Infertility Stigma and Domestic Violence: A Cross-Sectional Study

Abstract

Background: Infertility stigma is one of the well-known psychosocial problems and can disrupt the mental health of infertile women and their family relationships. This study evaluated the relation between infertility stigma and domestic violence in infertile women. Material and Methods: This was a cross-sectional study that was conducted on 300 women who referred to the Fertility and Infertility Center of Isfahan, IRAN (2022-2023) using a convenient sampling method. Data gathering tools were WHO Standard Domestic Violence questionnaire and Female Infertility Stigma Instrument (ISI-F).Data were analyzed using SPSS software version 16 (Pearson correlation, Mann-Whitney, Kruskal-Wallis, and multivariate linear regression analysis). This article has been edited based on the STROBE checklist. Results: The mean (SD) score of infertility stigma was 64.79 (14.70) (out of 100). The mean (SD) score of domestic violence was 10.94 (16.61) (out of 100). There was a significant positive relation between the score of infertility stigma and the total score of domestic violence, physical violence, mental violence, and sexual violence p<0.001. The highest correlation was found between mental violence and infertility stigma (r = 0.359). Economic status (p = 0.001), infertility factor (p = 0.007), and infertility stigma p<0.001 were predictors of domestic violence. Conclusions: Infertility stigma was related with all the aspects of domestic violence. Infertility stigma was a predictor of domestic violence. It is necessary to plan interventions to deal with infertility stigma and domestic violence in infertile women. Psychological counseling should be considered along with infertility treatment.

Keywords: Domestic violence, female infertility, infertility, stigma

Introduction

Infertility, which is defined as inability to get pregnant after 1 year of regular sexual intercourse without contraceptives, is one of the most common global problems and one of the greatest challenges during fertility age.[1] The prevalence of infertility is 8 to 10 percent in developed countries and 15 to 20 percent in developing countries.^[2] In Iran, the mean rate of infertility has been reported as 13.2 percent.[3] Infertility would lead to various outcomes including perception of social stigma,[4] depression, anxiety, and mental health disorders and, by affecting the physiology of the body, would make undesirable outcomes on fertility too.^[5] Infertility is a social stigma that would cause women to be considered as useless and fruitless.^[6] Stigma has a strong negative load that would cause the individual to be isolated in the society^[7] and see themselves as labeled and different. Women would bear the stigma of infertility more than men.[8] Infertility stigma, which is a common

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phenomenon, would increase the level of depression and disappointment, decrease self-esteem and self-efficacy, and make the stigmatized person more susceptible to physical and verbal violence, that could harm their mental and social health. [6]

Domestic violence is defined as the violent and domineering behaviors of one of the family members against other members. Women would experience domestic violence in various forms and including physical, mental, and sexual violence.[9] According to international reports, about 30 percent of women would experience a type of domestic violence.[10] However, the probability of experiencing domestic violence is higher in infertile women than fertile women.^[9] The prevalence of domestic violence in infertile women has been reported as 33 percent in Turkish[11] and about 55 percent in Nepalese women.[12] Violence would cause depression, anxiety, decreased self-esteem, increased tendency toward suicide,[13] fertility health disorder, and having less medical care benefits.^[10]

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Maryam Soruri Zad, Mahboube Taebi

Reproductive Sciences and Sexual Health Research Center, Department of Midwifery and Reproductive Health, Isfahan University of Medical Sciences, Isfahan, Iran

Address for correspondence:

Dr. Mahboube Taebi, Department of Midwifery and Reproductive Health, Isfahan University of Medical Sciences, Isfahan, Iran.

E-mail: m_taebi@nm.mui.ac.ir

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Perception of stigma would harm the general health and well-being of the individuals, [6] and the first step to confront it is attracting the attention of the healthcare personnel and society toward it.[14] Since being labeled would decrease self-esteem, self-confidence, and self-efficacy and would lower the individual's resistance against mental pressure, these women would choose incompatible solutions for their interpersonal problems and would become more prone to violence.[9] In addition, since lower self-esteem is associated with experiencing more psychological disorders, less flexibility, and more acceptance of failure in life, under stigma, women would probably tolerate the violence of their husbands more than others.^[15] Violence would impose a wide range of economic, social, and health costs on the individual and the society; therefore, it is necessary to determine its related factors to have better plans for its prevention and confrontation. Therefore, the present study was conducted to determine the relation between infertility stigma and domestic violence among women who has referred for infertility treatment.

Materials and Methods

This was a cross-sectional study that was conducted on 300 women who referred to the Fertility and Infertility Center of Isfahan, IRAN, from April 2022 until January 2023. The present study followed the guidelines of EQUATOR and STROBE checklist. [16] Sampling was conducted using a convenient method from women who had the inclusion criteria. The inclusion criteria were having primary infertility, absence of any psychological disorders according to medical records, not having any chronic diseases, and having at least elementary school degree. The researcher explained the objectives of the study to the participants. After obtaining informed consent, a private and comfortable room at the center was provided where participants completed self-report questionnaires.

Sample size was calculated as 300 using the following numbers and formula and considering the loss of participants. N = $[(Z\alpha+Z\beta)/C]2 + 3$ ($Z\alpha = 1.9600$, $Z\beta = 1.2816$, C = 0.2)

This tool contained 20 items and 3 dimensions of "stigma profile" with 7 items, "self-stigma" with 6 items, and "escaping from stigma" with 7 items. Scoring was done based on the 5-point Likert scale from totally agreed with a score of 5 to totally disagreed with a score of 1. All the items except for item 17 were scored as 1 for totally disagreed, 2 for disagreed, 3 for neutral, 4 for agreed, and 5 for totally agreed. Only item 17 was scored in reverse order. Scores were reported from 20 to 100, and higher scores indicated higher perception of infertility stigma. Validity (CVI = 0.94), (CVR = 0.87) and reliability (Cronbach's $\alpha = 0.909$) of this questionnaire were approved. [4]

This questionnaire contained 25 items and 3 parts of "physical" with 9 items, "sexual" with 5 items, and "mental" with 11 items. Scoring was conducted using a 5-point Likert scale including never, once, twice, 3 to 5 times, and

more than 5 times. The assigned score for "never" was "0," for "once" was "1," for twice was "2," for 3 to 5 times was "3," and for "more than 5 times" was "4"; the total score was reported between 0 and 100. Validity (CVI = 0.74) and reliability for physical (Cronbach's $\alpha = 0.92$), mental (Cronbach's $\alpha = 0.89$), and sexual (Cronbach's $\alpha = 0.81$) aspects were approved. [17,18]

Data were analyzed using SPSS (version 16, SPSS Inc, Chicago, USA), and the level of significance for all tests was set at p < 0.05. The Kolmogorov–Smirnov normality test shows that the data not normal so nonparametric tests were used to analyze. The descriptive statistics (frequency, percentage, mean, and standard deviation) were used for data presentation. The Pearson correlation test was used to show the relation between the infertility stigma score and the domestic violence score and its all dimension. The relationship of the domestic violence score and its dimensions (physical, mental and sexual violence) with participants' characteristics were analyzed with Mann–Whitney and Kruskal–Wallis statistical tests. Finally, multivariate linear regression analysis with the Enter method was performed to predict the factors related to the domestic violence score.

Ethical considerations

This study was done according to guidelines published in the Declaration of Helsinki. The present study was approved by the ethics committee of the Isfahan University of Medical Sciences (Ethical code: IR.MUI.NUREMA. REC.1400.221). After explaining the goals of the study, written informed consent was completed by all the participants. Participants were free to enter and withdraw from the study at any desired time.

Results

In the present study, 300 women who referred to the Fertility and Infertility Center were enrolled. The mean age of women and their husbands was 29.22 (6.13) and 34.16 (5.77) years, respectively, and the mean duration of infertility was 50.96 (40.92) months. Most of the participants had a diploma and were unemployed. In addition, the infertility factor of the participants was female factor (30.30%), male factor (23.70%), both male and female (28.70%), and unexplained factor (17.30%) [Table 1].

The mean score of infertility stigma in infertile women was 64.72 (14.70) out of 100 (with a minimum of 20 and maximum of 96), and also, the mean score of domestic violence was 10.94 (16.61) out of 100 (with a minimum of 0 and maximum of 88). The Pearson correlation test showed a significant relation between the score of infertility stigma and the total score of domestic violence p<0.001, physical violence p<0.001, mental violence p<0.001, and sexual violence p<0.001. Among the dimensions of violence, highest correlation with infertility stigma belonged to mental violence (r = 0.359) [Table 2].

Table 1: Characteristics of the participants (n=300)			
Characteristics	Mean (SD*)or n (%)		
Age (Y)	29.22(6.13)*		
Husband's age (Y)	34.16(5.77)*		
Occupation			
Employed	83 (27.70)		
Housewife	217 (72.30)		
Educational level			
Elementary	11 (3.70)		
High school	25 (8.30)		
Diploma	122 (40.70)		
Academic degree	142 (47.40)		
Economic satisfaction			
Very satisfied	53 (17.70)		
Partly satisfied	126 (42)		
Partly dissatisfied	68 (22.70)		
Very dissatisfied	53 (17.70)		
Infertility factor			
Female	91 (30.30)		
Male	71 (23.70)		
Both male & female	86 (28.70)		
Unexplained	52 (17.3)		
Previous Treatment			
IUI**	104 (34.7)		
ICSI***	41 (13.7)		
IVF***	129 (43)		
Ovulation stimulation	252 (84)		
Other	130 (43.40)		
Duration of marriage (Y)	5.80(3.69)*		
Duration of infertility (M)	50.96(40.92)*		
Duration of treatment (M)	33.78(36.37)*		

^{*}SD=Standard Deviation; **IUI=Intrauterine Insemination. ***ICSI=Intracytoplasmic Sperm Injection; ****IVF=In Vitro Fertilization

The results showed a significant relation between the total score of domestic violence and age (p=0.001), occupational status (p=0.003), educational level (p=0.009), and economic status (p=0.001) of the participated women. In addition, infertility factor had a significant relation with the total score of domestic violence (p=0.014) and mental violence (p=0.001). No significant relation was observed between the total score of domestic violence and its dimensions with treatment, duration of marriage, duration of infertility, and duration of treatment (p>0.05). Multivariable regression analysis showed that economic status (p=0.001), infertility factor (p=0.007), and infertility stigma p<0.001 could predict 17% of domestic violence (R2 adj = 0.177) [Table 3].

Discussion

The present study investigated the relation between infertility stigma and domestic violence, and the results

showed a significant direct relation between the mean score of infertility stigma and domestic violence and all its dimensions. The mean score of infertility stigma in the studied women was reported as 64.72 (14.70), which indicated high perceived infertility stigma. In addition, the mean score of domestic violence was reported as 10.94 (16.61), and the highest level of violence belonged to the mental, physical, and sexual dimensions, respectively.

The results of the study in Iran (2020) reported the mean score of infertility stigma as 73.33 (17.87) out of 135.^[19] In addition, another study showed that the mean score of infertility stigma among Japanese women was 73.6 (20.90).^[20] The results indicated the high pressure of infertility stigma on infertile women which would lead to feeling of worthlessness, isolation, and feeling wasted in these individuals^[6]; in a way that these women believed that being labeled is more harmful to them than infertility itself.^[8]

In the present study, the total score of domestic violence was 10.94 (16.61); in comparison to other studies, this score was lower, but similar to other studies, the highest level of perceived violence belonged to mental violence. Considering the psychological outcomes of infertility for women and also the mental pressure caused by the disappointment periods following unsuccessful treatment and occurrence of marital conflicts, high levels of mental violence in infertile women could be explained. Conducted studies in Iran have reported the prevalence of domestic violence among infertile women as 87.47 (41.88)[21] and 50.93 ± 18.76 . [22] Silwal et al. [12] revealed that the highest level of domestic violence belonged to its mental aspect. Celik et al. (2018)[2] reported that the highest level of domestic violence among infertile women belonged to its mental aspect followed by physical and sexual violence. The mean score of violence varies in different studies, which could be due to the different range of violence in different cultural-social structures and also using various sampling tools and sampling from women with both primary and secondary infertility. In addition, considering the mean score of domestic violence and the highest score of violence in the present study, it could be concluded that levels of domestic violence among infertile women is of significant importance. Most women would experience violence for the first time after diagnosis of infertility,[11] which indicates the effectiveness of infertility on occurrence of domestic violence. This could have undesirable effects on the outcomes of infertility treatments because, other than less access of victims of violence to healthcare services,[10] paying overall attention to the physical, psychological, and social aspects of the diseases is one of the main principles for successful treatment.[23]

The results showed a positive significant relation between the mean score of infertility stigma and the total mean score of domestic violence and its aspects (physical

Table 2: Means, Standard deviation and Pearson correlations between study variables (n=300) Variables Mean±SD Infertility stigma Physical violence Mental violence Sexual violence Total domestic violence Infertility stigma 64.72(14.70) Physical violence 3.48(6.55) r=0.2771 p < 0.001Mental violence 5.54(8.35) r=0.359r=0.7031 p < 0.001p < 0.001Sexual violence 1.96(4.07) r=0.241r=0.5171 r=0.616p < 0.001p < 0.001p < 0.001

r=0.843

p < 0.001

r=0.914

p < 0.001

r=0.693

p < 0.001

1

p<0.05 was considered significant; SD=Standard Deviation

10.94(16.61)

r=0.342

p < 0.001

Total domestic

violence

Table 3: Correlation between participants' characteristics and domestic violence (physical, mental and sexual violence) (n=300)

Variables	Physical violence	Mental violence	Sexual violence	Total domestic violence
Age (Y)	p=0.013	p=0.000	p=0.078	p=0.001
	r=-0.143	r=-0.241	r=-0.102	r=-0.198
Occupation	p=0.003	p=0.006	p=0.236	p=0.003
	Z=-2.958	Z=-2.751	Z=-1.186	Z=-3.023
Educational level	p=0.026	p=0.002	p=0.324	p=0.009
	Z=13.590	Z=16.642	Z=4.662	Z=13.590
Economic satisfaction	p=0.003	p=0.005	p=0.039	p=0.001
	Z=13.903	Z=12.838	Z=8.366	Z=17.210
Infertility factor	p=0.115	p=0.001	p=0.137	p=0.014
	Z=5.929	Z=15.726	Z=5.530	Z=10.673
Treatment	p=0.505	p=0.554	p=0.517	p=0.391
	Z=3.322	Z=3.021	Z=3.247	Z=4.113
Duration of marriage (Y)	p=0.559	p=0.099	p=0.774	p=0.316
	r=-0.034	r=-0.095	r=0.017	r=-0.058
Duration of infertility (M)	p=0.240	p=0.841	p=0.157	p=0.542
	r=0.068	r=-0.012	r=0.082	r=0.035
Duration of treatment (M)	p=0.231	p=0.912	p=0.214	p=0.318
	r=0.069	r=0.006	r=0.072	r=0.058

p<0.05 was considered significant.

violence, mental violence, and sexual violence); in a way that the highest correlation was between infertility stigma and mental violence. Based on the conducted researches, no studies were found regarding the relation between domestic violence and infertility stigma in infertile men and women. However, on other groups, some studies were conducted about the relation between social stigma and domestic violence. A study in Canada showed that HIV (human immunodeficiency virus)-related perceived stigma would increase their experience of violence due to increased depression and decrease in energy, motivation, and self-efficacy.^[24] In addition, Wang et al. (2020)^[25] in China reported that experiencing homosexuality stigma and HIV-related stigma in men would increase the risk of domestic violence by their partners, by increasing social isolation, frustration, and depression. Since stigmatized women have lower resilience, self-esteem, self-confidence, and self-efficacy and could not make appropriate decisions at critical times in their interpersonal relationship, their marital conflicts might increase and the risk of domestic violence could increase; that is how higher rate of domestic violence could be explained among infertile women. [26] On the other hand, by creating a sense of guilt, shame, and frustration, infertility stigma would make these women consider themselves as the cause of infertility and accept the violence applied on them by their husbands. [27]

According to the results of the present study, women's age had a significant correlation with the total mean score of domestic violence and its physical and mental aspects meaning that, by aging, the experience of violence was decreased. Similar to the present study, other studies also showed that the experience of domestic violence was decreased in older infertile women.^[13,28] It seems

that getting older would lead to more self-control and realism and enable women to become better wives and by improving their marital relationship, they might decrease the chance of domestic violence. There was a significant relation between occupation, educational, and economic status of infertile women and the mean score of domestic violence; in the present study, this relation was more significant in physical and mental aspects. Other studies have also mentioned this issue. Financial independence and having an appropriate social position are some of the indicators of women's empowerment that would provide more supportive sources for them which could protect them against domestic violence.

In the present study, infertility factor had a significant relation with the mean score of domestic violence and mental violence. The highest level of violence was observed among the group with male infertility factor. Other studies have also mentioned infertility as a reason for physical^[2] and nonphysical^[30] domestic violence; in a way that the risk of domestic violence is 87% higher among infertile women compared to fertile women.[31] Çalışkan et al. (2021)[32] reported that male infertility is an effective factor in applying violence by men. Becoming a father is associated with a sense of power and success and inability in having a child could be a motivator for men for becoming violent. In this study, three factors of economic status, infertility factor, and infertility stigma were determined as predictors of domestic violence. Domestic violence is a significant and common issue during infertility; in-time intervention could somehow prevent the occurrence of domestic violence. Therefore, determining effective factors on occurrence of domestic violence could lead to prevention and better confrontation with this problem and eventually improve the quality of life of the couples and improve the results of their infertility treatment.

Conclusion

The perceived stigma of infertility and the experience of domestic violence are harmful factors for women's psychosocial health. In this study, infertile women had high levels of infertility stigma associated with domestic violence. Infertility stigma was a predictor of domestic violence. Health personnel who provide services to infertile women should be aware of the stigma that experienced by these women and its influences on their well-being. Education based on coping strategies could be helpful against stigma. In addition to medical treatment of infertility, psychosocial health of infertile women should be evaluated. Since infertility stigma and domestic violence are some of the most harmful factors for women's mental health which have a direct relation with each other, it is necessary to plan interventions for managing and decreasing confrontation with infertility stigma and domestic violence in women. Training and informing girls and women in this field is recommended. The prevention and detection and dealing with domestic violence should be given more attention by policy makers and health service providers.

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Conflicts of interest

Nothing to declare.

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