectively. A significantly higher proportion 400 (80%) of the pregnant women compared with 104 (52%) were in

the 25–39 age category ( $p < 0.001$ ). A higher proportion of the pregnant women were married 475 (95%) compared with the non-pregnant women 120 (60%) which was statistically significant ( $p < 0.001$ ).

**Table 2: Sociodemographic correlates of psychiatric morbidity among pregnant and non-pregnant women**

Variables	Pregnant women		Non-pregnant women	
	Absent	Present	Absent	Present
Age (In Years)				
<24	40	35	50	14
25-39	180	220	70	34
>40	20	5	24	8
Marital status				
Single	8	7	50	22
Married	300	175	90	30
Others	7	3	6	2
Family type				
Monogamous	350	100	120	40
Polygamous	30	20	25	15
Educational status				
Primary	13	12	16	8
Secondary	100	75	60	30
Others	200	100	70	16
Living status				
Husband	300	180	100	24
Relatives	10	5	40	18
Alone	2	1	12	4
Others	2	0	1	1
Level of Health care available				
Primary	50	25	20	12
Secondary	170	80	80	20
Tertiary	120	55	50	18

Among pregnant women, sociodemographic factors significantly associated with psychiatric morbidity. The highest proportion of psychiatric morbidity

was found in women attending tertiary facilities, followed by secondary facilities and the least was in women from primary care facilities. In non-

pregnant women, correlates of psychiatric morbidity were mainly family characteristics.

### Discussion

Mental disorders are a leading cause of morbidity in the world today. [12] These disorders especially depression, anxiety and stress-related disorders are common among women in the reproductive age group. [13,14] There is increasing attention to the mental health of women in low- and middle-income countries (LAMICS) who are within the perinatal period but less attention has been given to their non-pregnant peers. A recent study in rural south west Nigeria found significant psychiatric morbidity among non-pregnant women with anxiety disorder prevalence rates of 28.8% and anxiety and depression prevalence rates of 19.8%. [15] Studies have shown that the incidence of mental health problems rises substantially in child-rearing years. [16] This has been attributed to the fact that females carry the physical burden of child bearing, and in many cultures, take up the greater burden of child-rearing. The transition to motherhood often represents a major life change, with substantial impact on financial, social-emotional and physical daily functioning. Career changes and possible employment breaks, may also occur in the lives of women to facilitate the caregiver role, all of which may contribute to the increased female vulnerability to mental health disorders. [17]

A total of 700 women of which 500 (71.43%) were pregnant and 200 (28.57%) were non-pregnant participated in the study. Their mean age were  $30.1 \pm 5.4$  and  $29.6 \pm 8.4$  years respectively. A significantly higher proportion 400 (80%) of the pregnant women compared with 104 (52%) were in the 25–39 age category ( $p < 0.001$ ). A higher proportion of the pregnant women were married 475 (95%) compared with the non-pregnant women 120 (60%) which was statistically significant ( $p < 0.001$ ). Among pregnant women, sociodemographic factors significantly associated with psychiatric morbidity. The highest proportion of psychiatric morbidity was found in women attending tertiary facilities, followed by secondary facilities and the least was in women from primary care facilities. In non-pregnant women, correlates of psychiatric morbidity were mainly family characteristics. Studies have indicated that high levels of stress in pregnancy have been associated with negative outcomes such as low birth weight and preterm labour. Negative outcomes such as depression and anxiety related to the pregnancy can lead to stress and can lead to less healthy behaviours. [18] Recent interest has focused on the potential etiologic roles of acute and chronic stressors, the psychological distress caused by those stressors, and the hypothalamic pituitary-adrenal axis. The maternal serum or plasma

corticotrophin-releasing hormone (CRH) concentration measured in early pregnancy has been shown to be a risk marker of subsequent preterm birth. [19]

Albrecht SA et al conducted a correlational descriptive survey study on Anxiety levels, health behaviours and support systems of pregnant women in metropolitan city. The findings showed that, there was significant positive correlation between trait anxiety with high occupation level. [20] The factors associated with psychiatric morbidity among both groups of respondents were poor communication with partners, frequent arguments in the intimate relationship, violence in the home, previous abortions, a previous history of depression and a family history of depression. Previous studies have shown a protective effect of marital satisfaction on psychological distress among women and poor satisfaction, poor communication, increased domestic violence, and poor financial and social support are all associated with psychological distress among pregnant women and non-pregnant women worldwide. [21,22] Though there are varying reports about the effects of foetal loss on women's mental health, studies have shown an overall increase in psychiatric morbidity associated with induced abortions. [23] It is not clear why pregnant women who attended primary healthcare facilities had reduced risks of psychiatric morbidity in this study. Many of these women are usually from lower socioeconomic backgrounds and would have been expected to be more vulnerable to psychiatric morbidity. However, they are likely to have greater support from extended family members such as mothers and mothers-in-law who like them do not work in high pressured jobs, and are therefore available to help with child care and other household chores. It is well established that women who enjoy greater social support in the perinatal period experience better mental health. [24] In addition, because these women do not work in high pressured jobs, they may also be able to work more flexibly during pregnancy or stop work totally thereby reducing their overall stress.

### Conclusion

The study concluded both working and non-working antenatal mothers were at more risk of developing stress. All antenatal mothers participated in this study had mild stress and there was significant difference between working and non-working antenatal mothers stress score. Psychiatric morbidity is high among women of reproductive age group with higher rates among pregnant women. Women with a previous history of depression and poor marital functioning appear to be more at risk. Simple mental health screenings at healthcare facilities can help in early detection and facilitate prompt treatment.

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