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Research Article

Physical Violence During Pregnancy and Self-Reported Reproductive Morbidity in Rural Pakistan; A Cross Sectional Survey

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Abstract

Background: Domestic physical abuse perpetrated by the spouse is documented worldwide. Physical abuse during pregnancy has been related to adverse reproductive outcomes. To address the lack of information on this issue in rural women of Pakistan, the authors studied the prevalence of physical abuse, related obstetric and psychological morbidity and women's perceptions about the husband's attitude.

Methods: A community based cross sectional survey of 1,717 women during pregnancy and postnatal period in one Sub district of Rawalpindi conducted in 2008 - 2009.

Results: Prevalence of physical abuse by the spouse was 11% before pregnancy, whereas 6.3% women experienced it in the current pregnancy and postpartum. Violence was commonest in the postnatal period (8.3%). Logistic regression showed that physical abuse before pregnancy was a strong risk factor for abuse during and after pregnancy (p-value = 0.000). Self-reported morbidity (p = 0.012), psychological morbidity (p < 0.00), tiredness (p = 0.00), vertigo (p = 0.001), body aches (p = 0.009), trauma reported in pregnancy (p = 0.007), preterm delivery (p = 0.006) and anemia (p = 0.002) were significantly associated with physical abuse whereas low birth weight, and adverse perinatal outcome were not. About 86% of the women who experienced physical abuse were content with the husband's overall behavior. However when compared to non-abused group they report more; dissatisfaction with the overall attitude of the husband, non-supportive behavior, husband's failure to take care of basic needs and lack of understanding (p < 0.00).

Conclusion: In our study of rural women in Pakistan, physical abuse by the spouse was found to be common during pregnancy or the postnatal period and was associated with a significantly high self-reported obstetric and psychological morbidity. It is important to raise awareness of the community health workers in the identification of abuse to reduce its adverse impact on women.

Keywords: *Physical Violence; Pregnancy; Psychological Morbidity*

Introduction

Violence against women is a human rights issue and a public health concern. Globally, millions of women are experiencing violence or living with its consequences [1]. Evidence from developing countries suggests that anywhere from 10% to 60% of women of reproductive age report having ever experienced some form of violence [2]. Prevalence of domestic violence from the husband is reported in various studies around the region e.g. 39% in Turkey [3], 16.4% in Iran [4], 31% in Bangladesh [5]. The prevalence of violence against women

in Pakistan ranges from 12% to 43% [6-9]. Pakistan demographic and health survey 2012 - 2013 measured physical violence using the modified using a shortened and modified version of the Conflict Tactics Scale [10,11]. In currently married women the prevalence was 19% [12]. A secondary analysis of PDHS data revealed that adherence to patriarchal norms, was significantly associated with experiencing emotional violence as well as controlling behaviors by husbands [13].

Domestic violence in pregnancy is reported in various studies. In Chile 5.9% suffered physical violence and 30.1% reported the presence of emotional violence [14]. In two separate studies from England, 3% experienced violence during the current pregnancy [15] and 17% in another cohort of pregnant women [16]. There is the belief that violence during pregnancy increases obstetric complications. A meta-analysis reviewed 8 studies, and found that women who reported physical, sexual or emotional abuse during pregnancy were more likely than non-abused women to give birth to a baby with low birth weight (odds ratio 1.4, 95% confidence interval 1.1 - 1.8) [17]. Other studies have shown a relationship with intrauterine growth restriction and neonatal deaths [18]. Domestic violence is also a risk factor for depression among women before pregnancy as well as in perinatal period [19-23]. Victims of physical and sexual violence also have elevated odds of reporting gynecologic symptoms (odds ratios, 1.7 and 1.4, respectively) [24].

Limited data exists about gender based physical abuse during pregnancy and women's perceptions in Pakistan. We examined findings on the prevalence of violence perpetrated against a woman by her husband before and in three time periods during and after pregnancy. We explore the relationship of physical violence with self- reported reproductive health morbidity and obstetric outcomes as well as women's attitudes and perceptions in rural sub-district of Pakistan.

Methods

The data for this study came from a community based cross sectional study of maternal morbidity in rural Pakistan. This survey was carried out from 2008 - 2009 in Rawalpindi district situated in the northeast of Pakistan.

Ethics Statement

The institutional review board of Human Development Research Foundation and Health services.

Academy approved the study on maternal morbidity. The Informed written consent was obtained from the participants. The information sheet and the consent form were shared with the ethical board and were approved. The data was kept anonymous and confidential. In case of a serious morbidity, women were referred to the health facility.

Geographical area and study sample

The study area was a rural sub-district of Rawalpindi, and consists of 24 Union Councils (each comprising 5 - 7 villages of 10,000 - 15,000 inhabitants). The average household consists of 6.2 members and the female literacy rate is 48.6%. Most families depend on subsistence farming, supported by earnings of one or more adult male members serving in the armed forces, or working as government employees, semi-skilled, or unskilled laborers in the cities. LHWs are members of the local community, have completed secondary school, and are trained to provide mainly preventive mother and child health care and education. Each LHW is responsible for about 1000 women in her catchment area.

The study was conducted in five conveniently selected union councils: (Jatli, Mandra, Kuri dolal, Kalyam, Mangot) of the sub-district (Gujar Khan) of Rawalpindi. LHWs were selected to conduct the interviews as they were familiar with local culture, had access to women at their homes and had previous experience of surveys. Pregnant and postnatal women were interviewed face to face about physical domestic violence by the lady health workers (LHW) during routine visits. Out of 1727 women approached, 1,717 (99%) agreed to take part in the study who were interviewed at three points; 583 in the first 5 months of pregnancy, 605 in the last four months of pregnancy and 529 in the postnatal period. Informed consent was obtained from all mothers participating in the study.

Average age of the participants was 27.5 (5.4) years, mean gravidity 3.35 (2.12), mean parity 2.71 (1.5) and 57% women were uneducated. Previous research in the study area has shown high rates of maternal depression in antenatal and postnatal periods.

Measurement

Physical morbidity questionnaire

Mothers' self- reported morbidity, physical abuse and perceptions about husband's behavior at three points in time were assessed using a specially developed Questionnaire, written in Urdu and appropriate to the comprehension level of the mothers. The questionnaire

on maternal physical morbidity was, adopted from a morbidity study in Malawi. Literature search and international and local technical expertise was utilized to adapt the questionnaire. The questionnaire included information on basic demographic characteristics, previous obstetric morbidity, and current morbidity. Questions were grouped in 9 broad categories to reflect different types of possible morbidity including infective morbidity, pre-eclampsia, haemorrhage as well as general medical problems and anemia. The language of the categories were then culturally adapted through lengthy unstructured interviews with health workers, midwives and mothers. The wording of each item was kept as simple as possible, so that further explanation, which might bias the response, could be kept to a minimum.

Physical abuse questionnaire

The questions about physical abuse were modified from shortened and modified version of the Conflict Tactics Scale, the psychometric properties of which have been tested. A few additional questions were formulated by the study group after literature review. We used the definition by the CDC's National Center for Injury Prevention and Control which defines Physical abuse as the intentional use of physical force (e.g. shoving, choking, shaking, slapping, punching, burning, or use of a weapon, restraints, or one's size and strength against another person) with the potential for causing death, disability, injury, or physical harm. There were six questions in all, four relating to the perceptions about the husbands overall behavior and then leading to two questions on physical abuse. Following questions were asked having "yes" or "no" responses only. Does the husband take care of your basic needs of food, shelter and clothing? Do you think that your husband understands you? Does your husband support you during difficult times and in trouble? Are you happy with the overall behavior of your husband? Specifically, spousal physical violence by the husband for currently married women was measured by asking the following set of questions. Did your husband ever: (a) Push you, shake you, or throw something at you? (b) Slap you? (c) Twist your arm or pull your hair? (d) Punch you with his fist or with something that could hurt you? (e) Kick you, drag you, or beat you up? (f) Try to choke you or burn you on purpose? (g) Threaten or attack you with a knife, gun, or any other weapon? Did your husband use physical force (as defined above) in the current/last pregnancy? Did your husband use physical force in current postnatal period? Questionnaire was pilot tested on both antenatal and post-natal women (number = 12) and the use was piloted by up to 8 different LHWs. Minor adjustments in language were made. A test-retest in 40 women showed internal consistency reliability of 0.92 (CI 0.90 - 0.95) when the questionnaire was re-administered within 2 weeks.

Psychological morbidity

Translated version of a standardized screening instrument, Edinburgh postnatal depression scale (EPDS) was used at the three points in time to identify the psychological morbidity. This tool has 10 questions in all and it has been previously used and validated in the same population [25]. The sum of the 10 questions gives a score range of 0 to 30. Cut-off scores for psychological morbidity usually range from 9 to 13 points, whereas we have used 12 as a cutoff value.

Procedure

The LHWs and supervisors were given two day training by the senior researchers. A detailed explanation and understanding was imparted for measuring the physical morbidity by conducting interactive training sessions. The LHWs then used the questionnaire on each other, which were then reviewed by the senior researchers and discussed with the LHWs. The LHWs were supervised by the lady health supervisors, who were further monitored by the field supervisors. Researchers visited data collection spots and provided guidelines to supervisors and interviewers to assure the quality of the collected data.

The sensitivity regarding the questions relating to physical abuse and the protocol for the interview was explained. It was a challenge to get such sensitive information from women. LHWs are the trusted members of the community who have an easy access to women at their homes. It was easy for the LHWs to take a woman to a corner of the house to ensure privacy and conduct a one to one interview with the women. Women were inquired about physical abuse perpetrated by the husband before pregnancy, in the current pregnancy and in the postnatal period. Women were ensured that this information will remain confidential. The approval from the ethical committee was obtained before the start of the study.

Sample size and Statistical Analysis

For each phase of pregnancy (early pregnancy, late pregnancy and postnatal) information was collected for a minimum of 500 women which was estimated by using a prevalence of any morbidity to be within 4.4% and with a 95% confidence interval. Univariate analyses were carried out on the cross-sectional data to assess the association between spousal violence and each health outcome. Using Chi^2 test, p- values were calculated. Logistic regression was used for risk factor analyses in Stata (Version 10).

Results

The mean age of these women was 27.28 + 5.21 years. The participants had a choice to be interviewed at home or at LHW's health house. Majority of the women were interviewed by the lady health workers (LHWs) at their home (89%) and the rest at the BHU (7%) or the health house (4%). The mean gravidity was 3.07 + 2 and parity was 2.52 + 1.78. Out of these 70 (4.81%) were primigravida and 197 (13.56%) were grand multipara. The differences in the demographic characteristics among those reporting abuse and the non-abused are given in table 1.

Maternal Demographics	No abuse n = 1610	Physical Abuse n = 107	p value 0.24
Age (y) mean (SD)	27.2 (5.1)	27.8 (5.7)	
Mean Gravidity (SD)	2.98 (1.94)	3.71 (2.3)	< 0.000
Mean Parity (SD)	2.45 (1.6)	2.97 (1.7)	< 0.001

Table 1: *Comparison of demographics in abused and non-abused women.*

SD: Standard Deviation

The prevalence of physical abuse ever before pregnancy was 11.07% whereas in the current pregnancy it was 6.23%. The prevalence at different points in pregnancy shows an increase in violence with the advancing period. Physical violence was more in the postnatal period than during the pregnancy (Figure 1).

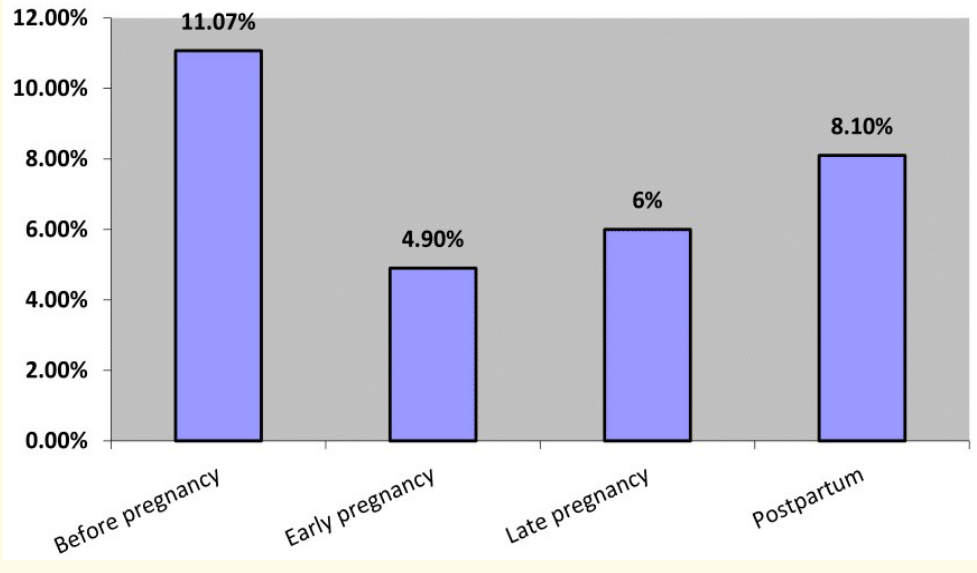

Figure 1: *Physical violence before and at different time points during and after pregnancy.*

Logistic regression analysis of the predictor variables demonstrates that previous history of violence is the strongest predictor of physical violence in current pregnancy. Young age was a significant predictor of physical violence in univariate analysis, however after multivariate analysis age of the woman, number of pregnancies, number of children, history of abortion and having daughters were not significant risk factors (Table 2).

Predictive variables	Odds Ratio	95% Confidence interval	P-Value
Age	0.97	0.89 - 1.04	0.41
Number of pregnancies	0.89	0.65 - 1.21	0.46
Number of Children	1.17	0.80 - 1.72	0.40
Number of Daughters	1.06	0.78 - 1.43	0.71
Previous history of violence	125.09	60.49 - 258.68	0.000

Table 2: *Multivariate logistic regression analysis of significant predictive variables for domestic violence in current/ preceding Pregnancy.*

Univariate analysis revealed a positive and significant association of physical violence with Psychological morbidity, self- reporting of obstetric morbidity, anemia, preterm labour and trauma in pregnancy. The symptoms which were more significantly reported by women who suffered from physical domestic violence were tiredness, vertigo, generalized body aches and dyspareunia (Table 3).

Obstetric Morbidity and Reproductive Health Behavior	No abuse n = 1610 no (%)	Physical Abuse In Current Preg. n = 107 no (%)	p value
Self-reporting of any one morbidity	1402 (87)	102 (95)	0.012
Psychological morbidity	240 (15)	34 (32)	< 0.000
Bleeding	61 (3.8)	3 (2.8)	0.6
Trauma	29 (1.8)	6 (5.6)	0.007
Headache	429 (26.6)	36 (33.6)	0.115
Hypertension	126 (7.8)	7 (6.5)	0.6
Eclampsia	15 (0.9)	2 (1.8)	0.3
Vertigo	470 (29)	48(44.8)	0.001
Body ache	339 (21)	34 (32)	0.009
Tiredness	804 (50)	73 (68.2)	0.000
Anemia on exam	749 (46.5)	65 (60.7)	0.002
Nausea	526 (32.7)	41 (38.3)	0.22
Vaginal discharge	366 (22.7)	31 (28.9)	0.138
Dyspareunia	127 (7.8)	17 (15.9)	0.004
Postnatal women only			
Preterm delivery	116 (9.5)	24 (14)	0.006
Low birth weight	28 (8.6)	4 (14.3)	0.3
Using contraceptive	59 (12.2)	6 (13.9)	0.7
Thought about contraception	222 (45.9)	26 (60)	0.06
Breast feeding	374 (78)	40 (93)	0.019

Table 3: *Association of Physical Abuse with Obstetric Morbidity; Uni-variate analysis.*

There was no still birth, intrauterine deaths and neonatal death in the postnatal group of abused women and the difference from non-abused women was not statistically significant. The mean birth weight was 2837 +493 grams in the non-abused and 2682 +282 grams in the abused group and did not differ significantly (t-test p- value = 0.1).

The reproductive health behaviors like contraceptive use were similar in the two groups. Breast feeding was significantly more in the group who suffered from violence. Surprisingly 164 (86%) of women experiencing physical abuse reported positively to the question enquiring about whether they were happy with the overall attitude of the husband. Majority of women in both groups perceive their husbands as understanding, supportive and fulfilling their basic needs. However, when compared to non-abused women, there is a statistically significant difference in the perceptions. Physically abused women report more unhappiness with the spousal attitude, non-supportive behavior, lack of understanding and failure to fulfill the basic needs of wife (Table 4).

Attitudes/perceptions	Response	No Abuse (n = 1527) (n, %)	Ever Abuse (n = 190) (n, %)	P value
Does your husband take care of your basic needs of food, shelter and clothes?	Yes No	1431 (94) 96 (6.3)	165 (87) 25 (13.1)	0.000
Does your husband understand you?	Yes No	1445 (95) 82 (5)	164 (86) 26 (4)	0.000
Is your husband supportive in difficult times?	Yes No	1456 (95) 71 (5)	173 (91) 17 (8)	0.011
Are you happy with the overall behavior of your husband?	Yes No	1440 (94) 87 (6)	164 (86) 26 (4)	0.000

Table 4: *Women's perceptions about spousal attitude/Behavior.*

Discussion

This is the first study to look at the physical abuse and its effect on reproductive and psychological morbidity and perceptions of rural women of Pakistan. In this community based study of domestic violence we only focused on physical abuse. There were a few major findings of this cross sectional study. Physical abuse was most frequent in the postnatal period and physical violence before pregnancy was a strong risk factor for violence during and after pregnancy. There was a higher self- reporting of symptoms of reproductive morbidity by the physically abused women compared to non-abused and mostly these were general symptoms like tiredness, fatigue, body aches and vertigo. Compared to women who did not suffer from violence, abused women had more psychological as well as physical morbidity like anemia, preterm labour and trauma in pregnancy. We identified interesting perceptions of women who experienced physical violence, majority of them reporting to be happy about the husband's overall attitude, however when compared to non-abused, they report more discontentment with the spousal attitude, non-supportive behavior, lack of understanding and dissatisfaction in fulfilling their basic needs.

We did not measure the socioeconomic status of women in this study, however previous studies have concluded that physical violence is independent of the socioeconomic status. The occurrence of physical abuse before [6] and during pregnancy in our study corresponds with local and international figures [7,26-28]. Since we did not include sexual and other types of abuse, our figures do not correspond with the high domestic violence figures (68%) quoted by some regional countries like Bangladesh [29] and Iran [30].

A study in China had reported that abuse before pregnancy was a strong risk factor for abuse during and after pregnancy, and that there is a higher prevalence of abuse in the postnatal period [31]. The results of our study in Pakistan also correspond with these observations. In one study in Mexico the severity of emotional violence increased during pregnancy, whereas physical and sexual violence decreased. That is consistent with our finding of higher physical abuse in postnatal women [32]. Our analysis did not find any association

of a girl child and violence. Various studies have documented the association of physical abuse in women with psychological morbidity [6,33] and adverse mental health outcomes [34]. Our study also demonstrates significantly higher psychological morbidity in women who are physically abused compared to the ones who are not ($p < 0.000$). Since ours is a cross sectional study, it cannot comment on the temporal association of psychological morbidity and abuse.

The higher self-reporting of symptoms of obstetric morbidity in cases of violence in our study is a significant finding. Some studies have linked reporting of gynecological symptoms with psychological morbidity [35]. In one study from our neighboring country India, when women whose husbands reported no violence were compared with those who had experienced physical violence had elevated odds of reporting gynecologic symptoms [24] There are various studies on the association of violence and low birth weight, and neonatal mortality with conflicting results. Our study did not show any such association. A case control study noted a higher incidence of puerperal and neonatal morbidity in victims of domestic violence and their newborns compared to controls ($P < 0.007$) in a study in Australia [36]. A 3-fold increase in low birth weight infants (≤ 2,500 g) in women reporting physical abuse, compared with those not reporting domestic violence was observed in a study in Texas on 16,041 women [18]. In another study, no statistically significant association was observed between domestic violence perpetrated by partners and low birth weight or prematurity [37]. Others demonstrate that physical assault during pregnancy is associated with preterm labor and chorioamnionitis [38].

The finding that majority of the women in our study are happy with the husbands attitude are comparable to a study in Bangladesh where 84 percent of women named one or more scenarios in which they said wife beating is acceptable [39]. A qualitative study in Ethiopia also reported the perception that beating was considered as a sign of love and women who recognize beating to be a symbol of love would even try to trigger it [40]. Despite the limitations of possible response bias and underreporting, the study findings should be useful to health professionals and planners underscoring the importance of screening for physical abuse.

Results of our study have important public health implications. The psychological morbidity associated with violence is often not identified and antenatal care could provide an opportunity for improved detection A strategy to address domestic violence may also prevent the far-reaching burden of postnatal depression that affects mothers, children, and the health system as a whole.

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