

Assessment of Association between Domestic Violence and Antenatal Depression in Rural Indian Population

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ABSTRACT

Introduction: Domestic Violence (DV) on women during perinatal period is a major public health issue. DV is prevalent throughout the world and has huge adverse effects in postnatal period.

Aim: To assess prevalence and to determine the association between DV and depressive symptoms among antenatal women.

Materials and Methods: A cross-sectional study conducted in a tertiary care centre at Jawaharlal Nehru medical college, Dutta Meghe Institute of Medical Sciences, Wardha, Maharashtra, India, from September 2018 to September 2019. A 200 antenatal women between age range of 18-50 years attending the Outpatient Department were included in the study. They were administered the Edinberg Postnatal Depression Scale (EDPS) to evaluate for DV and its association with Antenatal Depression (AND). For the purpose of bivariate logistic regression, a variable for depression was computed based on EPDS scores, i.e., symptoms of depression during pregnancy, whereby an optimal cut-off of ≥ 13 was chosen as representing the presence of

symptoms of depression. Statistical analysis was done by using descriptive and inferential statistics using chi-square test. The p-value less than 0.05 was taken as statistically significant.

Results: The most common age range of participants were between 21-30 years. A 28 (14%) of 200 women were found to have a history of DV. Majority of them experienced psychological abuse (39.3%), followed by verbal (28.6%), physical (7.4%) and combined types of abuses (25%). The perpetrators were mostly husbands and in-laws. Reasons for abuse included husband's alcohol abuse, in-law's interferences and dowry demand. Based on EDPS, 41.5% had depression and 9.5% had probable depression. DV was found to be significantly associated with AND. Income of the family and occupation of the patient were found to be other significant associated factors.

Conclusion: Domestic Violence (DV) has a significant correlation with AND. Proper prenatal screening for DV, early diagnosis and management of AND including family interventions are necessary to improve the health and wellbeing of pregnant women.

Keywords: Abuse, Domestic depression violence, Mood disorders, Postpartum

INTRODUCTION

Women have been the bearer of life on earth, the transformer of a house into a home and the overseer of a family. After marriage, a woman has to leave her family and tune into a new family and their set of rituals and norms. In the process of adjustments, some get a supportive atmosphere and some go through rigorous churning of their body and souls having to face various forms of abuse. DV is defined in agreement with the World Health Organisation's (WHO) guidelines as physical, sexual, psychological, or emotional violence, or threats of physical or sexual violence that are inflicted on a woman by a family member, i.e., an intimate male partner, marital/cohabiting partner, parents, siblings, or a person very well known to the family, or a significant other when such violence often takes place in the home [1].

A history of violence is defined as a lifetime experience of emotional, physical or sexual abuse occurring during younger age (<18 years), adult life (≥ 18 years) or both, regardless of the level of abuse or the perpetrator's identity [1]. In India, the Protection of Women from DV Act (PWDVA) provides a legal construct that integrates many cultural considerations [2]. In addition to forms of abuse mentioned above, it has particular focus on economic abuse i.e., dowry and stridhan (material assets given at the time of marriage by her parents), broadens the definition to abuse perpetrated by any member of a shared household against the woman, and defines violence in terms of the physical, mental, psychological, or economic harm resulting to the woman or her natal family [2].

Almost 20-50% women throughout the globe are experiencing DV [3]. A study by WHO involving multiple countries reported that 15-71% women experienced abuse either sexually or physically in their lifetime [3]. The Third National Family Health Survey (NFHS-3)

of India found that at least 37.2% women experienced violence from their partners during their married life [4]. Several studies conducted in India reveal high prevalence of DV in the form of physical abuse and emotional abuse among Indian women ranging from 18-70% [5,6]. Women are generally reluctant to reveal the violence perpetrated on them owing to factors like social stigma, lack of support from her own family, fear of abandonment by the husband and in-laws, financial dependency, future of her children and a fear of increase in verbal and emotional abuse.

The common mental health issues faced in pregnancy and perinatal period are depression, anxiety, eating disorders, psychotic disorders (Schizophrenia, Bipolar), postpartum psychosis, personality disorders and substance abuse. Studies have found an association between mental disorders in antenatal women and DV [7-9]. A research done by WHO in 10 countries found that women who experienced violence from their husbands at least once in their lifetime had emotional distress, depression, suicidal tendencies and attempts compared to women who did not undergo any abuse [3]. Puerperal depression can be antenatal or postnatal or both. Various other risk factors for AND recognised are younger age, poor financial status, low income, poor illiteracy, marital discord, past history of depression, previous abortions or miscarriages, childhood sexual abuse, anxiety and misconceptions regarding pregnancy, low confidence and poor self-esteem [10,11].

Depression in pregnancy can result in inadequate self-care, including malnourishment, substance abuse and poor clinic attendance, all of which may affect a woman's health, neglected antenatal health care and regular foetal monitoring adversely affecting the overall development of the foetus [12]. Postnatal consequences can be miscarriage, low birth weight (weight <2500 g) or small for

gestational age, preterm deliveries before 37 completed weeks of gestation, congenital anomalies in the infants, inadequate breast feeding, anxiety and stress regarding loss of child's custody and even possibility of having to abandon the child [13].

Murphy CC et al., provided a strong evidence that DV increases the risk of low birth weight, and a clear association with preterm labour, abortions and foetal death [14]. Similar conclusion was derived by Boy A and Salihu HM while studying the intimate partner violence and birth outcomes [13]. Studies show that DV can also be a major cause of maternal death. Often, DV related maternal deaths were perpetrated by both in-laws and partners [15].

The prevalence of a male dominant society in developing countries like India, illiteracy, poverty, poor medical facility or inadequate access to healthcare in certain areas of the country are a few factors which can lead to ignorance of mental and physical health of the female. This makes it important to study the rural and sub-urban population to assess the burden of various social and psychological issues and provide proper intervention to deal with it. As numerous studies have already highlighted the biological effects on the mother and child as a result of DV [13,14]. This study was conducted to assess mainly the psychological and mental issues in women who experience DV in her antenatal period, as good mental health is one of the important factors determining quality outcome in postnatal period.

MATERIALS AND METHODS

A cross-sectional study on questionnaire based was conducted in a tertiary care centre Jawaharlal Nehru Medical College, Dutta Meghe Institute of Medical Sciences, Wardha, Maharashtra, India, from September 2018 to September 2019. The study was approved by the Ethics Committee of the hospital and was done adhering to tenets of Helsinki Declaration (Ref no: DMIMS (DU) IEC/2018-19/7490, dated 30/09/2018). Informed consent from the patients was taken and confidentiality of the identity was assured.

Two hundred antenatal women attending the Outpatient Department of the Obstetrics and Gynaecology Department were included in the study who gave consent and were abiding with the inclusion criteria. 200 out of the first 317 females were selected and the remaining 117 were excluded as they did not fulfil the eligibility criteria.

Sample size calculation: Sample size calculation was derived with the formula with desired error of margin, where level of significance at 5% i.e., 95% confidence interval=1.96; Prevalence of DV=15%=0.15 [16]. Desired error of margin=5%=0.05

$$N = \frac{1.96^2 \times 0.15 \times 0.85}{0.05^2}$$

Inclusion criteria: Antenatal women who were 18 years and above who were willing to participate in the study, and having no major physical co-morbidities were included in the study.

Exclusion criteria: Uncooperative or extremely disturbed patients, those with debilitating co-morbid medical/surgical conditions and not consenting for the study were excluded from the study.

Study Procedure

A semi-structured proforma was designed for the study containing information about socio-demographic variables like age, education, marital status, religion, employment status, and domicile background. The clinical data sheet contained variables like, presence of DV, age of onset and total duration of DV, duration of contact with the perpetrator, precipitating/risk factors, mode of onset, and mode of violence, past history of abuse before marriage.

Mood symptoms were independently assessed using Edinburgh Postnatal Depression Scale (EPDS). EPDS was originally devised for the identification of postpartum depression disorders [17]. However, later it was validated for multiple setting use with a reliable result. It is a self-reporting scale with 10 questions which assesses depression

among this group of women. The Maximum score is 30. All those having ≥ 13 need further detailed evaluation and management. The Australian National Perinatal Depression Initiative endorsed the use of the EPDS as part of a universally-delivered psychosocial assessment for women receiving maternity care in the public health care system [18]. Previous studies also showed that EPDS can be used both for antenatal and postnatal depression assessment [17,19,20]. The clinical and epidemiological value of EPDS was confirmed by previous study done among antenatal women all around the world, some of them using simplified versions of EPDS [18].

STATISTICAL ANALYSIS

Statistical analysis was done by using descriptive and inferential statistics. Descriptive statistics was used to show the prevalence and severity of a lifetime experience of any type and level of abuse. Chi-square statistical analysis was used for association assessment. The p-value less than 0.05 was taken as statically significant. Odds Ratio and 95% Confidence Interval (CI) were calculated for the crude associations between possible risk factors and 'DV during pregnancy', with 'DV during pregnancy' as a dependent variable for bivariate logistic regression. The data was analysed using Statistical Package for the Social Sciences (SPSS) software version 27.0 using appropriate statistical tools.

RESULTS

Age distribution of the present study population was 18-50 years out of which, three-fourth of the females belonging to the age group between 21-30 years. Due to the population pool in the locality near the tertiary care centre, most of the females visiting the hospital were belonging to Hindu religion. Almost 82% of the women were unemployed and involved in household chores and thus were completely dependent on the spouse. Only 4.5% of the females attained higher education upto postgraduation followed by 19% who were educated upto graduation. Only 6.5% were illiterate. There were only 16.5% women who earned more than Rs 10000 per month. Majority of their husbands were in the lower income group earning up to 5,000 per month (43.37%). Majority of women had arranged or negotiation based marriages with more than half of them were living in a joint family [Table/Fig-1].

Demographic characteristics	N=200 (%)
Age (years)	
≤20	12 (6)
21-30	158 (79)
31-40	29 (14.5)
41-50	1 (0.5)
Religion	
Hindu	158 (79)
Muslim	9 (4.8)
Buddha	32 (16)
Christian	1 (0.5)
Educational status	
10 th standard	70 (35)
12 th standard	70 (35)
Graduates	38 (19)
Postgraduates	9 (4.5)
Illiterates	13 (6.5)
Occupation	
Business	3 (1.5)
Labourer	12 (6.0)
Farmer	6 (3)
Housewife	164 (82)
Service	15 (7.5)

Income (Rs)	
No income	160 (80)
Up to 5000	5 (2.5)
5001-10000	2 (1.0)
>10000	33 (16.5)
Type of family	
Nuclear	92 (46)
Joint	108 (54)
Nature of marriage	
Arranged	181 (90.5)
Love marriage	19 (9.5)

[Table/Fig-1]: Demographic characteristics of antenatal women studied.

The present study showed that 14% of antenatal women experienced abuse in one or the other form. Nearly 40% of them experienced mental abuse, followed by verbal abuse and combined mental and physical abuse. More than half (57.1%) of the women who experienced abuse had their husbands as main perpetrator of abuse while in the case of remaining 42.9% in-laws were alleged as the perpetrators 57.1% of women had faced domestic violence and abuse from the first year of marriage, followed by 32.1% having start of abusive behaviour in 1-3 years after marriage. More than half of the study subjects experienced DV from the first year of their marriage. In-law's interference, husband's alcohol abuse and dowry harassment were stated as main reasons for abuse [Table/Fig-2].

Abuse related factors	N=200 (%)
History of abuse	
Yes	28 (14)
No	172 (86)
Nature of abuse	
Mental	11 (39.3)
Physical	2 (7.1)
Verbal	8 (28.6)
Both	7 (25)
Relationship with perpetrator	
Husband	16 (57.1)
In-laws	12 (42.9)
First incidence (years)	
0-1	16 (57.1)
1-3	9 (32.1)
3-5	1 (3.6)
5-7	2 (7.1)
Intolerable level (years)	
0-1	20 (71.4)
1-3	6 (21.4)
3-5	1 (3.6)
5-7	1 (3.6)
Reason for abuse	
Husband's alcohol use	6 (21.4)
Interference of in-laws	13 (46.4)
Demand for dowry	1 (3.6)
Any other (Late conceiving, physical problems related to pregnancy)	8 (28.6)

[Table/Fig-2]: Distribution of patients according to history of abuse (N=200).

A 41.5% of women were found to have depression as assessed by the EPDS questionnaire. These results were statistically significant with a p-value of 0.0001 [Table/Fig-3]. Out of 28 women, WHO experienced DV 27 had variable grades depression [Table/Fig-4].

There was a significant correlation between women's occupation and AND. Highest number of housewives had symptoms of depression.

Depression as per EPDS scores	N=200 (%)
No depression (<10)	98 (49)
Probable depression (10 to 12)	19 (9.5)
Depression (≥13)	83 (41.5)

[Table/Fig-3]: Distribution of patients according to history of depression (N=200).

Domestic violence	No AND (score <10) N=98 (49%)	Probable AND (score 10-12) N=19 (9.5%)	AND Present (score ≥13) N=83 (41.5%)	Chi-square statistics (p-value)
Present (n=28)	0	1 (3.6%)	27 (96.3%)	0.0001
Absent (n=172)	98 (100)	18 (10.5%)	56 (32.6%)	

[Table/Fig-4]: Association of Domestic Violence (DV) and Antenatal Depression (AND) as per EPDS score.

The socioeconomic status including husband's low or no income (p=0.038) and low family income (p=0.04) had an important role in the psychological wellbeing of women [Table/Fig-5].

Variable	No. AND (<10) N=98 (49%)	Probable AND (10-12) N=19 (9.5%)	AND Present (≥13) N=83 (41.5%)	Chi-square p-value
Occupation				
Out of home job	18	2	16	0.028
Homemaker	80	17	67	
Woman's income				
No income	80	15	65	0.97
Up to 5000 Rs	2	1	2	
Above Rs. 5001	16	3	16	
Husband's monthly income				
No income (4)	0	0	4	0.038
Up to 5000 Rs (83)	36	7	40	
5000 to 10000 Rs (59)	32	4	23	
Above 10000 Rs (54)	30	8	16	
Total family income				
No income	0	1	5	0.049
Up to 5000 Rs	27	6	33	
5001 to 10000 Rs	35	3	18	
Above Rs,10000	36	9	27	

[Table/Fig-5]: Socio-economic characteristics and Antenatal Depression (AND). p<0.001 was considered as statistically significant

DISCUSSION

The DV can lead to physical as well as mental ill health in the antenatal women as well as the new born child. Depression being the most common pathology associated with antenatal women, authors studied the prevalence of DV among antenatal women and its relation to depression.

Age distribution of the study population was between 18-50 years, of which 79% were between 21-30 years. Varied religious and cultural presence in this area was reflected in this study. More than 90% of women were educated up to or above 10th standard, contrary to multiple previous studies in the past showing lower rate of literacy among antenatal Indian women [21,22]. More than three-fourth of the study subjects were housewives despite majority having higher educational qualifications. Very few had a job ensuring financial independence. Howard LM et al., highlighted low education as one of the significant risk factor having an impact on depression in perinatal period [7]. Bhatt RV in his study found no significant correlation between educational and economic status of the subject or the perpetrator with DV [23]. A study done by Ludermer AB et al., and Bavle AD et al., found significant correlation between higher educational status with low employment and AND. Many women are not allowed to pursue jobs after marriage in the patriarchal

social set up still followed in many parts of India. Having educational qualification and yet unemployed and financially dependent can lead to conflicts and marital discord. This in turn can precipitate depressive symptoms owing to unfulfilled aspirations [8,24].

Of the 200 women studied, 14% had experienced abuse of some form or the other after marriage. The forms of abuse differed like verbal, mental, physical or both mental and physical. Poly-victimisation is the term quoted by Lagdon S et al., in their article referring to multiple forms of DV in a women's life predisposing them to severe adverse mental effects [25]. Also, the estimated prevalence of variable forms of abuse such as sexual and physical violence was noted to be 15-71% in the WHO multi-country study [4]. In a study by Dunn LL and Oths KS 62% of the women reported that they experienced abuse by an intimate partner [26]. The current study showed similar finding with husbands being the main abusers in 57% women, while in-laws and husband's relatives are named as perpetrators of abuse in the case of the remaining 43%. Previous studies show that violence by an intimate partner or the one who is closely related and whom the victim trusts leave heavier impact on the mental health of women than abuse from strangers [9,10,27].

Variable reasons were cited for abuse including in-law's interference, husband's alcohol abuse and dowry demand in a descending order. Testa M et al., reported that husbands severe alcoholism perpetrated more violent acts of abuse compared to sober abuse episodes [28]. Majority of women faced abuse from the first year of their marriage. Among the subjects in this study, most of them (71.4%) reported that the abuse had become intolerable within the past one year. Often the history of abuse is ongoing for many years, mostly underreported or undetected in clinical settings. Violence being a sensitive issue with social implications, women may not voluntarily reveal that they have been undergoing abuse [29].

Mental health of antenatal women is largely a neglected area of healthcare in many parts of India. There is a tendency to focus on maternal physical health during pregnancy, rather than mental health, and to misattribute emotional complaints to the physical and hormonal changes occurring during pregnancy [4,13]. Although, DV is a widely rampant and readily recognised social evil, it is inadequately addressed specially in the context of antenatal maternal mental health. On assessment of depression using EPDS questionnaire, it was found that 41.5% had depression with a total score of more than or equal to 13 and a low percentage (9.5%) were probable depression falling in the borderline category of scores (10 to 12). Among the 28 women (14% of the total population) who experienced DV, majority (27) had co-morbid depression and only one among them was found to have probable depression. This was found to be statistically significant (p-value=0.0001).

Imran N and Haider II studied the risk factors in AND in those experiencing DV by an intimate partner and found the prevalence of 35.2% probable depression [30]. A previous study by Finnbogadóttir H et al., showed that symptoms of AND were 7.0 fold more likely to be associated with risk of DV [31]. A systematic review and meta-analysis showed that clinical features of various perinatal mental disorders (e.g., antenatal and postnatal anxiety, depression, and Post-Traumatic Stress Disorder (PTSD)) were associated with experience of DV [7]. A study done by Ludermir AB et al., also showed that intimate partner violence during pregnancy is strongly associated with postnatal depression, invariable of physical or sexual violence [8]. Fonseca-Machado MO et al., found a relationship between Intimate Partner Violence (IPV) and pre and postpartum depression in 41% of cases in their study. A 23% of the women had anxiety and 12% experienced posttraumatic stress disorder [9]. Similar results were reported by Vachher AS and Sharma A who studied depression and suicidal attempts in women who underwent DV [5].

Although, there is significant association between DV and AND, a direct causal relation cannot be attributed or established. In other words, the extent to which depression is a consequence of DV

is entirely unknown. Several other physiological or biochemical factors which predestines the occurrence of AND in the milieu of DV cannot be underestimated [9]. There was a statistically significant association between AND women's occupational status. Also, there was significant association between husband's low income as well as total low family income. However, women's own income as such was not related to AND in this study. Previous similar studies showed significant correlation between low educational status, lack of employment and low financial status resulting in financial hardships [32-34].

Depression and DV during antenatal period can inversely affect the outcome of pregnancy as suggested by previous data [13,30]. Experiences of violence during antenatal period, contributing to the burden of postnatal neurological and mental disorders highlight the menace of DV as a public health problem [27]. Dunn LL and Oths KS stated that history of abuse is usually neglected or missed by the treating health professionals during the prenatal check-ups [26]. Lack of recognition has serious implications, as it is now widely recognised that maternal depression, anxiety and stress during pregnancy have powerful long-term effects on both mother and baby [35]. It is essential to analyse the risk factors for DV and do regular mental health assessment as it is related to higher maternal morbidity in perinatal period.

Present study findings support prior recommendations that all women should be routinely screened and assessed for DV and abuse during the antenatal, natal and postnatal periods [8,10]. WHO guidelines recommend identification of DV and mental disorders in women attending antenatal and mental health care clinics [2]. Such a plan for proper surveillance and monitoring can enhance early detection and management of AND related to domestic abuse. Time constraints, lack of trained professionals and larger number of patients attending the rural hospitals are major barriers to the application of this in regular clinical practise.

Recent studies on the involvement of various environmental, psychosocial and biological factors along with socio-economic status in perinatal depression shows mixed results [32-34]. Future research integrating biological and psychosocial factors may shed more definitive light on its impact of DV in antenatal and postnatal depression.

Limitation(s)

There are certain limitations to this study including a smaller sample size and population pool limited to patients attending the hospital. A community based study with larger sample size will help to assess the gravity of the problem in the inaccessible rural settings. The current study did not take into account the biological factors of depression, past or family history of depression or any other mental illness. However, it focused primarily on psychosocial factors, more specifically DV. The severity of violence suffered by antenatal women was not assessed by any specific scale for DV. The severity of abuse as well as a confirmation of syndromal depression needs further clinical assessment. A follow-up study taking the above factors into account will be helpful to see the impact of DV on the outcome of pregnancy for both the child and the mother in perinatal and postnatal periods.

CONCLUSION(S)

The current study done in a rural tertiary care setting showed a significant association between presence of DV and AND. Various factors like history of husband's substance abuse and poor financial status, low family income, interference of in-laws and higher educational status with low financial independence were highlighted as significant factors associated with depression in the antenatal period. These are relevant findings as varied forms of abuse endured during the antenatal period can lead to a poor maternal and child outcome in postnatal period. DV and AND increase the risk of

premature birth, low birth weight in the new born and postpartum depression in the mother. Addressing the issue of DV is especially challenging in the Indian context as it is considered a usual norm by many women who choose not to disclose the history of violence. Thus, early detection and management of DV and prevention of depression in antenatal period are of utmost importance to ensure better outcome of pregnancy and postnatal period.

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