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Domestic Violence During Pregnancy and its Effects on Gestational Age and Birth Weight

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SUMMARY

Objective: To estimate the prevalence and characteristics of domestic violence in pregnancy and to determine its relationship with gestational age and birth weight. **Design**: Cross-sectional prospective study. **Place and Duration of study:** Sobhraj Maternity Hospital, Karachi from December 2003 to May 2004. **Patients and Methods**: One thousand low-income, relatively low risk, recently delivered women participated in this study. Confidential interviews were conducted using a structured questionnaire. The main outcome measures were a history of domestic abuse in the antecedent pregnancy, its nature and severity, infant gestational age at delivery and birth weight. **Results:** In this study, the prevalence of domestic violence during pregnancy was 24.8%. Women who reported physical, sexual or emotional abuse during pregnancy were significantly more likely than non-abused women to give birth prematurely (23.8% versus 8.1%, p = 0.001) or to a baby with low birth weight (32.1% versus 7.4 %, p = 0.001). **Conclusion:** The present data suggests that domestic violence during pregnancy can play a role in preterm birth and low birth weight. As healthcare professionals, we need to be aware of this issue and maintain a high index of suspicion for the possibility of abuse in our clinical work.

Keywords: Domestic violence during pregnancy, preterm birth, low birth weight.

INTRODUCTION

Domestic violence is described as an intentional violent or controlling behaviour by a person who is in an intimate or close relationship with the victim[1]. Domestic violence can include verbal abuse, intimidation, social isolation, sexual abuse and physical assault. Although recognized as a an important social health issue worldwide, little research has been done in Pakistan to determine the prevalence of domestic violence and its health consequences for pregnant women and their children. Our local programme for antenatal care provides no guidelines regarding a healthcare professional's response to violence, no instruments for disclosure, and no directions about support and referral when confronted with an abused woman.

Battered women tend to feel isolated, entrapped and depressed. Screening for domestic violence in the antenatal care setting is seen as a helpful and caring intervention, as it helps the victims to address this issue and feel supported. The objective of this study was to identify women with a history of domestic violence in their antecedent pregnancy and to determine its impact on preterm birth and low birth weight.

PATIENTS AND METHODS

This study was conducted in the maternity wards of Sobhraj Hospital, Karachi. One thousand recently delivered women with none of the medical and obstetrical conditions that may have lead to spontaneous preterm birth and/or low birth weight, were selected. Eligible women delivering both vaginally as well as by Caesarean section were included in this study. In-depth confidential interviews were conducted during the first 72 hours postpartum using a questionnaire with structured and close-ended questions. The participants were classified into one of two groups: those who reported being abused by their husbands during the

antecedent pregnancy and those who denied such abuse (controls). "Emotional" abuse was defined as social isolation of the victim (not permitting her to meet with relatives or friends). "Verbal" abuse was defined as use of bad or abusive language and/or intimidating behaviour. "Physical" abuse was any form of violent contact with the patient that may or may not have resulted in injury. "Sexual" abuse was defined as non-consensual sex during the antecedent pregnancy.

Medical records were reviewed to collect information on gestational age at delivery and birth weight. Gestational age was based on the respondents' last menstrual period (LMP), if the LMP and an early ultrasound scan agreed within ten days. If not, then an early ultrasound scan (< 20 weeks' gestation) was used to determine the gestational age. Spontaneous preterm birth was defined as one that occurred from 24 weeks and 0 days to 36 weeks and 6 days, after spontaneous preterm labour or rupture of membranes. Low birth weight was defined as birth weight less than 2500 grams at delivery. Pregnancy outcomes of women in the abused group were compared with the controls.

The data was fed on the computer package "Microsoft Excel" and analyzed on SPSS ver 8.0. The results were given in the text as frequency and percentage for categorical variables, and mean standard deviation for continuous variables. To compare proportions (percentage of categorical variables between a group of women reporting domestic violence during pregnancy and the control group of women), the "Chi-Square test" was used. Statistical significance was set at $p<0.05$.

RESULTS

Out of the 1000 total respondents, 248 (24.8%) reported a history of domestic violence during the antecedent pregnancy. Women in the study sample were similar socio-demographically, as shown in Table 1. The mean age group of the respondents was 20-29 years and the prevalence of domestic violence was also greatest in this age group (87.1%). There was no statistical difference in the educational status of both groups up to the primary level. However, 8.5% of women in the abused group were educated up to secondary school or Matric as compared to just 1.2% women in the control group. Our study also revealed that only 54.8% of the abused women were booked in the antenatal period as compared to 73.1% of the women in the non-abused group.

Approximately 87% of women in the abused group reported one or more episodes of physical abuse in the antecedent pregnancy. The pattern of violence revealed that slapping was the most common form of physical assault, reported by 87.1% of the abused women. The most frequent sites of physical abuse in this study were the face and neck region (23.7%) and abdomen (17.3%). Of the 248 women in the abused group, 68.5% acknowledged being forced against their will to have sexual relations with their husbands during the current pregnancy.

Emotional abuse was reported by 63.1% of women in the abused group. All the respondents(n=248) in the abused group reported verbal abuse by their husbands in some form or the other, with shouting being the most commonly employed method of intimidation by the spouses (Table 2).

Table 3 compares the perinatal outcomes between women abused in the current pregnancy and the non-abused women. A significant association was found between the occurrence of domestic violence and preterm birth ($p = 0.001$). In the abused group, the preterm birth rate was found to be 23.8% versus 8.1% in the control group. This study also demonstrated that the risk of delivering low birth weight infants was higher in women who experienced emotional, verbal and/or physical abuse in pregnancy than in women in the non-abused group (32.8% vs. 7.4%, $p = 0.001$).

DISCUSSION

Domestic violence is most strongly related to the status of women in our society. Significant positive associations with all forms of violence in Pakistan are found for lack of girls' completion of primary school, our women's attitudinal acceptance of wife-beating, husband's jealousy, his need to exercise control, and male-dominated financial decision-making. For many Pakistani women, the only time they come in contact with the healthcare system is during pregnancy. Yet abuse during

Table 1: Socio- Demographic and Maternal Characteristics

Socio-Demographic Indicators Respondents	Domestic violence (n=248)		Non violence (n = 752)		P-Value
	Number	Percent	Number	Percent	
Age:					
16-20	10	4.0	20	2.7	0.272
20 – 29	216	87.1	711	94.5	0.001
30 – 39	22	8.9	21	2.8	0.001
Education:					
Illiterate	118	47.6	378	50.3	0.463
Can read the Quran	71	28.6	288	38.3	0.006
Primary	38	15.3	77	10.2	0.030
Secondary / Matric	21	8.5	9	1.2	0.001
Parity					
1-3	201	81.0	432	57.4	
4-6	47	19.0	305	40.6	0.001
Status					
Booked	136	54.8	550	73.1	0.001
Non Booked	79	31.9	169	22.5	0.003
Referred	33	13.3	33	4.4	0.001

Table 2: Type of Violence In Pregnancy

	No.	Percent
1. Emotional abuse (Social isolation)	152	61.3
2. Verbal abuse in this pregnancy:		
Has your husband ever put you in fear by:		
a) Staring	70	28.2
b) Shouting	248	100.0
c) Breaking things	75	30.2
d) Stops talking	78	31.5
3. Physical abuse in this pregnancy:		
Has your husband ever:		
a) Pushed or shoved you	93	37.5
b) Pulled your hair	79	31.9
c) Slapped you	216	87.1
d) Kicked you	20	8.1
f) Hit you with some object	33	13.3
Injuries suffered in this pregnancy		
a) Face and neck	59	23.7
b) Arms	25	10.1
c) Chest	33	13.3
d) Abdomen	43	17.3
e) Lower extremities	33	13.3
4. Sexual abuse		
Has your husband ever had non-consensual sex with you in this pregnancy?	170	68.5

women often remain an undetected high-risk group. This is because they are unlikely to volunteer information about an abusive relationship due to fear of reprisal from their violent partner, a desire to protect their children, and their own feelings of shame and embarrassment.

In this study, the prevalence of domestic violence in the antecedent pregnancy was found to be 24.8%. This is lower than the prevalence described in similar studies conducted at the Jinnah Postgraduate Medical Center, Karachi, in which the prevalence of prenatal violence was 34.8% and 37.3% respectively[2,3]. However it is higher than the prevalence quoted in the international literature. In a cohort of 500 pregnant women in England, the prevalence of domestic violence during pregnancy was 17%.4 The USA national estimates for assaults on pregnant women range from 1-20%.[5] The prevalence of domestic violence was shown to be highest in the age group 20-29 years. Younger women have been found to be more at risk of domestic violence due to their vulnerability and inexperience with interpersonal relationships. Data from the study revealed that 8.5% of the abused women were educated up to secondary school or Matric, as opposed to 1.2% women in the control group. One possible explanation for this may be that where men cannot establish their authority intellectually, they may do so physically.

Table 3: Neonatal Characteristics.

	Domestic Violence (n = 248)		Non-Violence (n = 752)		P-Value
	Number	Percent	Number	Percent	
Gestational Age (weeks)					
< 34	16	6.5	11	1.5	0.001
34 - 36+6	43	17.3	50	6.6	0.001
≥ 37	189	76.2	691	91.9	0.001
Birth Weight (gms):					
Up to 1999	20	8.1	11	1.5	0.001
2000-2499	59	23.8	44	5.9	0.001
2500-2999	70	28.2	303	40.3	0.001
≥ 3000	99	39.9	394	52.4	0.001

The multiple ways in which domestic violence occurs in relationships has led experts to call it a "beast with many appendages". Even in marriages where there was no physical torture, verbal abuse was found to be commonplace in this study. Verbal abuse is a psychological aggression used by an intimate partner to coerce, criticize, humiliate and ridicule. The humiliation and indignity suffered by women, as a consequence of this form of abuse, robs them of their self-esteem and self-confidence. Not only their own mental health suffers, but that of their children is affected as well. Rickert et al have suggested that battered women consider episodes of verbal abuse to have a greater adverse effect on them compared to physical acts of violence.[6] These adverse health outcomes include disability preventing work, arthritis, frequent headaches, chronic pelvic pain, stomach ulcers, diarrhea or constipation. The commonest sites of injuries in the present study were the face and neck region (23.7%).This finding corroborates those of Heiden et al, who in their study concluded that the most frequented targets of physical abuse inflicted by spouses were the upper arms, forearms, and the face and neck region.[7] Nearly half the women in the abused group in this study were either non-booked or referrals. Delay in seeking prenatal care, missed visits in the antenatal OPD and unexplained injuries particularly to the face, breasts and abdomen are the "red flags" that can alert caregivers to the possibility of abuse in their patients.

A significant association was found between domestic violence in the index pregnancy and preterm birth (23.8% vs 8.1%). The occurrence of low birth weight (LBW) was also significantly greater in the abused group at a rate of 32.1% versus 7.4% in the non abused group. The mechanisms linking violence with LBW could be direct, through abdominal trauma linked to placental damage, premature rupture of membranes, or release of prostaglandins leading to preterm labor and LBW. Stress could also constitute an intermediate pathway from violence to LBW, acting through the neuroendocrine axis, causing the release of catecholamines, beta-endorphin, and cortisol, which can lead to vasoconstriction, fetal hypoxia, fetal growth restriction, as well as provoke the release of prostaglandins, thereby contributing to preterm labor. Physical, sexual or emotional abuse during pregnancy can also lead indirectly to adverse birth outcomes by affecting the pregnant woman's health behviours. For example, violence during pregnancy has been associated with delayed entry into prenatal care, smoking, and poor maternal nutrition and weight gain, all of which are considered risk factors for intrauterine growth restriction and low birth weight. In a study by Copper et al, "stress" was the only psycho-social characteristic that was significantly associated with spontaneous preterm birth or low birth weight.[8] Boy and Salihu[9], Valladares[10] and Murphy et al.[11] have all reported

that women who experience physical abuse during pregnancy are at higher risk of LBW babies. These findings are consistent with those of the present study.

Domestic violence is increasingly recognized as a potentially modifiable risk factor for adverse pregnancy outcomes.[12] Poor fetal growth is the major single determinant of antepartum stillbirth and is also associated with perinatal death due to prematurity. The risk of sudden infant death syndrome (SIDS) also varies inversely with the birthweight percentile. LBW infants are at increased risk of hypertension and diabetes when they become adults (a consequence of the intrauterine stress suffered in fetal life). Routine screening for violence during pregnancy by healthcare personnel can help identify those high risk women who may require increased surveillance to avoid perinatal and long-term complications. Of equal importance is raising awareness on domestic violence and its negative consequences. Our women are the most deprived and vulnerable section of the community. They must be given opportunities to acquire basic literacy to improve their social status and become economically self-sufficient. Legal and legislative protection needs to be reviewed. This study also indicates that routine enquiry for domestic violence is acceptable to our women if conducted in a safe and confidential environment.

CONCLUSION

Domestic violence during pregnancy is an under-recognized but significant public health problem. All pregnant women should be screened for past or current history of abuse. The campaign to end violence against women can be strengthened by ensuring a broader scope of prevention, protection, justice and reparation for victims. We also propose more research on this serious health issue, including studies of other population groups.

REFERENCES

1. Neville F, George M, Joseph C. Essentials of Obstetrics and Gynaecology. Philadelphia: Elsevier, 2004.
2. Razia K, Nighat MK, Khursheed JN. Domestic violence in women attending Obstetrics and Gynaecology services at JPMC, Karachi. The Medical Spectrum Vol.22, No. 7,8 July-August 2001.
3. Ghulam Ali. Oppressed Souls. Dawn Magazine. Sept. 1, 2002.
4 Johnson JK, Haider F, Ellis K, Hay DM, Lindow SW. The prevalence of domestic violence in pregnant women. BJOG. 2003 Mar; 110 (3): 272-5.
5. Washington State Domestic Violence and Pregnancy Facts. Available on: http://www.wscadv.org.
6. Rickert VI, Weimann CM, Berenson AB, Kolb E. The relationship among demographics, reproductive characteristics, and intimate partner violence. Am J Obstet Gynecol. 2002 Oct; 187 (4): 1002-7.
7. Heiden LW, Janson PO. Domestic violence during pregnancy. The prevalence of physical injuries, substance abuse, abortions and miscarriages. Acta Obstet Gynecol Scan 2000 Aug; 79 (8): 625-30.
8. Copper RL, et al. The preterm prediction study: Maternal stress is associated with spontaneous preterm birth at less than thirty-five weeks' gestation. Am J Obstet Gynecol 1996; 175(5): 1286-92.
9. Boy A, Salihu HM. Intimate partner violence and birth outcomes: a systematic review. Int J Ferti Women Med 2004; 49:149-164.
10. Eliette V, Mary E, Rodolf P, Ulf H, Lars P. Physical abuse during pregnancy: A risk factor for low birth weight in Nicaragua. Obstetrics and Gynecology 2002; 100: 700-5.
11 Murphy C, Schei B, Myhr T L, Du-Mont J. Abuse: a risk factor for low birth weight? A systematic review and meta-analysis. CMAJ. 2001 May 29; 164: 1567-72.
12. Neqqers Y, Goldenberg R, Cliver S, Hauth J. Effects of domestic violence on preterm birth and low birth weight. Acta Obstetric Gynecol Scand. 2004 May; 83(5): 455-60.

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