



The Relationship between Domestic Violence and Maternal-Fetal Attachment

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Abstract

Background: Due to the high prevalence of domestic violence among women and more physical and psychological vulnerability during pregnancy, and thus, vulnerability to the growing fetus, there is an urgent need for accurate identification of these individuals. Accordingly, this study aimed to investigate the relationship between domestic violence and maternal-fetal attachment.

Methods: In a cross-sectional study, 300 women with a gestational age of 20 to 40 weeks were selected randomly and categorically out of pregnant women covered by these centers. The data collection tool was a demographic questionnaire, a domestic violence questionnaire, and maternal-fetal attachment questionnaire.

Results: The mean age of the women was 28.32 ± 5.96 years; the mean number of years after the marriage was 7.01 ± 4.22 years, and the mean age of the spouse was 31.37 ± 5.93 . The mean number of pregnancies was 1.9 ± 1.67 . Further, 65.7% of the women experienced mild violence, 19.3% were under moderate violence, and 15.1% under severe violence. The linear regression of the relationship between the total score of violence and the overall score of the attachment of the mothers was significant, while controlling some of their demographic characteristics (P value < 0.001).

Conclusions: The exact knowledge of the effects of domestic violence on maternal-fetal attachment can empower and inform health center staff effectively to diagnose and manage violence against pregnant women. In this way, they can focus more on maternal and fetal emotional support and encouraging the pregnant women to adopt the right care.

Keywords: Domestic, Violence, Maternal-fetal, Attachment.

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courses, avoidance of high-risk behaviors such as tobacco and alcohol, and a more favorable attitude and motivation for breastfeeding, resulting in a satisfying pregnancy and improving maternal and fetal health.³ In a study, during pregnancy, a broad range of mother-to-fetus attachment was observed; the frequency and intensity of mother-to-fetus attachment behaviors improved with more advanced gestational age, particularly at about 18 to 22 weeks of gestation.⁴ Mothers with greater attachment to their fetus had more positive interactions with infants after delivery, which in turn can have a great influence on the emotional, cognitive, and social development of the child in the future.³ On the contrary, mothers with a weaker emotional relationship during pregnancy with their fetus showed higher levels of depression and anxiety during and after pregnancy, which can lead to a range of adverse aftermath effects.⁵ According to the Schechter study (2018), pregnant women exposed to domestic violence during childhood showed increased heart rate and violent behavior in response to a baby crying. These mothers also found it difficult to differentiate between the types of infant crying (crying from hunger, fear, pain or fatigue).⁶ Many studies have shown that maternal attachment to the fetus is closely related to the emotional disputes and interactions between the mother and other individuals.⁷ The attachment can be influenced by multiple problems such as social support, mental status, age of mother, gestational age, number of deliveries, marital status, family revenue, level of education, and high-risk pregnancy.¹ One of the main reasons for effective involvement of this attachment is the type of mother's relationship with relatives, particularly her husband. Application of domestic violence against pregnant women can make a significantly affect this issue. The world health organization describes domestic violence as a global problem in many countries and all socio-economic categories among women. Given the important contribution of domestic violence to physical damage and mental illness in females, it is not only a major health problem for females, but also it is experienced as an epidemic issue by one-third of the world's female population.^{8,9} Domestic violence can be physical, sexual, emotional, economic, or psychological actions or threats of actions that influence another person affecting 4.5 million women in the United States annually. Specifically, 4 to 8% of pregnant women experience this problem. Also, 50% to 60% of those who have experienced domestic violence before pregnancy have reported it during pregnancy.¹⁰ A study undertaken by the Ministry of health in 28 provinces of Iran in 2001 showed that 66% of females experienced at least one type

Introduction

Over the decades, the subject of prenatal attachment has been discussed and expressed in recent years in the form of maternal-fetal attachment.¹ Cranley (1981) defined maternal-fetal attachment as "the extent to which females engage in behaviors that imply reliance and communication with an unborn baby". He examined maternal-fetal attachment behaviors from a multitude of aspects and split them into five subgroups, including fetus commitment, distinguishing between themselves and the fetus, self-sacrifice, and parental recognition. He stated that behaviors such as talking to the fetus and abdominal touch to feel the movements of the fetus are part of the attachment behaviours.² With growing maternal-fetal attachment, the mother tends to have adequate prenatal care such as adequate nutrition, involvement in childbirth

of domestic violence throughout their lives.¹¹ In addition, many studies have examined the role of domestic violence during pregnancy in fetal injury, uterine rupture, premature birth, premature membrane rupture, low birth weight, limitation of intrauterine development, enhanced perinatal mortality, and an increase in the frequency of cesarean deliveries.^{12,13}

Most studies have focused on the effects of domestic violence on maternal and fetal physical status. On the other hand, this study aimed to investigate the relationship between domestic violence and maternal-fetal attachment during pregnancy.

Materials and Methods

This cross-sectional correlational study was conducted on 300 pregnant women who self-referred to four selected health centers in Shahroud city after obtaining the necessary permissions from January 2012 to July 2013. This study was carried out after providing adequate explanations to the healthcare staff, women involved in the research, and ensuring the confidentiality of their information. The sample size was calculated by considering the correlation between domestic violence and maternal-infant attachment in the Jafar-Nejad study (2011), which was equal to 465;¹⁴ then, with 95% confidence and 80% power, it was estimated to be 300 subjects here.

The inclusion criteria were being Iranian, living in Shahroud, being married, reading and writing literacy, and gestational age 20 to 40 weeks. The exclusion criteria included severe obstetric problems in the current pregnancy (such as bleeding, the threat to abortion, preeclampsia), a tragic accident, such as the loss of relatives in the course of the pregnancy, a history of psychiatric illness in the last year and during the pregnancy, and smoking or using drugs. The sampling method was stratified random sampling. We divided the health care centers into five classes according to their location. The first floor of the northern centers, the second floor of the eastern centers, the fourth floor of the southern centers and the fifth floor of the western centers. Then, from each floor of a health care center, a simple random method was selected. Four healthcare centers were randomly selected among 11 healthcare centers (centers were selected from four parts of north and south, east and west). Then, demographic characteristics and fertility questionnaires, domestic violence questionnaire, and maternal-fetal attachment inventory questionnaire were completed by participants. Demographic and fertility information questionnaire consisted of 30 questions, 15 questions on demographic and social characteristics, plus 15 questions about fertility and midwifery. The demographic characteristics questionnaire was developed by the researchers after reviewing the latest international books and articles on the topic of study whose validity was also determined via content validity. Once prepared, it was submitted to 7 faculty members and professors at Shahroud university of medical sciences. Tabrizi women Domestic Violence Questionnaire is a 5-point Likert scale, ranging from 1 (completely disagree) to 5 (completely agree) which includes 61 questions on spouse abuse, patriarchal beliefs, traditions, family training, and violence learning. A score between 0 and 60 indicates mild violence, 60 and 120 reflects moderate

violence, and a score above 120 represents intense violence against women during the last 3 months. In Tabrizi study, Cronbach's alpha coefficient was obtained as 0.183, suggesting the adequate reliability of the questions, items of the questionnaire and its different scales.¹⁵ In the present study, the reliability of the entire index as well as that of its subscales was confirmed with a Cronbach's alpha of 0.87.

Cranley maternal-fetal attachment questionnaire consists of 23 self-descriptive statements such as "I talk to my unborn baby" and "I try to picture what the baby will look like." Respondents answer on a 5-point Likert scale from "definitely yes" to "definitely no. It includes five subscales intended to explore different aspects of the maternal-fetal relationship: differentiation of self from the fetus, attributing characteristics and intentions to the fetus, interaction with the fetus, giving of self, and role taking. A higher score indicates more attachment. The maximum score in this questionnaire assigned to mothers is 115, while the minimum score is 23. The content validity and internal consistency of the scale have been already confirmed. Estimates for internal consistency reliability for this sample by Cronbach's alpha ranged from 0.54 to 0.88 for the subscales with the entire score being 35. A score was calculated for the total maternal-fetal attachment questionnaire and its five subscales. Azmoudeh translated this questionnaire in Iran, and its validity was determined by content validity method, while its reliability was confirmed by re-test, with the correlation coefficient being calculated as 0.85.¹⁶ In this study, the reliability of the entire index as well as that of its subscales was confirmed with a Cronbach's alpha of 0.84 on 10 women.

After completing and collecting questionnaires, data were analyzed by SPSS24 software. Frequency tables, mean and standard deviations were used to describe the data. Spearman correlation coefficient, Kruskal-Wallis test and general linear model were applied in data analysis. The significance level was set at 0.05.

Results

The mean age of the women was 28.32 ± 5.96 years; the mean number of years after the marriage was 7.01 ± 4.22 years, and the mean age of the spouse was 31.37 ± 5.93 . The mean number of pregnancies was 1.9 ± 1.67 . Further, 65.7% of the women experienced mild violence, 19.3% moderate violence, and 15.1% severe violence.

The results of independent t-test showed that the total score of violence in those who had satisfaction with the child's gender was significantly lower than for the others (Pvalue < 0.001). The overall score of attachment was significantly higher in those who had satisfaction with the child's gender (Pvalue < 0.001).

In women with complications of pregnancy, the total score of violence was lower (Pvalue = 0.031), but there was no significant difference between the total score of attachment among subjects with and without pregnancy complications (Pvalue = 0.94).

Women with infertility history and other women did not have any significant difference in terms of the total score of domestic violence (Pvalue = 0.21). The total score of attachment

was significantly lower in those with infertility history than in those with no history of infertility (Pvalue = 0.046). The results of one-way ANOVA revealed that there was a significant difference between the parents on the total score of domestic violence (Pvalue < 0.001) and the total score of attachment (Pvalue < 0.001), with intended or unintended pregnancies (table 1).

The results of Pearson correlation coefficient showed that there was a significant and negative difference between the total score of domestic violence and mother's age (r = -0.283, Pvalue < 0.001), spouse's age (Pvalue = 0.001, r = -0.223), number of years of study (001 / 0> P, 750 / 0- = r) and gestational age (P = 0.001, r = -0.19 / -0).

The correlation coefficient between the number of pregnancies and the total score of domestic violence was not significant (Pvalue = 0.097, r = -0.96). Also, the results of

Pearson correlation coefficient showed that there was a significant difference between the total score of maternal-fetal attachment and mother's age (Pvalue = 0.001, r = 0.253), spouse's age (Pvalue = 0.001, r = 0.202) 0 > P, 276/0 = r), gestational age (r = 0/213, r = 0/001), and the number of pregnancies (Pvalue = 0.006, r=0.060 = 0) (table 2).

The linear regression of the relationship between the total score of violence and the total score of the attachment-fetal attachment was significant, along with some demographic characteristics (Pvalue < 0.001). The results of this regression indicated that the total score of domestic violence with a coefficient of 0.410 had a negative and significant effect on the total score of maternal-fetal attachment (Pvalue < 0.001). By increasing the total unit score of violence, 0.410 points of total attachment score decreases (table 3).

Table 1. Mean and standard deviation of the total score of violence and the total score of the attachment of the mothers studied in terms of some of their demographic characteristics

Variable	N (%)	The total score of domestic violence (Mean ± SD)	The total score of maternal-fetal attachment (Mean ± SD)
Child gender satisfaction			
-Yes	266 (88/7)	29/9 ± 50/5	16/2 ± 94/9
-No	34 (11/3)	27/6 ± 73/5	16/2 ± 80/6
-P		<0/001	<0/001
Complications of pregnancy			
-Yes	55 (18/3)	28/5 ± 45/1	15/1 ± 96/7
-No	245 (81/7)	30/7 ± 54/9	17/1 ± 92/5
-P		0/031	0/094
Wanted or unwanted pregnancy			
-Both wanted	247 (82/3)	28/5 ± 49/6	16/1 ± 95/2
-Both unwanted	31 (10/3)	34/9 ± 71/0	17/7 ± 84/3
-Mother unwanted	20 (6/7)	34/3 ± 69/2	16/6 ± 82/1
-Father unwanted	2 (0/7)	0/0 ± 50/0	0/0 ± 103/0
-P		<0/001	<0/001
Infertility history			
-Yes	21 (7/0)	23/1 ± 45/2	13/3 ± 99/2
-No	279 (93/0)	30/9 ± 53/7	17/0 ± 92/8
-P		0/217	0/046

Table 2. The correlation coefficient of the total score of violence and total scores of attachment of mothers with some demographic characteristics

	The total score of domestic violence		Total score of maternal-fetal attachment	
Mother's age	-0/28	<0/001	0/25	<0/001
Spouse's age	-0/22	<0/001	0/20	<0/001
Number of education year	-0/45	<0/001	0/28	<0/001
Gestational age	-0/19	0/001	0/21	<0/001
Number of pregnancy	-0/01	0/097	0/16	0/006

Table 3. The results of linear regression and the relationship between the total score of domestic violence and the total score of the mother-fetal attachment, with the control of the intervening variable

Variable	Regression coefficient	B	SE	t	Pvalue
Fixed value	126/78	7/69		16/49	<0/001
Total domestic violence score	-0/40	0/02	-0/73	-16/65	<0/001
Infant's gender satisfaction	-5/50	2/14	-0/10	-2/57	0/011
Complications of pregnancy	-0/30	1/66	-0/01	-0/18	0/855
Number of education year	-0/56	0/22	-0/12	-2/57	0/011
Wanted or unwanted pregnancy					
Both wanted	-	-	-	-	-
Both unwanted	-3/45	2/21	-0/06	-1/56	0/121
Mother unwanted	-4/78	2/62	-0/07	-1/83	0/069
Father unwanted	3/79	7/94	0/02	0/48	0/633
Infertility history	-2/16	2/50	-0/03	-0/86	0/388
Gestational age	1/68	1/33	0/05	1/26	0/208
Number of pregnancy	2/01	0/80	0/10	2/52	0/012

Discussion

The results of this study indicated a direct relationship between the total score of domestic violence and the total score of maternal-fetal attachment during pregnancy. As many studies had been conducted over the effects of domestic violence on maternal and fetal physical effects and physical outcomes, we tried to discuss the most relevant articles on the subject.

There was a significant relationship between marital satisfaction and maternal plus fetal attachment in Torshizi's study (2013).¹⁷

The results of one-way ANOVA test in our study showed that there was a significant difference between the mean score of domestic violence (Pvalue < 0.001) and that of maternal-fetal attachment (Pvalue < 0.001) in parents with intended or unintended pregnancy, which are inconsistent with Begum's findings (2010).¹⁸

In the research conducted by Sarayloo et al. (2018) to determine the prevalence of domestic violence and its related factor, there was no significant relationship between mother's age, education level and women, as well as the husband's job and domestic violence, which are not in line with the observations in our study. It is because of the different questionnaire used and the lack of wide geographical distribution of centers as well as the small number of sampling centers (two health centers). Sarayloo also concluded that there is a significant relationship between unwanted pregnancy and domestic violence against pregnant women, which is consistent with our study.¹⁹ Schechter et al. (2018) found that mothers exposed to domestic violence during childhood had decreased maternal attachment during pregnancy and less attention to their child.⁶

Schwerdtfeger et al. (2007) stated that in mothers who were exposed to domestic violence during pregnancy, the quality of maternal-fetal attachment decreased significantly. This is important as the quality of prenatal attachment predicts the quality of maternal attachment to the baby after delivery as well as the mother and infant's interactive behavior, in line with the results of our study.²⁰

In our study, Pearson correlation showed that there is a significant negative relationship between the total score of domestic violence and the mother's age, the spouse's age, the education years, and the gestational age. As each of these variables increased, the total score of domestic violence decreased, which is consistent with Anglin's (1999) study.²¹

Arcos et al. (2001) believed that domestic violence has many effects on mother and infants, including increased risk of neonatal and childhood death, growth retardation and behavioral problems, especially sleep disorders, as well as emotional separation of mother and infant.¹³

Houth et al. (2002) emphasized that domestic violence during pregnancy hurts the health of the mother and the baby at the onset of pregnancy and during the first few months after childbirth.²²

The physical and psychological domestic violence applied by the husbands and relatives affects the maternal attention and care as well as attachment to the fetus. Timely screening of the mother for domestic violence can empower and inform the health center staff more effectively in identifying and managing violence against pregnant women through focusing more on maternal mental support and care for the fetus. This, in turn, helps to choose alternative behaviors and gaining communication skills.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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