

Original Paper

# Domestic Violence and its Maternal and Fetal Consequences Among Pregnant Women



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**Citation:** Sobhani S, Niknami M, Mirhaghjou SN, Atrkar-e Roshan Z. Domestic Violence and its Maternal and Fetal Consequences on Pregnant Women. J Holist Nurs Midwifery. 2018; 28(2):143-149. <https://doi.org/10.29252/HNMJ.28.2.143>

**Running Title:** Domestic Violence Among Pregnant Women. J Holist Nurs Midwifery

**doi:** <https://doi.org/10.29252/HNMJ.28.2.143>

## Article info:

**Received:** 03/09/2017

**Accepted:** 06/18/2017

## ABSTRACT

**Introduction:** Domestic violence is a global phenomenon which during pregnancy, not only affect mother's health, but can also directly or indirectly have an abusive effect on fetus's health.

**Objective:** The objective of the present study is to determine the relationship between domestic violence during pregnancy with its consequences on pregnant women referring to public maternity hospitals of Rasht City, Iran.

**Materials and Methods:** This research was a cross-sectional study of the descriptive analytical type, conducted on 402 pregnant women who referred to the state-owned maternity hospitals of Rasht City for childbirth in 2014. In this research, the study samples were collected through the convenient sampling method. Data collection tools were a questionnaire comprising of three parts; demographic information, WHO domestic violence during pregnancy questionnaire, and consequences in pregnancy, which were completed through interview with mothers. Finally, the obtained data were analyzed, through descriptive and inferential statistics conducted through the Chi-square test and multiple logistic regression.

**Results:** Findings showed that 48.5% of pregnant women during their pregnancy had been subjected to domestic violence (the majority was emotional violence with 45.5% prevalence) by their spouses, and all aspects of violence have been reported with mild intensity. On determining the association between the experience of domestic violence during pregnancy and its effects on pregnancy, the Chi-square statistical test revealed statistically significant relationship between domestic violence and delivery method i.e., cesarean section ( $P=0.0001$ ), vaginal bleeding ( $P=0.001$ ), preterm labor ( $P=0.041$ ), premature rupture of embryonic membranes ( $P=0.044$ ) and low birth weight of neonates ( $<2500$  g) ( $P<0.0001$ ). In the final model, of the main variables of the research, the emotional violence ( $OR=1.064$ , 95%  $CI=1.007-1.125$ ,  $P=0.026$ ) was the predictor of maternal and neonatal complications.

**Conclusion:** Approximately, half of the women under the study were subject of domestic violence during their pregnancy, and considering its connection with the risk of maternal and neonatal complications, it is recommended that the proper interventions be planned to reduce domestic violence and its adverse consequences in pregnancy.

## Keywords:

Domestic violence, Pregnant women, Pregnancy

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## Introduction

Violence against women consists of any gender-related violent behavior that harms or is accompanied with the likelihood of physical, sexual, emotional harm or suffering for women. This type of behavior can manifest by threat, absolute denial of women's authority or freedom, which occur in public or private [1]. For a number of reasons like reduction in sexual relations, misbeliefs in pregnancy, or spouse's unnatural feelings about the pregnancy, it can be a starting or sometimes aggravating point for domestic violence against a pregnant woman [2]. Violence during pregnancy, besides affecting the mother, can directly or indirectly affect the health of the fetus, for instance it can cause miscarriage, premature rupture of membranes, low Apgar, death of the fetus, premature childbirth, or low birth weight of the baby [2, 3]. According to the international statistics, at least one of every 5 women has been subjected to domestic violence by her spouse during her lifetime [4-6]. Of all women's diseases, domestic violence and rape comprises 5% in the developing countries and 19% in the developed countries [7]. In some studies in the United States, Canada, North American, European and Southeast Asian countries, the prevalence of physical violence has been reported as 16%–46% [7-10]. Also in another study, the prevalence of violence during pregnancy has been reported as 2% in Australia, Denmark, Cambodia and the Philippines which rises up to 13.5% in Uganda [11]. According to the latest study in Tehran, Iran, the prevalence of domestic violence against pregnant women in Tehran is 60.6% which includes 60% as emotional violence, 14.6% as physical violence and 23.5% as sexual violence [5].

The reported inconsistencies in the frequency, incidence and consequences of violence in pregnancy could be due to the lack of customized tools. Results of some studies indicate significant association between domestic violence with maternal and fetal problems in a way that premature rupture of fetal membranes is significantly higher in the mothers suffering from violence. Also, domestic violence showed significant relationship with the low birth weight of neonates in a way that women who gave birth to babies with low weight had been subject to violence during their pregnancy 8 times more than mothers without experiencing violence, but the Apgar score of the first and the fifth minute of the birth of the baby did not show any significant relationship with physical violence during pregnancy [3]. In addition, in most instances it is observed that domes-

tic violence increases the complications of pregnancy such as miscarriage, preterm childbirth, bleeding, pre-eclampsia, dystocia, and postpartum depression [12].

Furthermore, the results of Suleimani et al. [13] study showed that most women who had been subjected to violence during their pregnancy delivered their babies through caesarian section. However, some studies reported different results. Considering that different studies have showed various results regarding the frequency of domestic violence [5, 14], it seems that conducting such studies is necessary. Thus, the researcher decided to conduct a research with the objective of determining the relationship between experiencing domestic violence during pregnancy with the consequences of pregnancy in women referring to state maternity hospitals in Rasht City, Iran.

## Materials and Methods

The present cross-sectional study is of the descriptive analytical type and was conducted in Rasht in two state-owned maternity hospitals. The research population included all pregnant women who had referred to state-owned maternity hospitals Rasht for childbirth during the time of study (3 months). To determine the sample size, at first a preliminary study was conducted on 10 pregnant women in the state-owned maternity hospitals of Rasht and after estimating the situation and severity of the family violence in three dimensions of physical, emotional, and sexual (frequency of violence in the preliminary study was 40% and the test power was 80%), the sample size was obtained as 368 women and by accounting a 10% probable dropping, the final sample size was considered 402 women.

Samples were selected through the convenient sampling method. In this way, at first the number of mothers who referred to two hospitals for childbirth every day were estimated and by counting the number of daily childbirth at each hospital, a total of 202 samples from one hospital and 200 samples from the other hospital were enrolled. After approval of the research by the Ethics Committee of Guilan University of Medical Sciences, the researcher referred to the hospitals during a period of three months from September 23, 2014 till December 21, 2014. The mothers and their spouses had to be mental healthy and written consent was obtained from those who had normal delivery or cesarean section. After the initial introduction (including introducing the researcher, establishing communication, obtaining verbal and written consent from the samples, expressing the research's objectives, assuring them of confiden-

tiality of the information, and the inclusion criteria), the questionnaire on domestic violence and demographic data of the mother and her spouse were completed through the interview method. The neonatal specifications were collected by reviewing their medical files.

Data collection tools were a questionnaire consisting of 3 parts: questionnaire on domestic violence during pregnancy which was based on the World Health Organization questionnaire on domestic violence and the questionnaire prepared by Hajian [15], which included 26 items and examines violence in three dimensions; physical (10 items), sexual (5 items), and emotional (11 items). Responding to the questions was based on 5-point Likert-type scale (never, once, twice, three to five times, more than five times). In investigating the condition of domestic violence, a woman was considered a violence victim when she has given at least one positive response to each of the questions of the questionnaire on physical, sexual, or emotional violence.

The scoring of the severity of violence in any of the three categories is as follows; never: 0 point, once during pregnancy: 1 point, twice during pregnancy: 2 points, 3-5 times during pregnancy: 3 points, and more than 5 times during pregnancy: 4 points. Regarding the intensity of physical violence, minimum score is 0 and the maximum score is 40, whereas with regard to sexual violence, the minimum score is 0 and the maximum score is 20, and in emotional violence, the minimum score is 0 and the maximum score is 44. In general, the intensity of violence was divided into 4 categories; non-violence, mild, medium, and severe violence. In the third part, 10 questions were allocated to the consequence of domestic violence on pregnancy such as preterm childbirth, type of childbirth, presence of abnormal bleeding, premature rupture of membranes, and fetal consequences including low birth weight, death of the fetus, and the Apgar score. After collecting the data, they were analyzed by employing the descriptive and inferential statistics, including Chi-square test and the multiple logistic regression using SPSS 20. P value less than 0.05 was considered the significance level for the study tests. This study is a part of a research plan approved with code number 93060404 in Guilan University of Medical Sciences.

## Results

According to the results, the mean (SD) age of women participating in the research was 28.24(5.91) years and the mean (SD) age of their spouses was 32.01(6.4) years so the majority of them were aged between 20 and 40

years. Meanwhile, the youngest mother in the study was 13 years old and the oldest one was 44 years old. The majority (78.9%) of the study couples had no family relationship with each other; the mean (SD) number of childbirth in the studied women was 1.62 (0.78) and the majority of them (81.8%) had no history of miscarriage. In addition, the mean (SD) of living children of the participating women was 1.62 (0.77) and most of them (52.5%) had one child. Moreover, the majority (39.8%) of the women and their spouses (38.3%) had high school diplomas. The majority of the families had a monthly income of less than 120 \$ and 4% of women were subject to violence before their marriage and starting a family.

According to the results obtained in the research, 48.5% of the pregnant women had been subject to domestic violence by their spouse during their pregnancy, particularly emotional violence (45.5%) (Table 1). On further examining the severity of domestic violence, it was revealed that in all the dimensions of violence, the severity was reported as "mild."

The relationship between the experience of domestic violence (physical, emotional, and sexual) during pregnancy and maternal and fetal consequences was found significant, as measured through Chi-square test. In other words, experiencing domestic violence during pregnancy increased the likelihood of childbirth through caesarian section by 2.1 times as compared with normal delivery (OR=2.1, 95% CI=1.390-3.193, P=0.0001). Furthermore, the results showed that vaginal bleeding in women experienced domestic violence was 2.8 times (OR=2.8, 95% CI=1.544-5.349, P=0.001) more than women without any history of violence during pregnancy. Also a significant association was observed between the circumstances of experiencing domestic violence and preterm childbirth. For example, the instances of preterm childbirth in women with experience of domestic violence were more than those without experiencing such violence (OR=1.6, 95% CI=1.017-2.587, P=0.041) (Table 2). Regarding the experience of domestic violence during pregnancy, the results showed that the association of this variable with the baby birth weight was significant, i.e., the cases of birth of the child with less than 2500 g in women who experienced domestic violence were more than women without any history of experiencing violence during pregnancy (Table 3).

By examining the regression coefficient and the relationship between domestic violence with maternal and neonatal complications in terms of demographic variables in the matched model based on significant variables in single-variable analysis (miscarriage, the mother

**Table 1.** Distribution of domestic violence (physical, emotional, and sexual violence) in women under the study

The Circumstance of Experiencing Violence	N (%)	
	Yes	No
Circumstances domestic violence	195(48.5)	207(51.5)
Circumstances of physical violence	41(10.2)	361(89.8)
Circumstances of emotional violence	183(45.5)	219(54.5)
Circumstance of sexual violence	67(16.7)	335(83.3)

and her spouse's education level, spouse's occupation and income and addiction), in the final model the severity of the emotional violence score (OR=1.064, 95% CI=1.007–1.125, P=0.026) out of the main variables of the research, and among individual-social variables (level of education of the woman, her spouse's education level, spouse's occupation, addiction, miscarriage, spouse's income), only the woman's educational level with a confidence level close to the significant level (OR=0.82, 95% CI=0.673-1.021, P=0.078) were the predictors of maternal and neonatal complications. So that by increase in the score for emotional violence, the risk of maternal and neonatal complica-

tions increases by 1.06 times and by increase in the mother's education level, the maternal and neonatal complications reduce (Table 4).

## Discussion

Results of data analysis showed that approximately half of women under the study had been subject to domestic violence during their pregnancy. Similar to the present study, Dowlatian et al. had also found the same figures [3]. It is likely that inconsistencies reported in connection with the frequency, incidence and consequences of violence in pregnancy, in this study, the

**Table 2.** Distribution of experiencing domestic violence during pregnancy in terms of maternal consequences in maternity wards under the study

Violence	Consequences of Pregnancy	Domestic Violence			Type of Test and Conclusion
		Yes N (%)	No N (%)	Total N (%)	
Type of childbirth	Normal	57(29.8)	95(47.3)	152(38.8)	$\chi^2=12.5$ $df=1$ $P=0.0001$ $OR=2.107$ $95\% CI=1.390-3.193$
	Caesarian	134(70.2)	106(52.7)	240(61.2)	
	Total	191(100)	201(100)	392(100)	
Vaginal bleeding	Yes	38(19.5)	16(7.8)	54(13.5)	$\chi^2=11.8$ $df=1$ $P=0.001$ $OR=2.87$ $95\% CI=1.544-5.349$
	No	157(80.5)	190(92.2)	347(86.5)	
	Total	195(100)	206(100)	401(100)	
Premature rupture of membranes	Yes	51(26.2)	45(21.7)	96(23.9)	$\chi^2=1.077$ $df=1$ $P=NS$ $OR=1.275$ $95\% CI=0.805-2.019$
	No	144(73.8)	162(78.3)	306(76.1)	
	Total	195(23.9)	207(100)	402(100)	
Preterm childbirth	<37 weeks	54(28)	40(19.3)	94(23.5)	$\chi^2=4.16$ $df=1$ $P=0.041$ $OR=1.622$ $95\% CI=1.017-2.587$
	>37 weeks	139(72)	167(80.7)	306(76.5)	
	Total	193(100)	207(100)	400(100)	

\* Chi-square test

**Table 3.** Distribution of experiencing domestic violence during pregnancy in terms of fetal consequences

Violence	Fetal Consequences	Domestic Violence			Sig.*
		Yes N (%)	No N (%)	Total N (%)	
First minute Apgar	Low Apgar score<7	20(10.3)	17(8.2)	37(9.2)	0.46
	Normal Apgar score>7	175(89.7)	190(91.8)	365(90.8)	
	Total	195(100)	207(100)	402(100)	
Fifth minute Apgar	Low Apgar number<7	3(1.5)	0(0)	3(0.75)	0.3
	Normal Apgar number>7	192(98.5)	207(100)	399(99.25)	
	Total	195(100)	207(100)	402(100)	
Weight of the newborn	<2500 grams	58(29.9)	24(11.6)	82(20.5)	0.0001
	2500-4000 grams	132(68)	171(82.6)	303(75.5)	
	≥4000 grams	4(2.1)	12(5.8)	16(4)	
	Total	194(100)	207(100)	401(100)	

\* Chi-square test

prevalence of physical violence experienced by pregnant women during their pregnancy was 10.2%. The low level of experiencing physical violence during pregnancy in Rasht as compared with other previous studies might be due to special condition of pregnant women and the cultural intelligence of this region. Emotional violence was the most prevalent type of violence experienced by pregnant women in Rasht.

Similar reported results with regard to high emotional violence in pregnant women were reported [3, 16]. Furthermore, the findings of this study showed that one fifth of women referring to maternity wards had experienced sexual violence during pregnancy, which was lower as compared to a similar study conducted in Tehran City [17]. This difference can be attributed

to several reasons including change in sexual behavior, reduced sexual intercourse during pregnancy [13] and cultural differences among people of various regions. Results obtained regarding the amount of severity of experiencing domestic violence generally showed that approximately half of the mothers under the study have experienced domestic violence during pregnancy. These findings are consistent with the results of another study in Iran [14].

In the present study, the relationship between domestic violence (physical, emotional and sexual) during pregnancy with maternal consequences (type of childbirth, premature rupture of membranes, abnormal bleeding, and pre-term childbirth) was investigated and it was found that the relationship between

**Table 4.** Regression coefficient of relationship between domestic violence and maternal and fetal consequences

Regression Coefficient of Connection of Domestic Violence With Maternal and Fetal Consequences	Sig.	Odds Ratio	CI 95% Odds Ratio	
			Lower	Upper
Emotional violence	0.026	1.064	1.007	1.125
Mother's education level	0.078	0.829	0.673	1.021
Constant	0.389	1.416		

Variables entered in step one: Number, Miscarriage, Education level, Education level of the spouse, Occupation of the spouse, Income, Addiction, Spouse

Variables entered in the final step: Education level



domestic violence with type of childbirth and vaginal bleeding and premature childbirth was significant. In a cross-sectional study by Suleimani et al., a significant association was observed between domestic violence and type of childbirth; in a way that the type of childbirth in most women who had been subject to domestic violence was through caesarian section [13].

Similarly, in Bagherzadeh study at Shiraz University of Medical Sciences, a positive statistical relationship was found between psychological, physical, and economic violence and childbirth through caesarian section. The same study showed a significant relationship between bleedings in the second and third trimester of pregnancy with all types of violence [16]. In another study by Hassan et al. a significant statistical relationship was observed between abusive behavior and premature childbirth [5]. In our study, the relationship between experiencing domestic violence and baby's birth weight was significant. This observation was consistent with the results of Bagherzadeh et al. study that showed an inverse and significant relationship between weight of the newborn and psychological and sexual violence [16]. Lack of newborn weight gain delivered by the mother who was subject to the violent behavior can be the result of the mother's emotional distress [18]. Also in Sattarzadeh et al. study, the average weight of the newborns in the two groups of mothers with and without experiencing psychological violence had a significant difference [19].

Finally, the study results showed that out of the main variables of the research, emotional violence, and of the individual-social variables, the degree of mother's education are among the predictors of maternal and neonatal complications in a way that by increase in the severity of emotional violence score, the risk of maternal and fetal complications increases, whereas by the increase in degree of mother's education, maternal and fetal complications decline.

By considering the findings of the present study regarding domestic violence against pregnant women, it is suggested that studies be conducted to investigate the effective factors in the creation of and approaches for reducing domestic violence among couples. It is also recommended that meetings and educational activities be planned, held and organized in health and treatment centers to empower women for facing life's problems and to educate them in healthy life skills as well as to familiarize them with the underlying factors of domestic violence so that they can avoid creating the premise for violence. Also, familiarizing women

with communication and compatibility skills to counter problems and proper selection of alternative behaviors in solving problems as well as using family counseling services whenever such problems occur can reduce the likelihood of domestic violence against pregnant women [20].

Planning to rise the spouses' awareness on their wives' psychological, emotional, physical, and sexual needs during pregnancy and taking necessary measures to detect instances of violence perpetrated against pregnant women referred to health and treatment centers and screening them would be useful to execute preventive measures against domestic violence [21]. Because, one of the most important roles of community health nurses is education, these nurses could prevent domestic violence during pregnancy and its maternal consequences by visiting homes and educating the families, specially the spouses, and implementing the community-based nursing process in the families and also by carrying out interventions like attracting support for women, providing educational, psychological, and treatment counseling for women and their spouses.

## Acknowledgments

The researchers felt obliged to appreciate the Office of Deputy Chancellor for Research and Technology of Guilan University of Medical Sciences and the Honorable Dean of Shahid Beheshti School of Nursing and Midwifery in Rasht and the Director of Social Determinants of Health Research Center and the Director of Social Security Organization Rasht, whose immense contribution made this research possible. Also we acknowledge and thank all those who assisted us in conducting this research.

## Conflict of Interest

The authors declared no conflicts of interest. All authors have agreed on the final version and meet at least one of the ICMJE authorship criteria, including substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data, drafting the article or revising it critically for important intellectual content.

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