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Domestic Violence and its Relationship with Quality of Life in Iranian Women of Reproductive Age

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Abstract Violence against women is a major concern for public health. This study was conducted in Tabriz (Iran) to investigate domestic violence and its relationship with quality of life in women of reproductive age. This cross-sectional study was conducted on 558 women selected through a two-stage cluster sampling method. Data were collected by Revised Conflict Tactics Scales (CTS2) and Short Form Health Survey (SF-36) questionnaires. Negotiation-emotional violence had the highest prevalence (93 %) and severe injury (12 %) had the lowest. There was a significant inverse correlation between chronicity of psychological, physical, sexual and injury domains of domestic violence and quality of life and a significant positive correlation between negotiation-emotional domain and quality of life. There is a significant relationship between domestic violence and quality of life. So, regarding the importance of empowering women and improving their quality of life, we must help eliminate violence against women.

Keywords Domestic violence · Quality of life · Women · Reproductive age · Iran

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Violence against women is a major concern for public health (WHO 2013) and as a social factor (Krantz et al., 2005), different attitudes and cultures affect its prevalence (WHO 2005b). As the most common form of violence against women, domestic violence (WHO 2005a, b) is defined as "any act of violence by a spouse leading to physical, sexual or psychological damage, or possibility of causing damages or even threatening women with such acts and restricting their freedom" (WHO 2010, p. 11). According to World Bank estimate, domestic violence leads to 5 % decrease in healthy life years in women of reproductive age (Heise 1993). World statistics show that 15–71 % of women report physical or sexual abuse or both by their husbands at least once in their lifetime (WHO 2005b; WHO 2013).

Based on Maslow's model, humans need to meet their physical and psychological needs to reach transcendence (Ventegodt et al. 2003), and violence is one of the factors threatening psychological and physical health (Devries et al. 2013). Studies show that violence against women is common in the world, and has adverse effects on physical and psychological health in the short- and long-term (WHO 2005b). Physical health and mental health are important aspects of quality of life (WHO 1997). According to definition of World Health Organization, "quality of life is individuals' perception of their status in life in terms of culture, value system in which they live, their goals, expectations, standards, and priorities" (WHO 1998, p. 3). Quality of life tools help specialists to assess health problems, in addition to detecting and treating emotional and psychological problems (Mitchell et al. 2005).

Some studies have examined the relationship between domestic violence and the status of psychological or physical health. In a systematic review, the relationship of depression symptoms and suicide attempt with spouse's violence was reported as significant (Devries et al. 2013). In another review study, physical damages, disability and chronic pains were

reported as complications of violence (Ayub et al. 2009). Further, intimate partner violence is a common cause of psychiatric disorders in women of reproductive age (Ehrensaft et al. 2006).

According to some studies, domestic violence is a common problem in Iran (Abbaszadeh et al. 2010; Dolatian et al. 2013; Khadivzadeh and Erfanian 2011). Women's health and empowerment are priorities of the World Health Organization (WHO 2001); these will help countries to achieve many of the Third Millennium Development Goals (WHO 2013). Based on literature review, despite the importance of the subject, no study has been conducted to examine the relationship between spouse's violence and quality of life in Iranian women of reproductive age. Given the large number (60 %) of women of reproductive age in Iran's age pyramid and the need to improve their health and quality of life (Mirghafourvand et al. 2015), this study aimed to investigate the relationship between quality of life and different types of domestic violence.

Methods

Study Design and Participants

This cross-sectional study was conducted on 558 married women of reproductive age (15–49) attending health centers/posts in Tabriz. Inclusion criteria included: having lived with spouse or sexual partner for at least one year at the time of study, and having secondary school level education or higher. Exclusion criteria included: any stressful event during the last year (ie. the death of immediate family members), pregnancy, postpartum period (from child birth up to one year after delivery), suffering from psychological disease (based on self-report), suffering from infertility and withdrawal from continuing cooperation while completing the questionnaire.

The sample size was determined according to variables of quality of life and all sub-scales of domestic violence. The basic information for sample size calculation was based on the prevalence of psychological subscale of domestic violence that have been 59 % in a study by Mohammadkhani et al. (2006). It was also based on the mean (standard deviation) of quality of life that have been 52.1 (26.9) in study by Mirghafourvand et al. (2015). The sample size was determined regarding $\alpha = 0.05$ and accuracy 0.05. Given that we used cluster sampling, the design effect was considered in the sample size; the minimum required sample size (558) was calculated by considering design effect value equal to 1.5.

Sampling and Data Collection

In Iran, all women of reproductive age have health records in public health center. A cluster random sampling method was conducted. 10 out of 39 active health centers and 11 out of 42 active health posts were randomly selected in Tabriz. Then, based on population data (the number of married women covered in each center/post) a proper sample size was proportionally calculated according to the study sample size. The list of women covered in each center was prepared and a number was assigned to each woman and participants were randomly selected according to the quota for each center. Then researcher contacted the selected women and invited them to the study after reviewing the inclusion and exclusion criteria and briefing them about the objectives, research methodology and confidentiality of data. Written informed consent was obtained from participants and data were collected through a self-administered questionnaire.

Data Collecting Instruments

Data were collected by a socio-demographic, Revised Conflict Tactics Scales (CTS 2) and Short Form Health Survey (SF-36) questionnaires.

Socio-Demographic Questionnaire The socio-demographic instrument included questions on age of the participants and their spouse, duration of marriage, the number of previous marriages of the participants and their husbands, the number of living children, children's gender, education level of the participants and their husbands, job of the participants and their husbands, job satisfaction of the participants and their husbands, the adequacy of monthly family income, spouse smoking, spouse drug use, spouse alcohol use, voluntary marriage (as the woman desired), and people who cohabited with participants and their husbands.

Revised Conflict Tactics Scales (CTS2) CTS2 was designed in 1995 (Straus et al. 1996). This instrument is completed as self-report or through an interview and measures the frequency and severity of violence in couples during the last year. It consists of 39 pairs of questions; odd questions measure women's violence against their husbands and even questions measure men's violence against their wives. Each part is separately scored and was designed in five scale including negotiation (emotional and cognitive subscales), psychological aggression, physical assault, sexual coercion and injury. To complete the CTS2, participants were asked to rate each statement of the included subscales by responding to the question: "How often did this happen in the past year?" Each statement could be answered by selecting a rating on an eight-point Likert scale as follows: "0 = Never," "1 = Once in the past year," "2 = Twice in the past year," "3 = 3-5 times in the past year," "4 = 6-10 times in the past year," "5 = 11-20 times in the past year," "6 = More than 20 times," and "7 = Not in the past year, but it has happened before" which assesses for lifetime occurrence.

Except for the negotiation scale, this questionnaire measures chronicity of violence at two levels, minor and severe, to indicate how often the set of acts measured by each scale occurred, among those who engaged in one or more instances of those acts. The items used to score severe chronicity are considered more severe in the sense that they pose a greater risk of injury than the items used to score minor. This chronicity is scored by adding the midpoints for the response categories chosen by the participants. For response categories 0, 1, and 2, the midpoint is the same as the response category. For response categories 3, 4, 5, and 6, the midpoints are 4, 8, 15, and 25, respectively. The validity of the instrument was confirmed by Behboodi et al. (2010) with Cronbach's alpha ≥ 90 %. In this study, the questionnaire was completed as self-report.

Short Form Health Survey (SF-36) SF-36 was designed in America (Aaronson et al. 1991) and its reliability and validity were assessed in Iran by Montazeri et al. (2005). This instrument measures eight health-related concepts (Ware and Gandek 1998): physical functioning (PF), role-physical (RP), body pain (BP), general health (GH), vitality (VT), social functioning (SF), role-emotional (RE), and mental health (MH). The first four make up the physical health-related quality of life component and the last four make up the mental health-related quality of life component. In addition, a single item that provides an indication of perceived change in general health status over a one-year period (health transition) is also included in the SF-36. In this instrument, the lowest score is 0 and the highest is 100.

The reliability of domestic violence and quality of life questionnaires was determined by Intra-class Correlation Coefficient (ICC) and internal consistency (Cronbach's alpha). α -Cronbach and ICC (Confidence Interval 95 %) were 0.89 and 0.90 (0.93–0.99) for the QOL (SF-36), 0.71 and 0.71 (0.47–0.85) for negotiation scale, 0.73 and 0.86 (0.74–0.93) for psychological aggression, 0.75 and 0.81 (0.63–0.91) for physical assault, 0.76 and 0.72 (0.49–0.86) for sexual coercion, 0.71 and 0.87 (0.75–0.94) for injury of domestic violence.

Data Analysis

Data analysis was performed by SPSS version 21. Two variables were created for the CTS-2 sub- scales: a prevalence variable and a chronicity variable. To describe the prevalence of men's violence against women, descriptive statistics, including the number and percentage, were used. In addition, in effort to determine chronicity of men's violence against women, mean (standard deviation, SD) and median (percentile 25-percentile 75) were used. Severity of violence was measured at two levels: minor and severe, except for the negotiation scale. For example, the physical assault subscale consists of 12 items divided into minor and severe subscales. The minor and severe subscales consist of five and seven items, respectively. CTS-2 subscale scores were created by summing the items on each scale.

Data normality was analyzed by Skewness and Kurtosis and only negotiation– emotional sub-scale had a normal distribution based on this test and the other subscales hadn't normal distribution. For non-normal data, first log 10 was used to convert the data, which were assessed for normality again. They had become normal. To evaluate the relationship between the chronicity of men's violence against women and physical and mental health related quality of life, Pearson's correlation test was used.

Any socio-demographic variable was included in the General Linear Model individually in an unadjusted form to determine the relationship between socio-demographic characteristics and the score of mental and physical components of quality of life. Then the all dimensions of men's violence against women, with socio-demographic variables with P score lower than 0.05 based on univariate tests, were entered into the adjusted General Linear Model.

Results

More than half of the women (59.7 %) were in the age group of 25 to 34 years (M = 35.2, SD = 6.5). Most participants (90 %) reported their marriage as their first. More than half of the participants (54.8 %) had diploma. More than three-quarters of women (80.3 %) were housewives. More than three-quarters of couples had one child (38.4 % son and 34.9 % daughter). More than half of the women (53.4 %) stated that their monthly income sufficed to some extent for living expenses and more than three-quarters (82.4 %) married willingly (see Table 1).

About one-third of their husbands (33 %) had diploma. More than a quarter of women's husbands (27.2 %) were workers. About two-thirds of women's husbands (66.3 %) were non-smokers and only 18 of them used drugs. About 15 % of women's husbands used alcohol. Most participants (90 %) reported their Spouse's marriage as their first. (see Table 2).

The highest percent of men's domestic violence against women was related to negotiation domain (emotional 93 % and cognitive 91.6 %) and the lowest percent was related to injury domain (minor 45.4 % and severe 12.2 %). Also, the highest median (percentile 25–75) chronicity score was related to negotiation (emotional 14.0 (6.0 to 30.0) and cognitive 8.0 (3.0 to 19.0)), and the lowest median (percentile 25–75) chronicity score was related to severe physical assault 0.4 (0.0 to 2.0). The mean physical and mental component score of QOL were found to be 65.0 ± 16.8 and 63.6 ± 16.9, respectively. The highest mean was related to physical function) 73.7 ± 21.9) and the lowest mean to role emotional

Table 1 Characteristics of women of reproductive age ($n = 558$)

Characteristics	N (%)[a]	Characteristics	N (%)[a]
Age (year)		Education	
15–24	94 (16.8)	Secondary school	46 (8.2)
25–34	333 (59.7)	High school	72 (12.9)
35 or higher	131 (23.5)	Diploma	306 (54.8)
Mean ± SD[b]	30.4 ± 5.8	College	134 (24.0)
First marriage	536 (96.1)	Number of children	
Occupation	0	27 (4.8)	
Employed	110 (19.7)	1	311 (55.7)
Housewife	448 (80.3)	2	188 (33.7)
Sufficiency of Income for expenses	3 or higher	32 (5.8)	
Completely	182 (32.6)	Husband's selection (Willingly marry)	460 (82.4)
To some extent	298 (53.4)		
Absolutely not	78 (14.0)		

[a] number (percent)

[b] Standard Deviation

(56.1 ± 36.8) (see Table 3). Of the total participants, 12 % evaluated their health status better than the previous year, 23.8 %: a little better, 39.9 %: about the same, 22.4 %: a little worse and 4.8 %: much worse than a year ago.

There was a weak significant correlation between negotiation–emotional sub-scale of domestic violence against women and physical ($r = .08$) and mental ($r = .11$) components of quality of life. No statistically significant relationship was observed between negotiation–cognitive sub-scale of domestic violence and physical and mental components of quality of life. There was a statistically inverse significant correlation between chronicity of psychological, physical, sexual and injury sub-scales of domestic violence against women and the physical component of quality of life ($r = -.09$ to $-.32$), where the correlation was moderate in minor psychological sub-scale and weak in other scales. There was an inverse significant correlation between chronicity of psychological, physical, sexual and injury sub-scales of domestic violence and the mental component of quality of life ($r = -.13$ to $-.82$), where the correlation was moderate in minor and severe psychological sub-scale, strong in severe injury and weak in other sub-scales (see Table 4).

Table 2 Characteristics of spouse of women of reproductive age ($n = 558$)

Characteristics	N (%)[a]	Characteristics	N (%)[a]
Age (year)		Education	
15–24	12 (2.2)	Illiterate	9 (1.6)
25–34	274 (49.1)	Elementary school	57 (10.2)
35 or higher	272 (48.7)	Secondary school	89 (15.9)
Mean ± SD[b]	35.2 ± 6.5	High school	83 (14.9)
First Marriage	521 (93.4)	Diploma	184 (33.0)
Occupation		College	136 (24.4)
Unemployed	10 (1.8)	Alcohol use	84 (15.1)
Worker	142 (25.4)	Substance abuse	18 (3.2)
Employee	140 (25.1)	Cigarette smoking	188 (33.7)
Private sector	116 (20.8)		
Other	150 (26.9)		

[a] number (percent)

[b] Standard Deviation

Unadjusted univariate analysis showed a significant relationship between the score of physical component of quality of life and woman's age, woman's job, education of women, spouse's education, sufficiency of income for expense, and spouse's substance abuse ($P < 0.05$). Also, there was a significant relationship between the score of mental component of quality of life and woman's age, woman's job, sufficiency of income for expense, and spouse's substance abuse according to unadjusted univariate analysis ($P < 0.05$).

Based on the adjusted General Linear Model, the emotional negotiation, cognitive negotiation, psychological aggression (minor& severe), sexual coercion (severe) and injury (minor) dimensions of domestic violence, woman's age, sufficiency of income for expense and spouse's substance abuse variables had significant relationship with physical component of quality of life. Also, the emotional negotiation, psychological aggression (minor & severe) and injury (severe) subscales of domestic violence, woman's age, sufficiency of income for expense and spouse's substance abuse variables had significant relationship with mental component of quality of life (see Table 5).

Discussion

Domestic violence is a common problem in Iran with a prevalence of 66.3 % (Ghazi Tabatabai et al. 2004), which directly

Table 3 Status of domestic violence and quality of life dimensions in women of reproductive age ($n = 558$)

Domestic violence dimensions	Prevalence N (%)[a]	Chronicity Median P (25 to 75)[c]
Negotiation (Emotional)	519 (93.0)	14.0 (6.0 to 30.0)
Negotiation (Cognitive)	511 (91.6)	8.0 (3.0 to 19.0)
Psych. Aggression (Minor)	449 (80.5)	6.0 (3.0 to 19.0)
Psych. Aggression Severe)	290 (52.0)	4.0 (2.0 to 9.0)
Physical assault (Minor)	216 (38.7)	3.0 (1.0 to 7.0)
Physical assault (Severe)	139 (24.9)	0.4 (0.0 to 2.0)
Sexual coercion (Minor)	261 (46.8)	4.0 (2.0 to 14.0)
Sexual coercion (Severe)	145 (26.0)	3.0 (1.0 to 5.0)
Injury (Minor)	86 (15.4)	2.0 (1.0 to 4.0)
Injury (Severe)	68 (12.2)	2.0 (1.0 to 4.0)
Quality of life dimensions	Mean ± SD[b]	
Physical health	65.0 ± 16.8	
General health	64.8 ± 19.4	
Physical function	73.7 ± 21.9	
Role physical	57.5 ± 34.6	
Bodily pain	71.7 ± 21.9	
Mental health	63.6 ± 16.9	
Social functioning	72.7 ± 18.9	
Vitality	59.8 ± 17.6	
Role emotional	56.1 ± 36.8	
Mental health	63.8 ± 17.4	

[a] Number (percent)

[b] Standard Deviation

[c] Percentile 25-Percentile 75

or indirectly affects all levels of society; however, its direct impact on physical and psychological health of victims and their families cannot be measured, and its complications may last a lifetime. This study examined the relationship of domestic violence with physical and mental components' of quality of life and its subscales in women of productive age. The research findings indicate an inverse correlation of psychological aggression, physical assault, sexual coercion and injury sub-scales of domestic violence with physical and mental components of quality of life, such that an increase in domestic violence decreases the quality of life.

Based on the results, negotiation sub-scale had the highest prevalence (93 %) in men's domestic violence against women and injury sub-scale had the lowest prevalence. In a study conducted in China, psychological violence had the highest and injury had the lowest prevalence (Gao and Jacka 2012). The same result was also found in another study in South Africa (Zacarias et al. 2012). Researchers reported the

Table 4 The relationship between domestic violence against women and physical and mental components of quality of life in women of reproductive age ($n = 558$)

Domestic violence dimensions	Physical component r (p)	Mental component r (p)
Negotiation Emotional	.11 (.010)	.08 (.048)
Negotiation Cognitive	−.04 (.336)	−.07 (.076)
Psych. Aggression (Minor)	−.38 (<.001)	−.32 (<.001)
Psych. Aggression (Severe)	−.35 (<.001)	−.29 (<.001)
Physical assault (Minor)	−.19 (<.001)	−.28 (<.001)
Physical assault (Severe)	−.13 (<.001)	−.17 (<.001)
Sexual coercion (Minor)	−.24 (.001)	−.09 (.001)
Sexual coercion (Severe)	−.15 (<.001)	−.24 (<.001)
Injury (Minor)	−.23 (<.001)	−.18 (<.001)
Injury (Severe)	−.82 (<.001)	−.19 (<.001)

Table 5 The relationship between domestic violence dimensions, socio-demographic characteristics and physical and mental components of quality of life in women of reproductive age according to General Linear Model (n = 558)

Physical component of quality of life	B (95 % CI)[a]	*p*-value
Women's age (year)		
35 or higher (Ref)		
15–24	8.5 (4.3 to 12.7)	< 0.001
25–34	0.4 (−2.8 to 3.5)	0.820
Sufficiency of income for expenses		
Absolutely not (Ref)		
Completely	7.4 (3.2 to 11.6)	0.001
To some extent	4.4 (0.5 to 8.3)	0.027
Spouse's substance abuse		
No (Ref)		
Yes	−8.2 (−15.5 to – 0.8)	0.029
Emotional Negotiation	0.1 (0.1 to 0.2)	0.006
Cognitive Negotiation	−0.1 (−0.2 to – 0.1)	0.046
Psych. Aggression (Minor)	−0.2 (−0.3 to – 0. 5)	0.004
Psych. Aggression (Severe)	−0.2 (−0.4 to 0.1)	0.044
Sexual coercion (Severe)	−0.3 (−0.5 to – 0.15)	0.033
Injury (Minor)	−0.6 (−1.2 to – 0.1)	0.033
Mental component of quality of life	B (95 % CI)[a]	*p*-value
Women's age (year)		
35 or higher (Ref)		
15–24	6.3 (2.3 to 10.4)	0.002
25–34	1.5 (−1.6 to 4.5)	0.350
Sufficiency of income for expenses		
Absolutely not (Ref)		
Completely	6.2 (2.1 to 10.3)	0.004
To some extent	3.8 (0.9 to 7.6)	0.045
Spouse's substance abuse		
Absolutely not (Ref)		
Yes	−7.8 (−15.1 to – 0.6)	0.032
Emotional Negotiation	0.2 (0.1 to 0.2)	0.001
Psych. Aggression (Minor)	−0.3 (−0.4 to – 0.2)	< 0.001
Psych. Aggression (Severe)	−0.3 (−0.4 to – 0.1)	0.016
Injury (Severe)	−0.7 (−1.3 to – 0.2)	0.008

[a] 95 % Confidence Interval

prevalence of verbal, psychological, physical and sexual violence in Yasouj, Iran as 69.5 %, 52.2 %, 36.4 % and 22.2 %, respectively (Jokar et al. 2005). In the study in Semnan-Iran, the prevalence of psychological, verbal and physical violence was reported as 63.7 %, 43.3 % and 18.6 %, respectively (Saberian et al. 2005). In another study, the prevalence of domestic violence was reported: psychological 92.2 %, physical 73.5 % and sexual 49.6 % (Ghahhari et al. 2008). The results of other studies are consistent with the present study, showing that verbal and psychological violence are more prevalent forms of domestic violence. In this study, in contrast to the results of other studies reviewed, sexual violence was more common than physical violence, which can be attributed to a lack of satisfaction with sexual relationship, ignoring women's sexual desires or unusual sexual desires. Also, social and cultural differences, data collection tools, ethnicities, women's beliefs and awareness of their rights can cause differences in the prevalence of violence in different societies.

Quality of life in the women in the study was found to be moderate. Among eight domains of quality of life, physical function had the highest mean score and role limitations, due to emotional reasons (psychological problems), had the lowest mean score. Other studies also found similar results (Mirghafourvand et al. 2015; Montazeri et al. 2005).

The results of study showed that people experiencing domestic violence have lower quality of life (physical and mental). Several other studies have also revealed the relationship of physical and mental health problems with domestic violence (Kelly 2010; Lown and Vega 2001; Wuest et al. 2008). In a study on all married women in Tabriz, the impact of domestic violence was reported 37 % on mental health (Abbaszadeh et al. 2010), which is consistent with the results of this study (Taherkhani et al. 2010). The results of a study in Mashhad, Iran also indicated the relationship of domestic violence with physical and mental diseases (Khadivzadeh and Erfanian 2011). Hosseinzadeh and Fathi (2007) in a study in Tehran (capital of Iran) have reported that women with domestic violence experience had physical and psychological problems (Hosseinzadeh and Fathi 2007). A relationship was reported between increased relative risk of physical and psychological problems and domestic violence in clinical settings at United State (Bonomi et al. 2009). In their review, Heise et al. (2002) reported a higher relative risk of health problems, such as chronic pain, sexual dysfunction and sexually transmitted infections (STIs), due to domestic violence. A study in Brazil reported that women's psychological health problems are particularly related to the experience of intimate partner violence (Avanci et al. 2013).

Health sector is one of the key players in prevention and care of domestic violence. Therefore, an appropriate response from the health sector can play an important role in the prevention of violence. Health care providers can educate couples who come for marriage counseling to avoid any violence, as well as observe and take history of the injured women to provide support and physical and mental care to meet the needs of them (WHO 2014).

The cross-sectional nature of this study was one of the limitations of this research. Subsequent to this, the relationships do not necessarily indicate causality. Due to different ethnicities and religions in Iran, participants may not be representative of the general female population. Also, we get participants from health centers, so they may not be representative of the general female population. Finally, because of

certain prejudices and the desire to preserve the privacy of the family, the selected participants may not tell all truth about the violence they have experienced.

It is suggested that similar population-based studies be conducted in other Iranian ethnicities and this phenomenon be compared among them. Although violence cannot be accurately predicted, some steps can be taken to increase women's empowerment and improve their quality of life by identifying family, social, cultural and economic factors. As the results of this study also showed, violence is a threat to physical and mental health. Thus, future studies should be conducted regarding the effect of education to health personnel about women's empowerment on women's mental and physical health improvement and finally women's quality of life improvement. Also, screening practices should be designed and implemented in order to identify women who are affected by domestic violence early and provide appropriate support to victims.

Conclusion

According to the results of this study, violence has a high prevalence and physical and mental health components of quality of life are moderate. Also there is a significant inverse correlation between domestic violence aspects and women's quality of life. Given the role of women in family and society, it seems that eliminating violence against women will lead to their quality of life improvement and can help to have healthy families and community.

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