Anxiety Level of Pregnant Women from Ahwaz Exposed to Domestic Violence

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Background: Domestic violence is a concern in the communities and need a wide attention. Violence against women can cause all kinds of physical and mental illness. This is a threat to woman's and family member's health. Stress, anxiety and depression during pregnancy are risk factors for adverse consequences. Little is known about the level of the mental illnesses in women who exposed to domestic violence during pregnancy. This study reported the level of anxiety in women who were victims of domestic violence in health centers in Ahwaz.

Methods: This was a cross-sectional study in which a sample of 110 pregnant women with domestic violence and pregnant women without violence were recruited. The data were collected using the demographic questionnaire, World Health Organization standardized domestic violence questionnaire, and the Beck Anxiety Inventory (BAI). The data entered in SPSS 21 and were analyzed using Chi-Square, Independent-t and Multiple Logistic Regression.

Results: The pregnant women in the domestic violence group had a higher mean score of anxiety ($P<0.05$). Women exposed to violence experienced psychological violence (57.75%), physical violence (37.73%) and sexual violence (33.88%). The psychological violence was the greatest influence on the level of anxiety in pregnant women.

Conclusion: This study demonstrated the impact of domestic violence on the level of anxiety in pregnant women and confirmed its treat to women's mental health.

►*Implication for health policy/practice/research/medical education:* Anxiety Level of Pregnant Women Exposed to Domestic Violence

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1. Introduction:

Intimate partner violence is one of the most common forms of violence against women and includes physical, sexual, and emotional abuse and controlling behaviors by an intimate partner (1, 2). Domestic violence is a serious problem around the world that destroys the bodies of family and community and threatens human health. It injures many people and creates physical, sexual, reproductive, and mental problems (3). As defined by the World Health Organization (2002), violence against women is any act of gender-related violence which is likely to cause physical, sexual, or emotional damage of women. Such behavior can occur through intimidation and absolute deprivation of authority and freedom, either publicly or privately (4).

A wide range of women are affected by domestic violence at different stages of life. More than a third of women referred to health systems due to domestic violence are pregnant (5). The prevalence of domestic violence varies around the world and has been reported between 15% and 71% (6). In Iran, the prevalence of domestic violence among pregnant women has been reported as 19.3-94.5% (7) which is higher than the prevalence of any pregnancy-related medical disorders such as preeclampsia, gestational diabetes, and so more (8).

Domestic violence in pregnancy can endanger both mother and child health (9). According to previous studies, adverse outcomes of pregnancy following violence during pregnancy may lead to abortion (10), preterm labor, placental abruption (11), chorioamnionitis (12), low birth weight (6), low Apgar score, and increased perinatal mortality (13), through physical or sexual trauma or through stress-related mechanisms.

Women exposed to domestic violence are more likely to have psychological problems (7). In addition to physical damage, many women suffer from long-term mental consequences of domestic violence. Several studies have shown an inverse relationship between violence and mental health (14).

Anxiety during pregnancy can cause multiple forms of complications including severe nausea and vomiting in early pregnancy, preeclampsia, preterm labor, low birth weight, fetal distress, stillbirth, neonatal death, and some neonatal abnormalities such as cleft palate and pylorus stenosis (15). High levels of anxiety during pregnancy not only may increase the risk of depression and anxiety and reduce the production and secretion of breast milk during the postpartum period, but also can lead to infants' irritability, more crying, unstable situation, and even reduced mental development of children at the age of 2 years (16). It was shown in a study by Ghahari *et al* (2009) that women who experienced domestic violence have higher levels of anxiety (17). It is while Kordi *et al*. (2013) showed no statistically significant relationship between the type of violence and the level of anxiety in pregnant women (18).

Given the high prevalence of domestic violence and the profound impact of stress on the health of pregnant women and neonates, and given that paying attention to the mental health of pregnant women has become a leading policy (19), the present study reported the level of anxiety in pregnant women exposed to domestic violence in Ahwaz city.

2. Materials and Methods:

This was a cross-sectional study and carried out in the health centers of Ahvaz city from June 2015 to August 2015. According to relevant studies and based on the equation (mean of two societies) (type one risk probability of 0.05, test power of 95%, and confidence of 95%), 154 women (77 in each group) were enrolled in the study. Inclusion criteria were Iranian nationality, understanding Persian, healthy in terms of mental disorders as well as chronic and incurable diseases (cancer, immunodeficiency, progressive multiple

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sclerosis, and so on), and lacking stressful event in the past year.

The data were collected using the demographic questionnaire, the WHO's standardized domestic violence questionnaire and the Beck Anxiety Inventory. The domestic violence questionnaire assesses the violence against wife/partner during the last year in three dimensions of physical, sexual, and psychological. The tool was applied by the WHO to evaluate the rate, severity, and type of domestic violence on 24097 women in 10 developing countries (20). Pregnant women who do not report violence from their spouses are considered as persons who have not domestic violence. Violence is categorized as mild for 1-2 violent behaviors, moderate for 3-5 violent behaviors, and severe for more than 5 violent behaviors. The questionnaire was extended by different researchers according to the study objectives and its psychometric features were confirmed in various studies (21-23). In a study by Hajian *et al*, the content validity for the total tool was 0.74, its reliability was 0.92, 0.81, and 0.89 for physical, sexual, and mental violence, respectively, and the mechanisms adopted to cope and deal with spouse violence was 0.88 (22).

Anxiety was assessed using the Beck Anxiety Inventory (BAI) introduced by Aaron Beck. It is designed according to 21 symptoms of anxiety and is scored based on Likert scale (each item is scored from 0 to 3), with higher scores indicating more anxiety. Reponses are scored as never (0), mild (1), moderate (2), and severe (3). The total score ranges from 0 to 63. A total score of 0-7 indicates no anxiety, 8-15 mild anxiety, 16-25 moderate anxiety, and 26-63 severe anxiety. Kaviani and Mousavi (24) reported a validity of 0.72 and Cronbach's alpha of 0.92 regarding the psychometric properties of the questionnaire by age and gender in Iranian population.

A total of 154 eligible pregnant women were enrolled into the study. After obtaining personal consent from the participants and determining the exact gestational age through calculation of the first day of the last menstrual period, questionnaires were completed by the participants in a private environment. First the WHO standardized questionnaire was used to allocate pregnant women in two groups: women exposed to domestic violence and women did not expose to domestic violence. Then anxiety level was determined through completion of the Beck Anxiety Inventory. The obtained data entered in SPSS-21 and data were analyzed using descriptive statistics through comparison of qualitative variables with Chi-square test, quantitative variables with *t*-test, and ordinal variables with Mann-Whitney test, at the significance level of 0.05. Finally, the Multiple Logistic Regression was used to investigate the influence of domestic violence on anxiety and the factors were reported with a 95% confidence interval.

3. Results:

The mean gestational age was 21.14 weeks in pregnant women exposed to violence and 21.19 weeks in the control group. Majority of women exposed to violence and control group were in (18-24) and (25-19) age group respectively. History of abortion were not significantly different in two group ($P<0.34$). Level of education of pregnant women and their spouses was significantly higher in the control group in comparison to women exposed to violence. Spouse smoking habit was significantly higher in the abused group than the control group. The history of spouse criminal conviction was significantly higher in the group exposed to violence than the control group (Table1).

The results showed that the mean score of anxiety in women with domestic violence was significantly more than the group of women who did not expose to violence (Table 2).

According to the results, the rate of mental violence was 57.75% in women at risk of violence, with mild, moderate, and severe mental violence rates of 22.1%, 32.5%, and 42.9%, respectively; the rate of physical violence was 37.73% with mild, moderate, and severe physical violence rates of 15.6%, 22.1%, and 26%, respectively; and the rate of sexual violence was 33.88% with mild,

Table1: Demographic Characteristics of Women attended the Interviews

Characteristics	Exposed to Domestic Violence n=77 (%)	Control group n=77 (%)	Significance
Age			
< 18 years old	4 (5.1)	2 (2.6)	
18-24 years old	31 (40.3)	22 (28.6)	
25-29 years old	25 (32.5)	33 (42.8)	NS
30-34 years old	12 (15.6)	15 (19.5)	
35-40 years old	5 (6.5)	5 (6.5)	
Education			
Primary	10 (12.9)	6 (7.8)	
Middle-school	20 (26)	19 (24.6)	
High-school	25 (32.5)	11 (14.3)	0.007
Diploma	20 (26)	30 (39)	
Collegiate	2 (2.6)	11 (14.3)	
Occupation			
Housewife	63 (81.8)	61 (79.2)	NS
Employed	14 (18.2)	16 (20.8)	
Husbands Age			
18-24	7 (9.1)	9 (11.7)	
25-29	36 (46.7)	26 (33.8)	NS
30-34	24 (31.2)	26 (33.8)	
35-40	10 (13)	16 (20.7)	
Husbands Education			
Primary	4 (5.2)	3 (3.9)	
Middle-school	31 (40.3)	13 (16.9)	
High-school	13 (16.8)	17 (22.1)	0.02
Diploma	20 (26)	32 (41.5)	
Collegiate	9 (11.7)	12 (15.6)	
Husbands Occupation			
Employee	10 (13)	18 (23.3)	
worker	24 (31.1)	19 (24.7)	NS
Self-Employed	37 (48.1)	37 (48.1)	
Unemployed	6 (7.8)	3 (3.9)	

Smoking by Husband			
Yes	40 (60)	26 (40)	0.03
No	37 (40)	51 (60)	
Husband's Addiction			
Yes	5(6.49)	2(2.6)	NS
No	72 (93.5)	75 (97.4)	
Husbands Criminal Conviction			
Yes	11 (14.28)	3 (3.9)	0.02
No	66 (85.72)	74 (96.1)	

NS: Non Significant

Table 2: Comparison of anxiety level in pregnant women exposed to domestic violence and control group

Anxiety level	Exposed to Domestic Violence Total n=77 (%)	Control Group Total n=77 (%)	Significance
Without	5 (17.9)	23 (22.9)	0.001
Mild	11 (22.9)	37 (17.9)	
Moderate	26 (72.2)	10 (27.8)	
Severe	35 (83.3)	7 (16.7)	

moderate, and severe sexual violence rates of 36.4%, 9.1%, and 11.7%, respectively.

To investigate the confounding variables that influence anxiety, Multiple Logistic Regression model was used. The results showed that after adjusting independent predictors: women's smoking, education, husbands smoking, and having a history of conviction, the violence can increase 2.21 times the level of anxiety in pregnant women (Table 3).

4. Discussion:

This study showed that pregnant women exposed to violence had higher anxiety levels compared to the control group. This was another confirmation of the fact that women subjected to domestic violence are more prone to mental problems which can worsen their health and the health of their fetuses imposing them to irreversible damage. In a study by Ghahari *et al* (2009) performed on (non-pregnant), a significant difference was reported in the level of anxiety between women subjected and not subjected to violence (17). In a study by Gill *et al*. on (non-pregnant) women referred to health centers, anxiety and depression were reported as the most common known disorder after domestic violence (25); however, in the study of Kordi *et al* (2013), no significant difference was found between the level of anxiety of pregnant women and the type of domestic violence (18).

Based on the results of this study, mental violence had the greatest impact on the level of anxiety in pregnant women followed by physical and sexual violence. This finding is consistent with that of Shayan *et al* (2014). They showed that being abused results in greater risk for mental health in terms of mental, physical, and sexual violence (26).

Table 3: Examination the relationship between violence and anxiety after adjustment for confounding variables in the Multiple logistic Regression

Predictor-variables	Estimation (95%)	Lower (95% CI)	Upper (95% CI)	P value
Violenced	2.211	1.51	2.92	0<001
Non violenced		reference		
Smoking	2.39	0.56	4.22	0.11
Nonsmoking		reference		
Primary education	1.3	-0.21	2.8	0.09
Middle-school education	2.36	1.005	3.7	0.001
High school education	1.77	0.46	3.08	0.008
Diploma	1.72	0.45	2.98	0.008
Collegiate		reference		
	husband			
Smoking	0.83	0.21	1.45	0.009
Nonsmoking		reference		
Having history of criminal conviction	1.12	-0.64	2.28	0.06
Non-having history of criminal conviction		reference		

In the present study, mental violence was the most common form of violence and this finding is consistent with those of other studies in Iran (17, 27).

The present study also revealed that increased levels of education of women or spouses reduced violence against women which is consistent with the findings of Alizadeh *et al* (2012), Hassan *et al* (2013), Aref (2003), and Bakhtiari and Omid Bakhsh (2003). It seems that the reason for this fact is empowerment and participation of women in applying life skills such as anger management and problem-solving (30-33).

Prenatal care provides an appropriate opportunity to identify women at risk of domestic violence. Not only is this the time when women are often in direct contact with health workers, but also health care and supportive services can be provided during pregnancy offering an opportunity to follow-up and care of these women. The most common interventions performed so far in this field have been advisory measures for short-term empowerment of these women including informing on the types and the cycle of violence and risk assessment as well as development of projects for the safety of these women. In several pre- and post-natal care clinics in the US and Hong Kong, the interventions reduced mental and physical violence and improved physical and mental health of women subjected to violence (34, 35). A recent study in UK National Screening Committee criteria showed the impact of supportive interventions and empowerment of women, as well as psychological interventions, although this requires further evaluation (36).

The reluctance of some women to participate in the study, arisen from fear of exposing secrets, was a limitation for this study.

5. Conclusion:

The results of this study showed that pregnant women exposed to domestic violence experience high levels of anxiety which can endanger both mother and fetus health and impose irreparable damages. Since the prevalence of domestic violence is higher than any pregnancy-related medical disorders, awareness of the importance of domestic violence and its complications is remarkable and revealing. Despite the adverse consequences of violence against women, this phenomenon is not recognized as a problem in some countries, including Iran, and has not been sufficiently addressed. So most health care providers are not aware of the prevalence of domestic violence and its consequences on population. It is obvious that without awareness of the signs and symptoms of domestic violence, its association with mothers' mental status and its impact on pregnancy outcomes, they cannot play an effective role. In order to reduce violence, it seems necessary to strengthen the supportive systems across the country, in particular for women in health centers. To reduce violence against women, education of life skills in extreme conditions may be useful for both women and men.

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7. Conflict of Interest:

The authors of the present work declare no conflict of interest.

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