

ORIGINAL ARTICLE

Depression and its Association with Housing conditions and Family among Pregnant Women of Rural Varanasi

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Citation

Raj K, Keshari SS, Shankar H, Kesarwani P. Depression and its Association with Housing conditions and Family among Pregnant Women of Rural Varanasi. Indian J Comm Health. 2021;33(4):575-579.

<https://doi.org/10.47203/IJCH.2021.v33i04.006>

Source of Funding: Nil Conflict of Interest: None declared

Article Cycle

Received: 27/09/2021; Revision: 09/11/2021; Accepted:28/11/2021; Published:31/12/2021

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Abstract

Background: Depressive disorders were the second leading cause of years lost due to disability in 2010 after low back pain and leading cause of disability adjusted life years (WHO 2010). Gestational depression may lead to low birth weight, premature births etc. Housing and family are important aspects of one daily life which if are unsatisfactory can increase stress level of its members. **Aims & Objectives:** The aim of this study is to see the relationship of housing and family with depression among pregnant women. **Material & Methods:** This is a community based cross sectional study of 220 pregnant women in 10 randomly selected villages of Chiraigaon, Varanasi, Uttar Pradesh during one year period; using predesigned, pretested and semi structured interview schedule for assessing housing and family conditions. **Results:** Depression was found to be more in women living in kutch house, nuclear family and illiterate husband, husband as head of family and belonging to lower socio-economic status. Increasing number of female child also increases depression. **Conclusion:** Housing structure, education of husband, socio-economic status and number of daughters should be assessed in every pregnant woman as these affect depressive state of pregnant women which can adversely affect the outcome of pregnancy.

Keywords

Depression; Pregnant; House; Family

Introduction

'You should be most happy at home and at work, and if you're not happy in those places, you know, it's going to lead to anxiety and depression.' (1). World Health Organization (WHO) regional office of Europe defined: "Depression is a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness and poor concentration".

Studies suggest that gestational depression is related to low birth weight, premature births etc. and children of depressed mothers are more likely to display behavioral

problems and exhibits disruptions in motor cognitive and emotional development. According to Priscila Krauss Pereira et. al. (2) prevalence of gestational depression in most studies of developing countries were around 20%. Of the many risk factors for depression "Stress" in life is one of them. Housing and family are important aspects of one daily life which if are unsatisfactory can increase stress level of its members. Recently Indian government is very much emphasizing on constructing, assisting, and providing pukka houses to needy citizens of the country. Therefore, this study is conducted to see the relationship of housing and family with depression among pregnant women.

Aims & Objectives

To study the relationship of depression with type of house and family

Material & Methods

Study Type: Community based cross-sectional study

Study Population: 220 pregnant women

Study Area: 10 randomly selected villages of Chiraigaon Block of Varanasi, Uttar Pradesh

Study Duration: One year

Sample Size calculation: The sample size is of 220 is adequate if we apply the prevalence of depression as 20% in pregnant (2) and 0.1 as absolute precision in formula $Z_{\alpha/2}^2 P(1-P)/d^2$ where P is prevalence and d is absolute precision.

Inclusion Criteria: The study population comprised of married pregnant women of second and third trimester who have live husband.

Exclusion Criteria: Women who were physically and mentally challenged, suffering from chronic illness and in their first trimester of pregnancy were excluded.

Strategy for collection: Study subjects were selected as proportional to population size from the 10 randomly selected villages. The study subjects were randomly selected from the list of registered pregnant woman taken from ASHA of the respective village. If the pregnant women were not available in spite of two visits then another pregnant lady from the nearby household was searched, selected and interviewed.

Working Definition: Predesigned, pretested and semi structured interview schedule for assessing housing and family conditions. Beck Depression Inventory II (BDI II) was used for assessing depression.(3) BDI II has score from 0 to 63 with 0-13 as minimal, 14-19 is mild, 20-28 is moderate, and 29-63 is severe. For analysis purpose in this study minimal range is considered as depression absent while mild, moderate and sever clubbed in and considered as depression present.

Ethical Approval: The study was duly approved by Institutional Ethical Committee.

Consent: Informed and written consent was taken from the study subjects in presence of a witness.

Data Analysis: Statistical analysis was done using Microsoft excel and chi square test was applied where necessary. The data was entered in M S Office Excel version 2010 and needed proportions and test of association were applied.

Results

In our study, depression was found to be present in 27.3% of pregnant women. Depression was found to be more in pregnant women living in kutchha house followed by pukka house/bungalow and least in women living in mixed type of house. Participants living in nuclear family were more depressed than living in Joint family. Family with 6-10 members and family having more than one adult female

have pregnant females with low level of depression than otherwise (Table 1). Literacy of husband shows inverse trend with depression in their pregnant wives (Table 2) as women with illiterate husband have highest depression and participants with husband educated up to graduate or above show least depression, though the same trend is not found with education of head of family in which maximum depression is found with head of family educated below primary (Table 2).

In our study, we observed that if husband was head of family, depression was found to be higher while if the head of family is female then the prevalence of depression was less among pregnant women (Table 3). Increasing trend of depression with decreasing SEC was seen in pregnant respondents with maximum prevalence of depression was seen in lower socio-economic status (Table 4).

In our study, we observed that presence of male child was slightly associated with more prevalence of depression. Increasing trend of depression with increase in number of female Child was found in and the trend is significant ($p < 0.05$) (Table 5).

Discussion

In our study, depression was more in those pregnant females living in the kutchha house. This can be due to the low income of the respondents living in kutchha house. The disadvantages of living in kutchha house like water leaking, odour etc. can increase stress level and thus depression. In a previous study, 21% respondent having housing issue had negatively impacted upon their mental health also when housing was perceived as the only cause of mental health conditions, anxiety and depression were the most common ones.(1) MacArthur Foundation in its Policy Research Brief states that "Housing quality and overcrowding are linked with poorer mental health regardless of whether a family lives in public housing or in subsidized private rentals".(4)

Pregnant women show less depression if living in joint family and if number of adult females is more than one but a study done by Arora P et. al in their systemic review found that pregnant women living in joint families (73%) had revealed more depression than that of from nuclear families (58%) though this difference was not statistically significant. The trend may defer because of the geographical and cultural difference as none of the studies included in the systemic review was from Uttar Pradesh or even Hindi speaking belt of India except Delhi.(5)

In a previous study, it was found that the members of the joint family are better adjusted than that of nuclear family.(6) This may be due to the fact that the extra care and attention a pregnant and new mother get in joint family by family members. Joint family has more chances of having more adult females than nuclear family. This lower depression with more number of other females in the family can be explained on the basis that women do

not share freely everything to a male even their husband, they need other women to talk to and share.

A study conducted by Sabita *Pet al.* on 220 pregnant women in Puducherry, India found that husband's education influences the depression of spouse such that higher rate of depression in pregnant women was seen with low literacy of husband.(7) This can be stated because more educated husband tend to be more supportive and caring which tend to decrease stress in the women.

Respondents with husband as head of family have more depression which may be because when husband is head of family, he has full control over his family and enjoys power and may try to control every act of his wife. This may increase stress in the respondent and may lead to increase depression.

Depression increases if number of family members' increases from less than 6 to more than 6 till 10 in our study, this was in accordance to the previous study conducted by Noh J-W et al.(8) In that study it was found that the level of stress increased proportionately to the number of family members for women.

Similar to this study, Shakeel et al.(9) in a multiethnic study in Oslo found, more prevalence (16%) of depression in subjects with low score for socio-economic position. Nasreen et al.(10) found more anxiety to be associated with poor socio-economic status. Aktas Songul et al.(11) conducted a study 2015 in Turkey on 266 pregnant women and it was found that the median level of depression to be low when the perceived economy of the subjects was good and high level of depression when the perceived economy was bad.

In India, usually male child preference is seen (12) but the preference is usually of family, and not of the mother. This may lead to internal conflict in women causing stress and depression. If the gender preference has caused the earlier abortion, this may cause tremendous stress in mother and may continue even after giving birth to a male child, leading to depression. In a previous study, it was found that pressure for male child was associated with domestic violence in pregnancy which can lead to depression.(13)

In review of two prospective studies, it was found that the living female child being as risk factors both for the occurrence of post-partum depression and for chronicity.(14) Some other previous studies also revealed that the most significant association for development of post-partum depression was presence of ante-partum depression.(2,14) Therefore if a women is pregnant and already have a female child then the fear of giving birth to another female child may lead to stress and depression.

Conclusion

More than quarter of the pregnant women were found to be depressed and were in need of psychiatric help though none of them were receiving any form of psychiatric help

to tackle depression. Poor housing structure do affect the status of mood and thus depression therefore housing schemes of government should be encouraged and made available to needy families.

Pregnant women living in kutch house, nuclear family, belonging to lower socio-economic status and husband as head of family are found more susceptible for depression should be screen for same. Pregnant women were found more stressed and depressed if she has more than two daughters.

With increasing education level of the husband, the depression in the pregnant females decreases thus advocating for increasing education levels of the community.

All subjects screened depressive were referred to the Department of Psychiatry, Institute of Medical Sciences, Banaras Hindu University for further management.

Recommendation

Every pregnant female having poor housing condition should be accessed for depression. 2. Every depressed pregnant female should be encouraged to use and utilize various government schemes to improve her housing conditions.

Limitation of the study

It was small study conducted in Chiraigaon Block only and was not having any financial grant/ support from any funding agencies

Relevance of the study

In rural population of Eastern Uttar Pradesh, poor housing and family conditions can lead to depression among pregnant women.

Authors Contribution

KR: Concept and design of study & acquisition of data and interpretation of data; and final approval of the version to be published. SSK: Drafting the article and revising it critically for important intellectual content & final approval of the version to be published. HS: Concept and design of study, interpretation of data; and final approval of the version to be published. PK: Analysis of data, revising it critically for important intellectual content & final approval of the version to be published

Acknowledgement

Authors are thankful to all ASHAs who have helped in this study

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Tables

TABLE 1 DEPRESSION AND ITS RELATIONSHIP WITH HOUSE AND FAMILY AMONG PREGNANT WOMEN

	Depression in pregnant women			p-value
	Absent	Present	Total	
House type				
No / Kutcha House	11 (55.0%)	9 (45.0%)	20(100%)	(χ ² = 3.980) 0.137
Mixed	70 (76.9%)	21 (23.1%)	91 (100%)	
Pukka / Bunglow	79 (72.5%)	30 (27.5%)	109 (100%)	
Type of Family				
Joint family	110 (75.3%)	36 (24.7%)	146 (100%)	(χ ² = 1.497) 0.221
Nuclear	50 (67.6%)	24 (32.4%)	74 (100%)	
Number of Family members				
≤5	70 (72.2%)	27 (27.8%)	97 (100%)	(χ ² = 1.728) 0.421
6-10	63 (70.0%)	27 (30.0%)	90 (100%)	
>10	27 (81.8%)	6 (18.2%)	33 (100%)	
Number of other females above 18 years of age in the family				
0	39(69.6%)	17 (30.4%)	56 (100%)	(χ ² = 3.096) 213
1	58(68.2%)	27 (31.8%)	85 (100%)	
>1	63(79.7%)	16(20.3%)	79 (100%)	
Total	160	60	220	
	72.7%	27.3%	100%	

TABLE 2 DEPRESSION AND ITS RELATIONSHIP WITH EDUCATION OF HUSBAND AMONG PREGNANT WOMEN

	Depression in pregnant women				p-value	Depression in pregnant women			
	Absent	Present	Total	p-value		Absent	Present	Total	p-value
Education of Husband									
Illiterate	14	9	23	(χ ² = 7.423) 0.115	Education of Head of Family				
	60.9%	39.1%	100%		52	24	76	(χ ² = 6.056) 0.195	
Below Primary	7	4	11		68.4%	31.6%	100%		
	63.6%	36.4%	100%		13	8	21		
Primary / Middle	45	21	66		61.9%	38.1%	100%		
	68.2%	31.8%	100%		55	18	73		
High / Inter	67	23	90		75.3%	24.7%	100%		
	74.4%	25.6%	100%		30	10	40		
Graduate and above	27	3	30		75.0%	25.0%	100%		
	90.0%	10.0%	100%		10	0	10		
Total	160	60	220	100%	0.0%	100%	160		60

	72.7%	27.3%	100%		72.7%	27.3%	100%	
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TABLE 3 DEPRESSION IN PREGNANT WOMEN AND HEAD OF FAMILY

Head of Family was Husband		Depression in pregnant women			p-value
		Absent	Present	Total	
No		119 (75.3%)	39 (24.7%)	158(100%)	(χ ² =1.895) 0.169
Yes		41 (66.1%)	21(33.9%)	62 (100%)	
If Head of Family was Female					
No		135(72.2%)	52 (27.8%)	187 (100%)	(χ ² =0.180) 0.672
Yes		25 (75.8%)	8 (24.2%)	33 (100%)	
Total		160 (72.7%)	60 (27.3%)	220 (100%)	

TABLE 4 RELATION OF DEPRESSION IN PREGNANT WOMEN ACCORDING TO THEIR SOCIO-ECONOMIC STATUS

Pareek Socio-economic Status	Depression in pregnant			p-value
	Absent	Present	Total	
Upper to middle	40(83.3%)	8 (16.7%)	48(100.0%)	χ ² =3.846 0.146
Lower-middle	97 (70.8%)	40 (29.2%)	137 (100.0%)	
Lower	23 (65.7%)	12 (34.3%)	35 (100.0%)	
Total	160 (72.7%)	60 (27.3%)	220 (100%)	

TABLE 5 DEPRESSION IN PREGNANT WOMEN ACCORDING TO MALE AND NUMBER OF FEMALE CHILD

Presence of Male Child	Depression in pregnant			p-value
	Absent	Present	Total	
No	98 (74.2%)	34 (25.8%)	132 (100%)	(χ ² =0.382) 0.537
Yes	62 (70.5%)	26 (29.5%)	88 (100%)	
Number of Female Child				
0	108 (77.7%)	31 (22.3%)	139 (100%)	χ ² = 7.829 0.019
1-2	49 (67.1%)	24 (32.9%)	73 (100%)	
3-6	3 (37.5%)	5 (62.5%)	8 (100%)	
Total	160 (72.7%)	60 (27.3%)	220 (100%)	