

Pregnancy Complications as Risk Factors for Physical Abuse in Women Attending Sir Ganga Ram Hospital Lahore – A Cross Sectional Comparative Study

Alia Zaineb Asad¹, Shazia Ashraf², Qurat ul Ain³, Sana Shafique⁴, Mobeen⁵, Nudrat Sohail⁶

- 1 Associate Professor, Department of Gynecology & Obstetrics, Fatima Jinnah Medical University, Lahore Pakistan
Manuscript writing
- 2 Associate Professor, Department of Gynecology & Obstetrics, Allama Iqbal Medical College, Lahore Pakistan
Study design
- 3 Senior Registrar, Department of Gynecology & Obstetrics, Sir Ganga Ram Hospital, Lahore Pakistan
Data collection
- 4 Post Graduate Resident, Department of Gynecology & Obstetrics, Sir Ganga Ram Hospital, Lahore Pakistan
Data collection
- 5 Senior Registrar, Department of Gynecology & Obstetrics, Sir Ganga Ram Hospital, Lahore Pakistan
References layout
- 6 Professor, Department of Gynecology & Obstetrics, Lahore General Hospital, Lahore Pakistan
Supervision, Proof reading

CORRESPONDING AUTHOR

Dr. Alia Zaineb Asad
Associate Professor, Department of Gynecology & Obstetrics, Fatima Jinnah Medical University, Lahore Pakistan
Email: alia_asad@hotmail.com

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ABSTRACT

Background: Domestic violence has been associated with adverse fetal and maternal outcome in pregnancy. Prevalence of abruption, anemia, IUGR, low birth weight is frequently seen in women suffering from domestic violence. Physical abuse during pregnancy has worse outcome as compared to other forms of abuse. Women are very reluctant to share their dilemmas. Poor obstetric characteristics can act as red flags for detecting physical violence. **Objective:** To Identify association of obstetric risk factors/complications with physical abuse. **Study Design:** Cross sectional comparative study. **Settings:** Department of Gynecology & Obstetrics, Sir Ganga Ram Hospital, Lahore Pakistan. **Duration:** January 01, 2022 to June 30, 2022. **Methods:** Patients fulfilling inclusion criteria were included in study after taking consent; from postnatal ward of Sir Ganga Ram hospital, Lahore. Women were divided into two groups, those who were positive for physical domestic violence and those who were negative and their pregnancy and delivery was reviewed for high risk factors. It was a across sectional study carried out in postnatal ward of Sir Ganga Ram Hospital and purposive consecutive sampling was done till required sample was obtained. **Results:** Total no of patients who consented were 184. Physical abuse was found in 40.8% women under study. Age of these women ranged between 18–35 years. Low education was reported in 60.3% of these women, 55.4% belonged to low socioeconomic class, multiparity was seen in 35.9%, preterm in 40.8%, Cesarean delivery in 68.5%, Anemia in 62.0%, placental abruption in 21.7%, LBW in 35.9%, stillbirth in 17.9%, low Apgar in 48.9% of these women. Multiparity, preterm birth, Anemia, LBW, Stillbirth and Low Apgar showed significant association with physical abuse (all p-values <0.05). Likewise, patients who were victims of physical abuse were more likely to be suffering from LBW [OR=3.777, 95% CI 1.627-8.766], Anemia [OR=3.855, 95% CI 1.696-8.760], Placental Abruption [OR=2.059, 95% CI 0.839-5.050], low Apgar [OR=1.743, 95% CI 0.748-4.059], and Preterm delivery [OR=1.629, 95% CI 0.760-3.491]. **Conclusion:** Poor Obstetric characteristics have a strong association with physical domestic abuse.

Keywords: Domestic violence, Pregnancy outcome, Physical abuse.

INTRODUCTION

Domestic violence during pregnancy is a serious social issue that has an adverse effect on mother and the fetus. Domestic violence is defined according to WHO as Psychological, Physical or Sexual violence that are inflicted on a woman by a family member or intimate sexual partner, siblings or a well-known person within

the family.¹ The worldwide prevalence of domestic violence is 4-57 percent as per recent studies.²

Several risk factors exist for domestic violence against women with inclusive evidence. A look into literature regarding risk factors shows that being single, multiparity, low socioeconomic status, low educational level and unplanned pregnancies were considered as

significant predictors of domestic violence during pregnancy.³

Domestic violence is associated with an adverse maternal and perinatal outcome due to the direct effect of physical trauma in addition to the emotional component associated with it. The degree of physical violence ranges from non-fatal to fatal harm for mother and fetus.⁴ Increased rate of operative deliveries has also been seen with domestic violence. According to European studies, the rise of Caesarian Section is more in patients suffering from domestic violence.⁵ As is Physical and mental impairment, pain and depression.⁶ Deleterious effect of domestic violence on fetal outcome may include miscarriage, low birth weight and preterm birth.⁷

The aim of our study is to determine the prevalence of physical component of violence among pregnant women and find association between it and adverse maternal and fetal outcome, as compared to mothers not suffering from physical abuse; in patients presenting at a tertiary care hospital of Lahore. This can motivate development of protocols to screen women for domestic abuse and guide them towards safety at different times in their pregnancy. Further studies can show the effect of early interventions during antenatal period in controlling domestic abuse and hence lower the risk of obstetric complications.

METHODS

This is a cross sectional study which was carried out in Sir Ganga Ram hospital for duration of 3 months. Consecutive sampling was done in post-natal ward till sample size reached. Women from postnatal ward were included in the study. They were counselled about the study and intended benefits and consent taken. Their files were checked for complications of pregnancy and delivery and it was noted on a proforma. Then questions were asked from a questionnaire by a doctor trained for the purpose. Those who were not willing to share the information were excluded from the study. Women were interviewed in complete privacy. Strict confidentiality was assured and participants were clearly informed about the purpose of the study. Adequate time was spent with each woman to make sure she was comfortable. The questionnaire was developed from WHO's research paper on domestic violence and its effect on maternal health, as used by M Di Franco *et al* in their paper on domestic violence during covid 19⁸ and P.V Indu⁹ however some questions were omitted for the purpose of brevity.

Data analyzed using the Statistical Package for Social Sciences (SPSS) version 26.0. All categorical variables reported using frequency (percentage) and compared using chi square test. Crosstabs and binary logistic regression performed to calculate odds ratio and adjusted odds ratio with 95% confidence interval. The covariates

included mothers' age, education, socioeconomic status, parity, gestational age, mode of delivery, Hb level, placental abruption, birth weight, stillbirth and Apgar score. The outcome variable was physical abuse. P-value ≤ 0.05 considered as significant.

RESULTS

Physical abuse was observed in 40.8% women. The age of women (n=184) ranged from 18 to 35 years. Among sociodemographic factors, the frequency of age-group 26-35 years was higher as compared to the age-group 18-25 years (57.6% vs. 42.4%). The frequency of low education was greater as compared to the higher education (60.3% vs. 39.7%). The frequency of poor class was greater as compared to the middle class (55.4% vs. 44.6%). Among maternal factors, multiparity (≥ 04) found in 35.9% women, gestational age (< 37 weeks) in 40.8% women, Caesarean delivery in 68.5% women, Anemia (Hb < 10.5 g/dL) in 62.0% women, Placental Abruption in 21.7% women, low birth weight (< 2500 grams) in 35.9% women, stillbirth in 17.9% women, and low Apgar score (< 07) in 48.9% women.

Table 1: The characteristics of study population

		Count (184)	Column (100%)
Age (years)	18-25	78	42.4%
	26-35	106	57.6%
Education	HSSC & above	73	39.7%
	SSC & below	111	60.3%
Socioeconomic status	Middle class	82	44.6%
	Poor class	102	55.4%
Parity	< 04	118	64.1%
	≥ 04	66	35.9%
Gestational age (weeks)	≥ 37	109	59.2%
	< 37	75	40.8%
Mode of delivery	Vaginal	58	31.5%
	Cesarean	126	68.5%
Hemoglobin level (g/dL)	≥ 10.5	70	38.0%
	< 10.5	114	62.0%
Placental abruption	No	144	78.3%
	Yes	40	21.7%
Birth weight (grams)	≥ 2500	113	61.4%
	< 2500	71	38.6%
Stillbirth	No	151	82.1%
	Yes	33	17.9%
Apgar score	≥ 07	94	51.1%
	< 07	90	48.9%
Physical abuse	No	109	59.2%
	Yes	75	40.8%

Multiparity (≥ 04) with p-value 0.039, gestational age (< 37 weeks) with p-value < 0.001 , Anemia (Hb < 10.5 g/dL) with p-value < 0.001 , low birth weight (< 2500 grams) with p-value < 0.001 , stillbirth with p-value 0.006, and low Apgar score (< 07) with p-value < 0.001 was significantly associated with physical abuse, see table 2.

Table 2: Comparison between women with and without physical abuse

			Physical abuse			p-value
			No	Yes	Total	
			109	75	184	
			59.2%	40.8%	100.0%	
Age (years)	18-25	Count	53	25	78	0.056
		Row %	67.9%	32.1%	100.0%	
	26-35	Count	56	50	106	
		Row %	52.8%	47.2%	100.0%	
Education	HSSC & above	Count	45	28	73	0.700
		Row %	61.6%	38.4%	100.0%	
	SSC & below	Count	64	47	111	
		Row %	57.7%	42.3%	100.0%	
Socioeconomic status	Middle class	Count	54	28	82	0.137
		Row %	65.9%	34.1%	100.0%	
	Poor class	Count	55	47	102	
		Row %	53.9%	46.1%	100.0%	
Parity	< 04	Count	77	41	118	0.039
		Row %	65.3%	34.7%	100.0%	
	≥ 04	Count	32	34	66	
		Row %	48.5%	51.5%	100.0%	
Gestational age (weeks)	≥ 37	Count	77	32	109	<0.001
		Row %	70.6%	29.4%	100.0%	
	< 37	Count	32	43	75	
		Row %	42.7%	57.3%	100.0%	
Mode of delivery	Vaginal	Count	35	23	58	0.964
		Row %	60.3%	39.7%	100.0%	
	Cesarean	Count	74	52	126	
		Row %	58.7%	41.3%	100.0%	
Hemoglobin level (g/dL)	≥ 10.5	Count	55	15	70	<0.001
		Row %	78.6%	21.4%	100.0%	
	< 10.5	Count	54	60	114	
		Row %	47.4%	52.6%	100.0%	
Placental abruption	No	Count	91	53	144	0.059
		Row %	63.2%	36.8%	100.0%	
	Yes	Count	18	22	40	
		Row %	45.0%	55.0%	100.0%	
Birth weight (grams)	≥ 2500	Count	85	28	113	<0.001
		Row %	75.2%	24.8%	100.0%	
	< 2500	Count	24	47	71	
		Row %	33.8%	66.2%	100.0%	
Stillbirth	No	Count	97	54	151	0.006
		Row %	64.2%	35.8%	100.0%	
	Yes	Count	12	21	33	
		Row %	36.4%	63.6%	100.0%	
Apgar score	≥ 07	Count	71	23	94	<0.001
		Row %	75.5%	24.5%	100.0%	
	< 07	Count	38	52	90	
		Row %	42.2%	57.8%	100.0%	

Patients having low birth weight babies (<2500 grams) [OR=5.945, 95% CI 3.100-11.403] had 6-time higher risk of suffering from physical abuse. Mothers with Anemia (Hb < 10.5 g/dL) [OR=4.074, 95% CI 2.066-8.034] and low Apgar score (< 07) [OR=4.224, 95% CI 2.251-7.926] had 4-time higher chance of association with physical abuse. Preterm birth [OR=3.233, 95% CI 1.747-5.986] and stillbirth [OR=3.144, 95% CI 1.436-6.881] had 3-time

greater association; Placental abruption [OR=2.099, 95% CI 1.033-4.264], multiparity (≥04) [OR=1.995, 95% CI 1.080-3.686], age 26-35 years [OR=1.893, 95% CI 1.029-3.482], and poor class [OR=1.648, 95% CI 0.905-3.003] had 2-time higher risk of physical abuse, see table 3.

Table 3: Sociodemographic and maternal risk factors of physical abuse

	OR	95% Confidence Interval	
		Lower	Upper
Age (years) (18-25 / 26-35)	1.893	1.029	3.482
Education (HSSC & above/SSC & below)	1.180	.645	2.158
Socioeconomic status (Middle class/Poor class)	1.648	.905	3.003
Parity (<04/≥04)	1.995	1.080	3.686
Gestational age (weeks) (≥37/<37)	3.233	1.747	5.986
Mode of delivery (Vaginal/Cesarean)	1.069	.567	2.017
Hemoglobin level (g/dL) (≥10.5/<10.5)	4.074	2.066	8.034
Placental abruption (No/Yes)	2.099	1.033	4.264
Birth weight (grams) (≥2500/<2500)	5.945	3.100	11.403
Stillbirth (No/Yes)	3.144	1.436	6.881
Apgar score (≥07/< 07)	4.224	2.251	7.926

After adjustment, low birth weight (<2500 grams) and anemia (Hb <10.5 g/dL) had 4-time higher risk of physical abuse. Placental abruption [OR=2.059, 95% CI 0.839-5.050] had 2-time higher risk of physical abuse. Low Apgar score (<07), preterm birth, age 26-35 years [OR=1.506, 95% CI 0.626-3.622], poor class [OR=1.219, 95% CI 0.576-2.579] and cesarean delivery [OR=1.106, 95% CI 0.516-2.373] also had higher risk of physical abuse, see table 4.

Table 4: Adjusted sociodemographic and maternal risk factors of physical abuse

	OR	95% Confidence Interval	
		Lower	Upper
Age (years) (18-25/26-35)	1.506	0.626	3.622
Education (HSSC & above/SSC & below)	0.848	0.406	1.771
Socioeconomic status (Middle class/Poor class)	1.219	0.576	2.579
Parity (<04 / ≥04)	1.006	0.429	2.355
Gestational age (weeks) (≥37/<37)	1.629	0.760	3.491
Mode of delivery (Vaginal / Cesarean)	1.106	0.516	2.373
Hemoglobin level (g/dL) (≥10.5/<10.5)	3.855	1.696	8.760
Placental abruption (No/Yes)	2.059	0.839	5.050
Birth weight (grams) (≥2500/<2500)	3.777	1.627	8.766
Stillbirth (No / Yes)	1.065	0.372	3.047
Apgar score (≥07/<07)	1.743	0.748	4.059

DISCUSSION

Domestic violence is a serious health issue that needs attention. Societal stigma, fear for the kids, stunting of the courage and will of the mothers do not allow them to come forward or seek help. lack of any kind of support from their families or friends results in women suffering in silence.

Exposure to any form of violence during pregnancy has long lasting adverse maternal and fetal side effects. In our study we found physical abuse in 75(40.8%) patients, with significant maternal and fetal effects. This is the same as quoted by E Berhanie *et al.*¹⁰

Ribeiro *et al* has found that violence in pregnancy increases the likelihood of low-birth-weight babies and increases still births which is similar to our study that showed low birth weight in 71 patients (38.6%, p value <0.001) and still birth was observed in 33 patients (17.9% p value <0.006%).¹¹

A study by Hamidreza *et al* concluded that physical abuse has significantly affected the APGAR score of newborn baby¹² and our study also showed a prevalence rate of low APGAR score in physically abused as 58.7%, p-value <0.001. These findings will need further stratification according to any associated complications of pregnancy like PIH, abruption, IUGR etc.; which in themselves can be directly or indirectly related to physical violence. Our study indicated increased prevalence of violence in 26-35 years age group as compared to younger patients and also in women who belonged to low socioeconomic status (102 patients,55.4%). Our results are consistent with Mahapatro *et al* study results.¹³

This however is in contrast to findings of some other research which shows younger patients to be more at risk of physical abuse. In patients with four or more children the chances of being physically abused was almost equal to that of not being abused. While in lower parity more patients negated the presence of physical abuse. This is in contrast to studies reported from Vietnam and Tanzania.^{14,15}

In present study 109 patients (59.2%, p value <0.001) were at term (>37 weeks of gestation) at the time of delivery with positive history of any type of violence. A recent study conducted in Nepal (Nepal demographic and Health survey 2016) supported the association of Anemia in pregnancy and domestic violence. These findings are supported by current study which revealed the high prevalence of Anemia (114 patients, 62%) in abused group.¹⁶ This high prevalence of anemia in physically abused group, however, needs further clarification. It can be due to the general circumstances of the patient and the way she is treated with low income and low availability of nutrition. This again is an area of further research.

Violence positive groups had strong association with placental abruption which was observed in 40 patients (21.7%, p value 0.059) in our study. Multiple systematic reviews conducted, support the high rate of placental abruption in abused group. Ellsberg M, Jansen PA *et al* have concluded the same.¹⁷

As Garcia *et al* report in their WHO survey report on domestic violence and women's health: "Reproductive health providers should be sensitized and trained to recognize and respond to violence, particularly during and after pregnancy".¹⁸

So, it's our moral duty to recognize prevalence of domestic violence and its effect on pregnancy and counsel the couple about the importance of a happy mother for a happy and healthy child.

CONCLUSION

Domestic violence is strongly associated with obstetric risk factors and poor outcome, is quite common, albeit under reported. Well defined support programs should be developed with protocols for patient safety so that women can get timely help.

Screening for domestic violence should be part of antenatal services, however domestically abused women have a low attendance for booking. Such patients may only present in emergency or present in OPD already having an obstetric risk factor. So post-natal period may be a good time to pick such cases. The patients presenting with poor obstetric markers should be specially screened for domestic violence and provided counselling, help and guidance about NGOs and organizations offering help in such cases. One such organization is by the name of Hikmat. Knowledge about Government helplines and support centers should be made public.

LIMITATIONS

This is a very limited study and needs to be generalized.

SUGGESTIONS / RECOMMENDATIONS

This study needs to be repeated in other centers of the city and other cities as well to better understand the results.

CONFLICT OF INTEREST / DISCLOSURE

None.

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