ORIGINAL ARTICLE

Depression In Pregnancy: Prevalence And Clinical Correlates

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Abstract

Introduction: *Pregnancy increases the risk of various psychiatric illness including depression. Such illness can result in prematurity, low birth weight and mother-child bonding. Depression is more common in women who have had negative experiences in previous pregnancies, have prior history of psychiatric disorder or are experiencing stressful life events. Unfortunately, psychiatric disorders among pregnant women are still undiagnosed and untreated, especially in developing country like Nepal. The aim of this study was to find out the prevalence and correlates of depression in pregnancy.*

Material And Method: *A cross-sectional, hospital based, descriptive study was conducted among 135 pregnant women attending Manipal Teaching Hospital's antenatal clinic. Sociodemographic data and relevant clinical variables were collected using a predesigned proforma after obtaining informed written consent. The subjects were interviewed with Beck's Depression Inventory (BDI). For the assessment of correlates, regression analysis was carried out. All statistical analyses were done using SPSS v 20.0. P values < 0.05 were considered significant.*

Results: *The prevalence of depression was 13.3 % according to BDI with additional 19% fulfilling criteria of mild mood disturbance. Factors such as history of sub fertility, pregnancy-induced illness and presence of domestic violence were found to be statistically significant predictors of depression during pregnancy.*

Conclusion: *Depression can occur frequently among pregnant women. Certain factors can be identified, which further increase the risk of such mental illnesses. Thus, pregnant women who are at high risk such as with pregnancy induced illness, have history of sub fertility, exposed to domestic violence etc., must be identified and diagnosed so that they can be treated timely.*

Keywords: Pregnancy, Mental Health, Depression, Risk Factor

INTRODUCTION

Pregnancy can be a time of joy and fulfillment for many women. However, it is also a phase where women are more prone to suffer from various mental health issues.

As it is, mental disorders like depression and anxiety are more common in females than males, the rates of unipolar depression being twice as high.[1] Furthermore, amongst females, depression is seen more in the childbearing age.[2] This is illustrated by the fact that suicide is one of the major causes of death in females of childbearing age group, including in Nepal.[3]

On observing the scenario in low and middle-income countries, studies from India[4] and Pakistan[5] showed a prevalence of antepartum depression to be 16.2% and 25% respectively.

World Health Organization (WHO) has identified the following risk factors in low and middle-income countries as being implicated in depression in pregnancy: adolescent pregnancy, being unmarried or separated, unwanted pregnancy, prior history of depression, history of stillbirth/repeated miscarriage, lack of financial resources, pregnancy as a result of rape, domestic violence, difficult relationship

with in-laws and so on. Depression during pregnancy can lead to deleterious effects in overall health of the mother and the child. Rates of miscarriage, preterm birth, low birth weight, and preeclampsia are seen to be higher in women in depression.[1]

Despite such importance, depression in pregnancy is still not well researched as well as is either unidentified or insufficiently treated. This study aims to highlight the various features of this important health concern with a view that proper screening and diagnosis of depression will bring early intervention to the needy thus preventing various complications and ensuring a healthy mother- infant bonding and development.

MATERIAL AND METHOD

A hospital based, cross sectional, observational study was conducted in the out- patient department of Psychiatry, after obtaining approval from Institutional Ethical Board of Manipal Teaching Hospital, Pokhara, Nepal.

Inclusion criteria were : 1. Pregnant females in all trimesters attending ANC 2.Those who give consent. Exclusion Criteria were : 1.Patients who fail to give consent 2. Patients suffering from a serious medical illness.

A minimum sample size of 90 was calculated using the formula of sample size for regression, where the number of predictors was assumed to be 5. A total sample size of 135 was taken. Data was collected after getting informed written consent by the first author. A pre-structured proforma was used to gather information regarding socio-demographic variables, pregnancy related variables together with Hit, Insult, Threaten, Scream (HITS) scale which was used to assess for domestic violence which was followed by scale that measured depression.

1. **Hit Insult Threaten Scream Scale (HITS):** It is a short screening tool consisting of four items namely show often their partner physically hurt, Insulted, threatened with harm, and screamed at them. Frequency of such activity is measured in five-point scale with 1 denoting never to 5 denoting frequently. If score of more than 10 is obtained, it is said to be positive. Cronbach's alpha value of the scale is found to be 0.80.[6]

2. **Beck Depression Inventory (BDI)**: It is a scale developed by Aaron T. Beck.[7] It is a scale containing 21 questions and is a commonly used

scale to assess depression. It has been well validated in pregnancy and its sensitivity has been found to be 0.83 and specificity was 0.89.[8] Nepali version of BDI is available and has been validated. Its sensitivity is found to be 0.73 and specificity is 0.91 with Cronbach's α=0.90.[9]

RESULT

Characteristics of study population

The current study included 135 patients. The age of participants ranged from 17 years to 39 years with mean age of 24.90 years (SD=4.54). Regarding other sociodemographic variables, 74.8% were residing in an urban area with majority (43.7%) having secondary level education and 56.3% falling into lower middle economic class. 1.5 % of the study population were widowed during the present pregnancy period whereas 98.5% were married. 58.5% of the study population were residing in extended family during time of the study. 8.1% of the study population had preexisting medical illness and 3% had a family history of mental illness. Regarding presence of domestic violence, 4.4 % of study population fulfilled criteria for domestic violence according to HITS scale.

Pregnancy related variables are presented in table 1.

Table 1: Pregnancy Related Variables

Variable		Frequency	Percentage
Past history of mental illness in pregnancy	Yes	6	4.4
	No	129	95.6
Number of past pregnancies	0	61	45.2
	1	43	31.9
	2	25	18.5
	3	4	3
	4	0	0
	5	2	1.5
Complication in previous pregnancies	Yes	49	36.3
	No	86	63.7
History of subfertility	Yes	8	5.9
	No	127	94.1
Planned pregnancy	Yes	109	80.7
	No	26	19.3
Pregnancy induced illness	yes	20	14.8
	No	115	85.2
Expected outcome	son	41	30.4
	daughter	22	16.3
	any	72	53.3

Table 2 : Severity Of Depression according to BDI

	Frequency	Percentage
Normal	91	67.4
Mild Mood disturbance	26	19.3
Borderline clinical depression	12	**8.9**
Moderate depression	6	**4.4**
Severe depression	0	0
Extreme depression	0	0
Total	135	100

Table 3: Association Of Depression and Different Varaiables

		Depression		
		Present	Absent	P-value
Marital Status	Married	42	91	0.105
	Widowed	2	0	
Kuppuswamy scale	Upper middle	16	23	0.210
	Lower middle	20	56	
	Upper lower	8	12	
Preexisting medical illness	Yes	4	7	0.748
	No	40	84	
HITS	Positive	6	0	**<0.001**
	Negative	91	38	
Past history of mental illness	Yes	4	2	0.088
	No	40	89	
Complications of previous pregnancies	Yes	24	25	**0.002**
	No	20	66	
History of subfertility	Yes	6	2	**0.015**
	No	38	89	
Planned pregnancy	Yes	26	83	**<0.001**
	No	18	8	
Period of gestation	1	12	35	0.248
	2	14	31	
	3	18	25	
Pregnancy induced illness	Yes	10	10	0.072
	No	34	81	
Expected outcome	Son	18	23	**0.023**
	Daughter	10	12	
	Any	16	56	

Prevalence of depression according to BDI

Table 2 below shows the frequency and percentage of severity of depression among the study population, according to BDI. According to the table, patients with normal mood had the highest frequency with 67.4% followed by mild mood disturbance in 19.3%. Borderline clinical depression was seen in 8.9% and 4.4% had moderate depression.

Association of depression and different variables

Table 3 below shows the relationship of BDI with different sociodemographic and pregnancy related variables. The tables shows that among depressed and non-depressed patients there was with statistically significant difference in positive history of domestic violence, complications in previous pregnancy, history of subfertility, in pregnancies which are not planned and had particular expected outcome regarding sex of the baby.

Correlates for depression in pregnancy:

Multiple regression was performed keeping total BDI score as the dependent variable and age, marital status, history of subfertility, complication of previous pregnancy , planned pregnancy , expected pregnancy and HITS as independent variables. Our analysis showed that all these variables explained 41 % variance in BDI. Age, marital status, history of sub fertility, presence of domestic violence and pregnancy induced illness were found to be statistically significant predictors of BDI as shown in table 4.

Table 4: Correlates for BDI

	B	S.E	t	p-value
Age	0.218	0.102	2.133	**0.035**
Marital status	4.387	1.146	3.829	**<0.001**
History of subfertility	7.314	1.841	3.972	**<0.001**
Complication of previous pregnancy	1.488	0.914	1.628	0.106
Planned pregnancy	1.990	1.217	1.635	0.105
Expected outcome	0.555	0.489	1.135	0.259
HITS	11.226	2.271	4.937	**<0.001**
Pregnancy induced illness	2.607	1.159	2.249	**0.026**

DISCUSSION:

This study included 135 pregnant females attending the antenatal clinic of Manipal College of Medical Sciences.

Within the subjects, 23% were between age group 15-20 years, 62% were between age group 21-25, 35% were between 26-30, 12% were between 31-35 and reaming 3%were aged above 35. The sample of age group represented in this study corresponds to the national average, as according to the Demographic and health survey 2016.[10]

Among the study population it was found that 8.1% of the participants had a preexisting medical condition. Although the number is not significant, this may be due to the fact that more complicated pregnancies with other medical illness prefer to attend ANC in a tertiary care center where this study was done.

Among the participants only 4.4% reported some form of domestic violence, although studies carried out in Nepal show that up to 13% women suffer from domestic violence.[11]

Among participant, 80% reported that their pregnancy was planned. When inquired about the expected outcome regarding the sex of the baby from this pregnancy, 30.4 % had expectation for male child, 16.3% reported expectation for female child and 53.3% reported that they didn't have a specific preference. Among male and female sex, having higher expectation for a male child, which is a finding in this study as well, is a normal social norm due to our society still being patriarchal.

The prevalence of depression was found to be 13.3 % with additional 19.3 suffering from mild mood disturbance. In one study done in eastern region of Nepal, among 44 participants almost 50% women were found to have some form of depression.[12] In another study, when BDI was used as tool to assess for depression, the prevalence rate was found to be around 16.9%, when women were assessed during their second trimester.[13]

Prevalence of Depression and Its Association with different variables:

According to study, while comparing the different sociodemographic and pregnancy related variables, in some variables statistically significant difference in depression was seen.

In the current study, there was statistically significant difference in rates of depression according to marital status. Women, who are widowed, had higher rates of depression though the number of widowed patient was very small which was 1.5%. Although the number of widowed women was small, both scored positive for depression. As with previous studies, women in this study who were widowed during the pregnancy experienced significantly more depressive symptoms than married women.[14]

Similarly, women who scored positive for presence of domestic violence had association with presence of depression. 4.4% of women in this study scored positive for domestic violence using the HITS scale, although the actual number of women experiencing domestic violence could be higher as prevalence of domestic violence according to one study in nepali community has been identified to be as high as 29%.[15] Such results have been observed in multiple studies in the past. Findings from one study done in Vietnam in 2010[16] also identified that the prevalence of depression was higher in women who experienced intimate partner violence.

In the current sample among depressed and non-depressed women, there was statistically significant difference in women with history of complications in previous pregnancy (p=0.002). Women with complications in previous pregnancy might have increased concern regarding similar events in the present pregnancy.

In this study, women with history of sub fertility also had higher rates of depression (p=0.015). In this study, around 12% women gave history of sub fertility, with subsequent successful gestation. The fact that sub fertile women undergo many failed attempts at conceiving, before the pregnancy also adds on to the psychological burden during pregnancy.[17]

In pregnancy which was unplanned, 62% reported depressive symptoms, which was also statistically significant for depression (p<0.01). Significant association of unplanned pregnancy with depression has been identified in prior studies as well.[18]

In this study, pregnancies which had expectation regarding the sex of the child, among which expectation for male child was greater, higher rates of depression were seen. This is explainable as in our part of the world,

being a patriarchal one, places higher importance to having a male child. Studies have been conducted which show increased prevalence of depression in postpartum period when the mother was not satisfied with the sex of the baby, i.e., having been expected a male child.[19]

Correlates of Depression in pregnancy:

Multiple regression analysis was done keeping the total scores of BDI as the dependent variable and age, marital status, history of sub fertility, complication of previous pregnancy, unplanned pregnancy, expected outcome, HITS score and pregnancy induced illness as independent variable. Our analysis showed that all these variables explained 40-50% variance.

Age, marital status, history of sub fertility, complications in previous pregnancy, presence of domestic violence and pregnancy induced illness were the significant predictors of depression among these variables.

In a study by Rezee et al , multiple regression analysis revealed that maternal education (p = 0.006) and complications in pregnancy, present or past (p = 0.01) were significantly important risk factors for depressive symptoms in the pregnancy period.[20] Similarly, according to study done by Hein *et al*., parity, and education status, income, and partnership status were found to be predictive factors for depression during pregnancy.[21]

Most of the previously established risk factors were identified as predictor of antenatal depression in this study.

CONCLUSION:

Antenatal depression is of great deal of importance because it affects not just the mother but also has impact on the health and development of the child as well affects the mother child bonding. Results from the study showed that around 13.3% of the sample population scored positive for antenatal depression which was comparable to the results obtained from other lower and middle-income countries. Certain factors like marital status, presence of domestic violence, complications in previous pregnancy, expectation of sex of the baby and presence of pregnancy induced illness had statistically significant association with depression.

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