

# Effect of Domestic Violence on Pregnancy Outcome

Nabila Zareen<sup>1</sup>, Nasreen Majid<sup>2</sup>, Sonia Naqvi<sup>2</sup>, Sadia Saboohi<sup>2</sup> and Hassan Fatima<sup>2</sup>

## ABSTRACT

**Objective:** To determine the causes and type of domestic violence endured by pregnant women and their effect on pregnancy, in terms of maternal and neonatal outcome.

**Study Design:** Cohort study.

**Place and Duration of Study:** The study was conducted in Sir Syed Trust Hospital, Karachi, from March 2007 to February 2008.

**Methodology:** All the antenatal patients were screened for domestic violence, using a self-made questionnaire and abuse assessment screen. All the pregnant patients, who had language barrier or those who declined to be interviewed were excluded. All the pregnant patients with positive response, according to the abuse assessment screen were included in the group A, while every 4th patient with negative response was taken as control. SPSS 10 was used for statistical analysis. Logistic regression analysis was performed to determine the effect of domestic violence on delivery outcome. Relative risk was also calculated. Statistical significance was taken at  $p \leq 0.05$ .

**Results:** Four hundred and ten ( $n=410$ ) antenatal patients were interviewed. The factors associated with domestic violence included addiction in 32 (39%), allegedly aggressive nature of husband in 21 (25.6%) and unemployment of husband in 6 (7.31%) cases ( $p=0.001$ ). Fifty two per cent women had been victims to more than one form of violence. Antenatal complications were not observed in a statistically significant number in either group. Depression was identified in 25.60% of group A and in 3.65% of group B ( $p=0.001$ ;  $RR=2.01$ ;  $95\%CI=1.58-2.56$ ).

**Conclusion:** Various factors leading to domestic violence were identified among the husbands of women subjected to violence during pregnancy. The differences between the two groups, with regard to neonatal outcome (except depression), did not reach statistical significance. However, depression was significantly higher in the women enduring violence.

**Key words:** Domestic violence. Maternal abuse. Abuse assessment screen. Depression.

## INTRODUCTION

Domestic violence is a global public health concern, affecting 0.9% and 20.1% of pregnant women in the United States.<sup>1</sup> World Health Organization (WHO) defines domestic violence as "the range of sexually, psychologically and physically coercive acts used against young and adolescent women by current or former male intimate partners."<sup>2</sup> Pregnant women are no less vulnerable to violence than other women. In fact, pregnancy provides an opportunity for abuse assessment due to the frequent visits of the women. According to WHO 2002 report in 48 different countries, 10-69% of women were being physically hit by their partners in their lives.<sup>3</sup> Known risk factors for violence during pregnancy include maternal age, ethnicity, low-level of education, employment status, parity, smoking, alcohol and drug abuse.<sup>4</sup> In United Kingdom, domestic violence is reported in every one out of four women.<sup>5</sup>

Domestic violence against women is found in the form of physical, verbal or psychological abuse in Pakistan.

Adverse pregnancy outcome associated with violence during pregnancy may result from physical or sexual trauma or indirectly through stress.<sup>6</sup> In Pakistan, there is paucity of literature on domestic violence, its prevalence, and associated sequel.<sup>7</sup>

The importance of domestic violence had been stressed in the RCOG (Royal College of Obstetrician and Gynaecologist) publication 'Violence Against Women'.<sup>8</sup> Women are more vulnerable to violence by their partners, during pregnancy. Pregnancy was identified as one of the six risk factors for homicide in 56 domestic murders that occurred in London between 2001-2002.<sup>9</sup>

Pregnancy provides an opportunity for abuse assessment due to the frequent visits of the pregnant women. The objectives of the study was to determine the associated factors and type of domestic violence during pregnancy and its impact on pregnancy, in terms of maternal and perinatal outcome.

## METHODOLOGY

The study was conducted in the Outpatient Department and Labour Ward of Sir Syed Trust Hospital, Karachi, from March 2007 to February 2008. All the antenatal patients who agreed to be interviewed were included in

<sup>1</sup> Department of Gynaecology and Obstetrics, Hamdard University Hospital, Karachi.

<sup>2</sup> Department of Gynaecology and Obstetrics, Sir Syed College of Medical Sciences, Karachi.

**Correspondence:** Dr. Nabila Zareen, B-213, Block-10, Gulshan-e-Iqbal, Karachi.  
E-mail: drnzareen@gmail.com

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the study. All the patients with language barrier and those who refused to be interviewed were excluded from the study. All pregnant patients who gave the history of abuse (either physical, emotional or sexual abuse) were included in group A, and every 4th patient (taking the reference of the prevalence of domestic violence in United Kingdom<sup>3</sup>) with negative history was taken as control and included in group B. Self-administered questionnaire (mentioned in Annexure I) was filled by means of direct interview from the participants, after informed consent and evaluation of Abuse Assessment Screen was done (according to the questions mentioned in Annexure II). Positive responses to any of the three questions, in which the perpetrator was the husband, were coded as domestic violence. Abuse Assessment Screen is a clinical and research tool that screens for physical violence and forced sex. All the patients were asked about being physically hurt by someone during pregnancy or otherwise and about being touched in an unwanted sexual way.<sup>10</sup> Strict confidentiality was assured and all the interviews were conducted at the time when no one could overhear the conversation. The participants were clearly told before starting the interview that the purpose of the study was to explore the health outcomes associated with partner's violence.

The characteristics of violence were measured with the domestic violence questionnaire from the WHO multi-country study on women's health and life events.<sup>11</sup> It included questions on all dimensions of partner violence (emotional, physical and sexual). As the WHO instrument was not developed for the evaluation of events in pregnant women, every question was related to the time of the current pregnancy.

Physical abuse was defined as one or more intentional acts of physical aggression perpetrated by the male partner during the current pregnancy with the potential of causing harm, injury or death. Emotional abuse was defined as repeated yelling, humiliating or threatening acts by the male partner during the index pregnancy. Sexual abuse was defined as the use of force, coercion or psychological intimidation by the partner to force the woman to engage in a sex act against her will.<sup>11</sup>

Pregnancy outcome was assessed in terms of induced abortion, miscarriage, stillbirth or live birth. Among the live births, the gestational age at birth and birth weight were recorded. The demographic data included age, education and profession of both the husband and wife. Income of the husband and parity of the woman, were also recorded.

Pre-term delivery was defined as a live birth delivered before 37 completed weeks of gestation and term births were those who delivered after 37 completed weeks of gestation. Low birth weight was defined as a live birth weighing < 2500 grams. The comparison group, normal birth weight was defined as a live birth weighing > 2500

grams. Spontaneous abortion was defined as early fetal loss before 20 weeks of gestation. Early perinatal death was defined to include fetal loss after 20 weeks gestation upto neonatal death occurring in the first week after delivery.<sup>1</sup>

Frequency and percentages were computed for all categorical variables like parity, age, education of both the partners as well as for risk factors and different forms of violence, maternal outcome, and fetal and early neonatal complications. SPSS 10 was used for statistical analysis. Logistic regression analysis was performed to determine the effect of domestic violence on delivery outcome. Relative risk was also calculated. Statistical significance was taken at  $p \leq 0.05$ .

## RESULTS

A total of 410 pregnant women were interviewed. There were 82 women, who were affected by violence and included in group A, while every 4th women was selected among the 328 women who were not affected by violence and, therefore, 82 patients were included in group B.

Sociodemographic characteristics of women and their husbands are mentioned in Tables I and II respectively.

Twenty eight (34.14%) of the respondents and 24 (29.26%) of their partners were illiterate in group A, while 32 (39%) of the pregnant women and 13 (15.85%) of their partners in group B were illiterate. Only 8 (9.75%) of women in group A, and 12 (14.63%) of their partners had education level of greater than 12th grade. In group B, 4 (4.87%) of women and 13 (15.85%) of their husbands had received education of greater than 12th grade.

Thirty eight (46.34%) of women and 41 (50%) of their partners in group A and 34 (41.4%) of women and 43 (52.43%) of husbands in group B respectively had received education between 5th and 12th grade. More than twice husbands in the control group B had received education less than the 5th grade, as compared to the husbands in the group A, which was statistically significant. Most of the women were housewives, 74 (90.24%) in group A and 71 (86.58%) in group B. Majority of the husbands were labourers, 73 (89.02%) in group A and 67 (81.70%) in group B. Seventy six (92.68%) of the pregnant women were living with the father of the child, 45 (54.87%) were primigravidas and 37 (45.12%) were multigravidas, in group A. All the women in group B were living with their husbands, 60 (73.17%) were primigravidas and 22 (26.82%) were multigravidas. There were 6 (7.31%) single women in group A and none in group B ( $p=0.014$ ;  $RR=2.08$ ; 95%  $CI$  1.77-2.44).

Thirty seven (45.12%) multigravidas were affected with violence, as compared to 45 (54.87%) primigravidas,

**Table I:** Sociodemographic characteristics of women in group A and group B.

	Group A	Group B	p-value	RR	95% CI
<b>Age</b>					
< 20 years	5 (6.09%)	4 (4.87%)	0.999	1.12	0.28-5.88
20-30 years	77 (93.90%)	78 (95%)			
<b>Education</b>					
Uneducated	28 (34.14%)	32 (39%)			
< 5th grade	8 (9.75%)	12 (14.63%)	0.604	1.17	0.64-2.13
> 5th-<12th grade	38 (46.34%)	34 (41.4%)	0.49	1.13	0.8-1.6
> 12th grade	8 (9.75%)	4 (4.87%)	0.206	1.43	0.88-2.32
<b>Occupation</b>					
Housewife	74 (90.24%)	71 (86.58%)			
Labourer	2 (2.43%)	3 (3.65%)	0.628	1.28	0.43-3.78
Professional	6 (7.31%)	8 (9.75%)	0.559	1.19	0.64-2.23
<b>Parity</b>					
Primigravida	45 (54.87%)	60 (73.17)	0.015	1.46	1.09-1.97
Multigravida	37 (45.12%)*	22 (26.82%)			
<b>Marital Status</b>					
Single mother	6 (7.31%)*	0	0.014	2.08	1.77-2.44
Married women	76 (92.68%)	82 (100%)			

\*Statistically significant result at  $p \leq 0.05$  RR=Relative Risk CI=Confidence Interval**Table II:** Sociodemographic characteristics of husbands in group A versus group B.

	Group A (n=82)	Group B (n=82)	p-value	RR	95% CI
<b>Age</b>					
20-30 years	82 (100%)	82 (100%)	-	-	-
<b>Education</b>					
Uneducated	24 (29.26%)*	13 (15.85%)	-	-	-
< 5th grade	5 (6.09%)	13 (15%)*	0.001	2.34	1.07-5.10
> 5th grade-<12th grade	41 (50%)	43 (52.43%)	0.103	1.13	0.96-1.84
>12th grade	12 (14.63%)	13 (15.85%)	0.187	1.35	0.84-2.17
<b>Occupation</b>					
Labourer	73 (89.02%)	67 (81.70%)	0.185	1.39	0.81-2.39
Professional	9 (10.97%)	15 (18.29%)	-	-	-
<b>Income</b>					
< Rs. 5000	10 (1.21%)	8 (9.75%)	-	-	-
Rs. 5000-10,000	3 (3.65%)	2 (2.43%)	0.999	1.08	0.47-2.47
> Rs. 10,000	3 (3.65%)	5 (6.09%)	0.673	1.48	0.55-3.97
Income not known	66 (80.48%)	67 (81.70%)	0.634	1.12	0.72-1.75

\*Statistically significant result at  $p \leq 0.05$  RR=Relative Risk CI=Confidence Interval**Table III:** Risk factors for violence in husbands in group A versus B.

Risk factors	Group A (n=82)	Group B (n=82)	p-value	RR	95% CI
Addiction	32 (39.02%)*	9 (10.97%)	0.001	1.92	1.47-2.51
Aggressive nature	21 (25.60%)*	10 (12.19%)	0.001	1.48	1.09-2.00
Unemployment	6 (7.31%)*	1 (1.21%)	0.001	1.77	1.26-2.46
Another women	9 (10.97%)*	-	0.001	2.12	1.8-2.51
Involvement of in-laws	13 (15.85%)*	5 (6.09%)	0.001	1.53	1.1-2.13

\*Statistically significant result at  $p \leq 0.05$  RR=Relative Risk CI=Confidence Interval**Table IV:** Maternal and perinatal complications in abused versus non-abused women.

	Group A	Group B	p-value	RR	95% CI
<b>Maternal Complications</b>					
<b>Obstetrical complications</b>					
Bleeding in pregnancy	1 (1.12%)	1 (1.12%)	0.999	1.0	0.25-4.03
Preterm labour	3 (3.65%)	4 (4.87%)	0.999	1.17	0.49-2.80
Obstructed labour	3 (3.65%)	4 (4.87%)	0.999	1.17	0.49-2.80
Perineal tears (3rd degree)	3 (3.65%)	-	-	-	-
<b>Medical complications</b>					
Anaemia	38 (46%)	30 (36.58%)	0.205	1.22	0.9-1.65
Hypertension	1 (1.12%)	1 (1.12%)	0.999	1	0.5-4.03
Depression	21 (25.60%)*	3 (3.65%)	0.001	2.01	1.58-2.56
Suicidal attempt	1 (1.12%)	0	0.999	2.01	1.72-2.3
<b>Perinatal complications</b>					
Low birth weight (< 2500 gms)	1 (1.12%)	1 (1.12%)	0.999	1	0.25-4.03
Intrauterine death	2 (2.4%)	4 (4.87%)	0.682	1.52	0.48-4.76
5-minute Apgar score < 7	0	0	-	-	-

\*Statistically significant result at  $p \leq 0.05$  RR=Relative Risk CI=Confidence Interval

which was statistically significant ( $p=0.015$ ;  $RR=1.46$ ;  $95\% CI=1.09-1.97$ ).

Forty three (52.43%) of the abused women had been victims to physical, verbal and emotional abuse, 41 (50%) had been emotionally abused, 22 (26.82%) had been physically abused, while 1 (1.21%) woman was sexually abused. The most frequent type was slap on face in 20 (24%). Less frequent were kicks and punches in abdomen in 5 (6%). Besides the use of hand in 20 (24.39%), sticks were used in 5 (6.09%), legs in 5 (6.09%), and knife was used in 1 (1.21%) for causing harm to the abused women. Parity and infant birth outcome (in terms of birth weight and Apgar score at 1 and 5 minute) did not differ in the two groups.

The factors identified for violence include addiction (to alcohol, drugs and smoking) in 32 (39.02%) cases, alleged aggressive nature of husband in 21 (25.60%) cases, unemployment in 6 (7.31%) cases, involvement of husband with another women in 9 (10.97%) cases, and husband being influenced by in-laws in 13 (15.85%) cases. The risk factors for violence are mentioned in Table III. All the risk factors identified in the husbands of group A were found to be statistically significant, when compared with group B with  $p$ -value of 0.001.

Depression was identified in 21 (25.60%) cases in group A, though it was observed in only 3 (3.65%) cases in control group. This was statistically significant, with  $RR$  of 2.01.

Antenatal complications were not observed in a statistically significant manner in group A or group B (Table IV). Lack of antenatal checkup or late booking was observed in 6 (7.31%) cases. There were 4 (4.87%) cases, who were forced to deliver at home, with 1 (1.12%) ended up in third degree perineal tear and 3 (3.65%) cases had obstructed labour and then referred to hospital for emergency caesarean sections. Forced tattooing of the name of husband on hand, resulting in hypertrophic scar, was observed in 1 (1.12%) patient. All the 4 neonates were delivered with good Apgar score of  $>7$ .

## DISCUSSION

Violence against wives by their husbands is a shockingly prevalent problem in Pakistan, likely affecting the health of adolescent and adult women. Most of the Pakistani women accept domestic violence as a part of their lives, and perceive it as permitted by religion.

The United Kingdom Department of Health describes domestic violence as a continuum of behaviour ranging from verbal abuse through to threats and intimidation, manipulative behaviour, physical and sexual assault, to rape and even homicide.<sup>9</sup> The United Nations report in 1995 also included forced pregnancy, abortion and sterilization as the different forms of violence,

experienced by women at the hands of their partners.<sup>12</sup> Domestic violence against women imparts hazardous effect on the health of women and their children, who witnessed it. In Pakistan, due to social setup and societal acceptance, domestic violence is taken to be normal and personal issue of a family. The present study has revealed a significantly high burden of violence in married women.

Between 2.5% and 3.4% of women experience partner abuse during pregnancy in the UK. Studies from the US report the prevalence of domestic violence during pregnancy to be between 5.2% and 33.7%, with the greatest risk occurring postpartum and amongst teenagers.

The most important cause for violence in the study was addiction of husband in 39.02%, followed by aggressive nature of husband in 25.60% and unemployment in 7.31% of the cases. Ansar *et al.* had identified that low-income and unemployment of husband was observed in 74.24% cases and aggressive nature of husband was observed in 11.26% of the cases.<sup>13</sup>

Overall, the number of housewives who had suffered violence was greater, but the occupation really did not have any relationship with violence. Similarly, the education level of women did not make a great difference. This finding is consistent with the study conducted by Chhabra *et al.* who also concluded that violence takes place, irrespective of education of the women.<sup>14</sup>

Pregnancy-related complications were not observed in the affected females in group A, nor in control group of the study in a statistically significant manner. This includes the occurrence of the stillbirth, which did not occur in abuse group. Similar findings were observed in a cross-sectional, nationally representative study in Bangladesh by Silverman *et al.*<sup>15</sup>

Altarac and Strobino found no association between physical abuse during pregnancy and low birth weight. The pregnancy risk assessment monitoring system of the Centres for Disease Control and Prevention found that in the 17 states, where it investigated, the prevalence of physical abuse during pregnancy, domestic violence was unrelated to low birth weight. This was consistent with the findings of the present study, where no increase in low birth weight was observed in patients experiencing violence during pregnancy.<sup>15</sup>

Eight of 20 published studies (Coker *et al.*) addressing abuse during pregnancy and adverse pregnancy outcomes showed no association between violence during pregnancy and low birth weight. In agreement with the above studies, no relationship was identified between violence and low-birth weight or pre-term delivery, in the present study.<sup>1</sup>



In examining abuse during pregnancy, Janssen *et al.* reported a positive association for perinatal death, and Covington *et al.* found positive associations for fetal death or neonatal death. Berenson *et al.* reported one fetal death in their study occurring among the women unexposed to violence. Two cases (2.4%) of intrauterine death were observed in patients exposed to physical violence, while 4 (4.87%) cases of intrauterine death were observed in patients unexposed to violence in the current study. Only 1 (1.12%) case of miscarriage was identified in each group. No case of low Apgar score was identified in each group. Three studies (by Schei *et al.*, Cokkinides *et al.*, Leung *et al.*) investigated the association between violence and miscarriage with conflicting results. Two studies found a positive association between violence and neonatal intensive care unit admission, while three other studies did not.<sup>16</sup> These discrepancies among the results of different studies had likely occurred due to different study populations and small sample sizes.

Despite the presence of various socio-demographic risk factors for poor pregnancy outcome in the study group, such as low-income, low-educational achievement of husband, and single marital status, no pregnancy-related complications were observed in the abused women (group A). This is consistent with the study by Kearney *et al.*, who found that the proportion of infants with birth weight < 2500 grams, gestational age < 37 weeks, or 5-minute Apgar < 7 was not significantly greater in abused women than in non-abused women.<sup>16</sup> There was no case of maternal death in abused group, though there was 1 (1.13%) case that had attempted suicide in group A of the current study.

Twenty eight cases of maternal deaths were identified due to suicide, in 1997-1999 report on confidential enquiries into maternal deaths, in the United Kingdom.<sup>17</sup>

Domestic violence significantly affects a women's physical and psychological health. Depression in women is becoming widely recognized as a major health problem around the world. Niaz *et al.* had identified depression among 62% of the women affected from violence,<sup>18</sup> while the present study identified significant depression among the abused women.

The findings of the present study was consistent with the UK survey of antenatal and postnatal women, who had found significant association between depression and domestic violence.<sup>9</sup> Chhabra also identified that women who experience violence during pregnancy are more likely to have physical disorders, depression and anxiety.<sup>14</sup> Maternal morbidity due to psychiatric disorders is common. Worldwide, depression during pregnancy and the postpartum period remains the least recognized complication of childbearing, with tragic outcomes for the family and society.<sup>19</sup> There were no

perinatal complications in either group, but women affected from violence suffered from depression, which is an important contributor towards maternal morbidity. So far, this important issue has been neglected.

Small sample size of the study and failure to provide support to the abused women were the main drawbacks and limitation of this study.

It can be speculated that those women who declined to be interviewed were the women, who may be most at risk for adverse pregnancy outcome, and they did so because of fear of retaliation. Therefore, the study did not reflect any difference (other than depression) in the pregnancy outcome, between the two groups. Clearly, in future, efforts are required to develop a strategy about how to deal with such women. Based on this study findings, authors recommended that all professionals including nurses, obstetricians, physicians and psychologists must be educated about this issue and should be trained to identify the problem. Continuous research is required to ensure a fuller and more complete understanding of the problem and to be able to create solutions.

## CONCLUSION

Women are subjected to different type of violence during pregnancy. The study identified some factors associated with violence against women, which can be used as foci for intervention strategies that are urgently required to prevent the devastating consequences of domestic violence on women's health. Except depression, the differences between the two groups, with regard to maternal and neonatal complications, did not reach statistical significance.

**Recommendation:** Findings authors recommended that all professionals including nurses, obstetricians, physicians and psychologists must be educated about this issue and should be trained to identify the problem. Continuous research is required to ensure a fuller and more complete understanding of the problem and to be able to create solutions.

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## Annexure I

### Personal characteristics

Age:	Women; husbands.
Education:	Women; husbands.
Husband's income:	-----
Pregnancy:	Planned; unplanned.
Type of male partner:	Employed; unemployed; educated; uneducated; drug user; personality defects (continued...)

Type of abuse:	Physical abuse; verbal abuse; emotional; forced pregnancy by husbands; dowry violence; forced abortion; economic abuse; domestic murder; effect on mother and foetus; physical abuse.
Sites of injury:	Face; abdomen; legs; other areas; genital tract infections; genital tract injury.
Effect on pregnancy:	Miscarriage; premature delivery; intrauterine death; placental abruption.
Psychological problems in women:	Anxiety; depression; drug or alcohol dependence.

## Annexure II

### Abuse assessment screen

- Had you ever been hit, slapped, kicked or otherwise physically hurt by someone?
- During your pregnancy, were you ever hit, slapped, kicked, or otherwise physically hurt?
- Had anyone ever touched you in a sexual way you did not want to?

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