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Violence against infertile women in an Iranian setting

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Abstract

Background Infertility as a distressing condition, is associated with numerous psychological and social consequences for couples. In addition, there is evidence to suggest that infertility may contribute to the occurrence of violence against women. The aim of the study is to determine the prevalence and factors associated with violence against Iranian women with infertility.

Methods A cross-sectional study was carried out in 2020, involving 310 infertile women who sought treatment at an infertility clinic in a referral women's hospital in Tehran. The eligible participants were selected using the consecutive sampling method. The Infertile Women's Exposure to Violence Determination Scale (IWEVDS) was used to collect data on violence. Data were analyzed using descriptive (Mean, frequency) and inferential statistics (Independent sample t-test, Chi-square, regression logistic) through the SPSS version 25.

Results The average score on the IWEVDS was found to be 43.89 ± 18.23, indicating a moderate level of violence. Out of the 310 participating infertile women, 84.2% reported experiencing violence. Among abused women, 67% experienced domestic violence, 76.2% encountered social pressure, 85.4% faced punishment, 88.9% were exposed to traditional practice, and 57.5% experienced exclusion. The main risk factors associated with violence were a low number of children, low economic status, and an increased duration of infertility.

Conclusions This study's findings underline a high rate of violence experienced by infertile women. Therefore, it is crucial to screen women with infertility for violence and provide them with adequate support.

Keywords Infertility, Women, Domestic violence, Abuse

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Introduction

Violence against women particularly intimate partner violence, is a major public health problem, affecting one in three women worldwide [1]. Women facing infertility are at a higher risk of experiencing violence [2]. In many cultures, the ability to bear children is a crucial objective for couples [3]. Consequently, inability to fulfil this responsibility has adverse effects on the social and marital aspects of the couple's life [4]. Fertility problems affect men and women nearly equally in terms of prevalence. However, women tend to face disproportionate blame for a couple`s childlessness, resulting in serious physical, emotional, and social consequences. Therefore, in societies that place great importance on childbearing, childless women often endure considerable social stigma, including violence [5, 6]. Feelings of disappointment, loss, and betrayal commonly arise among women experiencing infertility [7]. Furthermore, not only does infertility itself have an impact, but the methods used for infertility treatment can also lead a couple to lose control over their reproductive functions, placing great strain on their coping abilities and social support sources. This, in turn, depletes their emotional energy, and often leads to depression, anxiety, sexual dysfunctions, and deterioration in marital relations [8]. Compared to fertile women, rates of divorce, homelessness, physical, economic, and sexual violence tend to be higher among infertile women [9]. Additionally, factors such as autonomy, employment status, educational level, and socio-economic status contribute to the risk of violence among women facing infertility [4].

The life time prevalence of violence against infertile women varies widely across the world [8]. Existing literature has shown that in the context of infertility, the prevalence of violence against women ranges from 1.8 to 77.8% worldwide [10]. A study conducted in Nigeria reported a prevalence of domestic violence associated with infertility at 31.2% [11]. In Turkey, one in five infertile women experience emotional or physical violence [3]. A recent study from Iran reported that 68% of infertile women had experienced physical violence, 60% had experienced sexual violence and 70% had experienced psychological violence [12].

Infertility itself poses a threat to women's psychological health, and violence further exacerbates stress and complicates the treatment process [13]. The consequences of violent relationships can be serious, with violence compromising women's physical health, reducing their quality of life, restricting personal freedom, and potentially leading to mental health disorders, disability, or even death [5, 14]. Women who experience violence are 4.5 times more likely to commit suicide [15].

In Iran, infertility and violence remain major reproductive health problems with a high prevalence [16]. To deal with the consequences of violence against women facing infertility, it is crucial to provide experts with the necessary data to develop appropriate programs aimed at minimizing potential harm among women who have been diagnosed with infertility and exposed to violence. Given that violence is a phenomenon influenced by culture [17], understanding the extent and risk factors of violence against Iranian women facing infertility, using precise and specific tools, can play a central role in implementing preventive interventions. Considering the limited research on violence and its associated risk factors among infertile Iranian women, we aimed to determine the prevalence and factors associated with violence against infertile women in Iran, using a specific tool.

Methods

We conducted a cross-sectional study in 2020 to investigate the prevalence and factors associated with violence among infertile women seeking treatment at an infertility clinic in Tehran. The study adopted a positivism paradigm, which aligns with quantitative methodology and emphasizes measuring variables and testing hypotheses for general causal explanations [18, 19].

The target population for this study comprised 310 Iranian married women aged 18–49, living with their husband, and diagnosed with infertility. Eligible participants were selected using consecutive sampling until a minimum sample size of 280 was achieved. A minimum sample size was determined considering a 95% confidence interval, a margin of error of 1.5 and a standard deviation of 12.75 [6]. Women with mental illnesses such as depression and anxiety disorders were excluded from the study. Out of the 320 eligible women invited to participate, 310 agreed and provided informed consent. They were interviewed by a trained female healthcare professional in a private room within the infertility clinic.

Data collection involved the use of a socio-demographic and fertility-related characteristics form, as well as the Infertile Women's Exposure to Violence Determination Scale (IWEVDS). The IWEVDS, developed by Onat [20] consists of31 items divided into five sub-scales: domestic violence, social pressure, punishment, exposure to traditional practices, and exclusion. Response options ranged from 1 (never), to 5 (all the time), with a total score range of 31 to 155, obtained by summing the points from each item. Higher scores indicated greater frequency of exposure to violence. For this study, the Persian version of the IWEVDS, comprising 28-items scale and a total score range of28 to 140, was used. The minimum and maximum scores for each domain of the IWEVDS were as follows: 9–45 for domestic violence, 6–30 for social pressure, 6–30 for punishment, 4–20 for exposure to traditional practices, and 3–15 for exclusion. The content validity of the scale was determined

Table 1 The domains of violence against infertile women

Violence domains	Mean ± Standard deviation	Frequency	Percent
Domestic violence (9–45)	12.69 ± 5.62	175	67
Social pressure (6–30)	8.73 ± 3.67	199	76.2
Punishment (6–30)	10.01 ± 4.89	223	85.4
Exposure to traditional practice (4–20)	7.73 ± 3.43	232	88.9
Exclusion (3–15)	4.70 ± 2.38	150	57.5
Total violence (28–140)	43.89 ± 18.23	261	84.2

Table 2 Demographic characteristics of women

Variable		Non-abused women *N* = 49	Abused women *N* = 261	*p*-value
Woman's age (year)		32.37 ± 6.14	32.96 ± 6.20	$p = 0.537$
Man's age (year)		35.47 ± 5.60	36.85 ± 7.66	$p = 0.142$
Marital duration (year)		6.68 ± 4.76	7.73 ± 5.00	$p = 0.165$
Woman's education	Illiterate	2 (4.1%)	8 (3.1%)	$p = 0.597$
	Secondary school	8 (16.3%)	63 (24.1%)	
	Diploma	23 (46.9%)	121 (46.4%)	
	Academic	16 (32.7%)	69 (26.4%)	
Man's education	Illiterate	2 (4.1%)	6 (2.3%)	$p = 0.664$
	Secondary school	9 (18.4%)	67 (25.7%)	
	Diploma	21 (42.9%)	104 (39.8%)	
	Academic	17 (34.7%)	84 (32.2%)	
Women's occupation	Housekeeping	41 (83.7%)	219 (83.9%)	$p = 0.967$
	Job outside home	8 (16.3%)	42 (16.1%)	
Man's occupation	Unemployed	0 (0.0%)	49 (100.0%)	$p = 0.296$
	Employed	7 (2.7%)	254 (97.3%)	
Economic status	Low	18 (36.7%)	135 (51.7%)	$p = 0.016$
	middle	21 (42.9%)	105 (40.2%)	
	High	10 (20.4%)	21 (8.0%)	

following backward and forward translation. Confirmatory factor analysis (CFA) was conducted to assess construct validity, which demonstrated a good fit for the scale. acceptable values of Cronbach's alpha (0.70–0.90) The reliability of the scale was confirmed by acceptable values of Cronbach's alpha (0.70–0.90) [21].

Data analysis was performed using SPSS version 25 (IBM Inc., Armonk, NY, USA). The IWEVDS scores were categorized into mild, moderate, and severe violence based on a percentage-based approach. Categorical variables (such as education and economic status) were reported as frequency (percentage), while quantitative variables (such as age) were presented as means (standard deviation). The chi-square test was used to compare categorical variables, and an independent sample t-test was utilized to compare mean differences between two groups for normally distributed quantitative variables. Multiple logistic regression models were also employed to identify the factors related to violence. A 95% confidence interval (CI) was computed for all analyzes.

It is important to note that a portion of this study focused on the psychometric assessment of Persian version of the IWEVDS, has been previously presented in another paper [21].

Results

The average score of IWEVDS was 43.89±18.23 (min-max: 21–126). Out of t the 310 infertile women participated in the study, 84.2% (n=261) reported experiencing violence. Among the women surveyed, 218 (70.3%) encountered incidents classified as mild violence, while 85 (27.4%) experienced moderate violence, and 7 (2.3%) reported incidents of severe violence. Within the subgroup of abused women, 67% experienced domestic violence (mean score: 12.69±5.62), 76.2% faced social pressure (mean score: 8.73±3.67), 85.4% received punishment (mean score: 10.01±4.89), 88.9% were exposed to traditional practice (mean score: 7.73±3.43), and 57.5% faced exclusion (mean score: 4.70±2.38) (Table 1).

In terms of infertility status, the frequency of primary infertility was 258 (85.5%), while secondary infertility accounted for 45 (14.5%) cases. Except for economic status (p=0.016), there were no statistically significant differences observed in socio-demographic characteristics between the non-abused and abused infertile women (Table 2). The fertility-related characteristics of the participants are shown in Table 3. There were no significant differences found in the number of pregnancy, abortion, and stillbirth between the non-abused and abused

Table 3 Fertility-related characteristics of women

Variable	Non-abused women *N*=49	Abused women *N*=261	*p*-value
Gravidity	0.96±1.45	0.65±1.297	*p*=0.173
Abortion	0.55±1.10	0.46±0. 97	*p*=0.574
Living child	0.41±0.78	0.16±0.49	*p*=0.036
Stillbirth	0.08±0.34	0.06±0.38	*p*=0.711
Infertility duration	3.34±2.17	5.77±4.19	*p*=0.001
Treatment failure	1.16±0.60	1.49±1.0	*p*=0.040

women ($p \geq 0.05$). However, the number of living children was significantly lower among the abused women compared to the non-abused women ($p=0.036$).

The rate of violence was significantly higher among the women who underwent IVF/ICSI compared to those who did not (91.3% vs. 80.6%; $p=0.014$). Furthermore, treatment failure was significantly higher in the abused women compared to the non-abused ones ($p=0.04$). Additionally, the duration of infertility was significantly longer in the abused women, and those who had a longer infertility duration were four times more likely to be exposed to violence compared to women with a shorter duration of infertility (Table 4). The infertility causes among abused women included combined male and female factors (36.4%), female factor alone (30.3%), unknown causes (16.9%), and male factor alone (16.0%)). In contrast, the most prevalent cause of infertility among the non-abused women was unknown (32.7%), and this difference was found to be statistically significant ($p=0.007$).

Discussion

This study presents data on the prevalence and factors related to violence against Iranian infertile women. Our findings indicate a high rate of violence among women facing infertility. Existing evidence suggests that the inability to conceive increases the risk of experiencing violence [11, 15]. Living with infertility is a stressful experience for couples, and they often face fear and anxiety concerning their childlessness, the infertility diagnosis, the treatment process, and the potential outcomes of treatment. Each partner may blame themselves and project their anger onto the other, leading to conflict, decreased self-esteem, reduced sexual activity, and feelings of inadequacy. Thus, marital relationships come under psychological strain, which can manifest as marital violence [22].

In our study, the average score of the IWEVDS was found to be 43±18, indicating a moderate level of violence. This is relatively similar to the mean score reported in an Iranian study of infertile women (mean score of 50±18) [23]. Furthermore, Egyptian women had an average total score of 73±17 on the IWEVDS [24]. In our study, 78% of the abused women experienced social pressure. This suggests that even when couples do not perceive any issues related to their infertility, social pressures that hold women accountable for fertility problems, can create tension within the couple. Öztürk et al.'s study [3], revealed that more than three-quarters of infertile women found their infertility embarrassing, half of them felt judged by family and friends, and they believed that people criticized their decisions. In our study, around two-thirds of infertile women reported experiencing domestic violence. Similarly, other Iranian studies have shown a high prevalence of domestic violence. Ardabily et al. [16], estimated the prevalence of intimate partner violence (IPV) among Iranian infertile women using the Revised Conflict Tactics Scales, with a rate of 61.8%. Rahebi et al. [12] used the WHO domestic violence questionnaire and reported rates of 70% for psychological violence and 68% for physical violence against Iranian infertile women. Furthermore, Celik and Kirca [9] employed the IWEVDS and found a high rate of exposure to violence (72%) among Turkish infertile women. The high prevalence of violence in Iranian studies, despite the use of different assessment tools, suggests that violence against infertile women is a pervasive issue throughout the country and extends beyond specific cultures or regions, making it a global health concern. However, Aduloju et al.'s study [11] using the WHO domestic violence questionnaire among infertile Nigerian women reported a lower prevalence of IPV at 31.2%. Lower rates of domestic violence among infertile women reported in some studies in Asian and African countries may be

Table 4 Logistic regression analysis of factors associated with violence

Variable	β	Std. Error	Exp(β)	95% CI for Exp(B)		*p*-value
				Lower	Upper	
Living child	-1.098	0.428	0.333	0.144	0.771	0.010
Economic status	-1.451	0.50	0.234	0.088	0.626	0.004
Infertility duration	1.412	0.408	4.106	1.846	9.130	0.001
IVF/ICSI	0.356	0.450	1.428	0.591	3.453	0.429
Treatment failure	0.484	0.364	1.622	0.795	3.308	0.184

The goodness of fit:

Cox & Snell R Square=0.131

Nagelkerke R Square=0.225

due to underreporting and cultural variations within the study populations [25].

In our study, infertile women experienced violence not only from their husbands but also from others in society. Iran is a society that combines traditional and modern elements, and having children remains a significant concern in many Iranian families. In such interconnected and traditional societies, women who are unable to conceive may face direct or indirect abuse from their husbands, families and the wider community. Children hold a significant societal value, as they are regarded as precious treasures in the cultural context of Iran. Moreover, within the family unit, they are deemed essential for the sustainability of the family [16]. According to relevant studies, infertility is a psychologically threatening and stressful event in a woman's life [2], and it can lead to increased psychological problems among infertile women, such as high levels of distress [22], anxiety, depressive disorders [26], pain, sleep problems [27], unhappiness, changes in appetite [28] and sexual dysfunction [29]. Psychological factors, through cortisol secretion, can further exacerbate the problem of infertility and decrease the likelihood of pregnancy [30]. Thus, psychotherapeutic interventions may be necessary for infertile women in addition to infertility treatments [4]. While the desire to have children is often important for both men and women, women may face greater pressure and violence when couples struggle with infertility. Consequently, health professionals providing care to infertile women should be aware of the potential for violence [2] and its physical and psychological impact on these women. Routine screening for IPV among infertile women can facilitate access to appropriate healthcare and supportive services [31].

Our study revealed that abused women did not differ significantly from non-abused women in terms of sociodemographic characteristics, indicating that age, level of education and employment status did not protect women from violence. However, abused women had lower economic status and fewer living children compared to non-abused women. Previous studies have shown a relationship between lower levels of education [2, 5, 22] and lower income [5, 24] with marital violence among infertile women. However, in line with our findings, Aduloju et al. [11] found that the education level of women and their husbands, as well as their religion and ethnicity, were not significantly associated with violence. The lack of a significant association between sociodemographic characteristics and violence among women with infertility in our study and other studies [9, 16, 32] is an important finding, suggesting violence exposure is prevalent across various areas of human life, regardless of education level and economic development [22].

Furthermore, our study demonstrated that the longer the duration of a woman's infertility, the higher the frequency of violence. Similarly, other relevant studies have identified prolonged duration of infertility [11, 13, 23] and infertility treatment as predictors of violence against women and the severity of IPV [14]. In our study, women who underwent IVF/ICSI were more likely to report violence. The distress levels of infertile women tend to increase with prolonged duration of infertility treatment [22], which can diminish their hopes of having children [13]. Akyüz et al. also found that the rate of violence was higher among women who had received infertility treatment for longer than three years [21]. Besides the potential impact of repeated unsuccessful infertility treatments on marital relationships and sexual satisfaction, the financial burden of treatment can contribute to marital conflicts [14].

Additionally, in our study, the cause of infertility was significantly different between abused and non-abused women. Among the women who experienced violence, the most common causes of infertility were combined female and male factors (36.4%) followed by the female factor (30.3%), whereas among non-abused women, the most common cause was unknown (32.7%). Similarly, a Turkish study found a statistically significant relationship between the score on the violence scale and the reason for infertility [33]. Emotional abuse, and abandonment of the female partner were found to be more common among couples diagnosed with female factor infertility. In contrast, couples with a diagnosis of male factor infertility were less likely to experience divorce, and in some cases, there was a decrease in violence against female partners. This strongly indicates that infertility can be a risk factor for gender-based violence [15]. Researchers argue that infertility is often perceived as primarily a female issue, particularly in communities that place significant importance on childbearing. Consequently, women frequently bear the brunt of social sanctions related to having a small family [15, 34]. On the other hand, in patriarchal societies where having children is seen as a symbol of strength and men success, male infertility can serve as a predictor for sexual violence [2]. Thus, women may encounter various forms of violence due to the absence of children in the family. This emphasizes the importance of screening for violence among infertile women, regardless of the specific cause of infertility.

One of the strengths of this study is the utilization of a specific tool to measure violence against women with infertility. However, it is essential to acknowledge several limitations. Firstly, our data was restricted to a single hospital in Tehran, which limits the generalizability of the findings to small towns and rural areas. Nonetheless, it should be noted that the hospital we selected serves as a referral center, admitting patients from across the country. Secondly, considering the cross-sectional nature of the study, it is not possible to draw causal connections

between infertility and violence. Additionally, it is important to consider the potential underreporting of violence on account of stigma, blame and other cultural factors.

Conclusion

The findings of this study underline a high rate of violence among infertile women. In addition to domestic violence, women experience heightened stress due to social pressure associated with infertility. These findings underscore the importance of adopting a comprehensive approach in the treatment of infertile women and mobilizing family and community support to deal with the psychological consequences of infertility.

Considering that women with a longer duration of infertility are more prone to violence, it is crucial to prioritize these women for domestic violence screening programs and targeted adaptation strategies. Furthermore, it is worth noting that in infertile couples, regardless of whether the infertility is attributed to female or male factors, women may encounter violence. Therefore, evaluating and identifying the specific type of violence experienced by these women is essential to provide appropriate healthcare intervention and supportive counseling.

Abbreviations

DV	Domestic violence
ICSI	Intracytoplasmic sperm injection
IPV	Intimate partner violence
IVF	In vitro fertilization
IWEVDS	Infertile Women's Exposure to Violence Determination Scale

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Author contributions

M.G., F.R. and S.S.S. prepared the draft proposal and conducted the study. F.K. and A.S. contributed to data collection. S.A. and A.C. performed the analysis of data. M.G. and S.A. wrote the main manuscript text. All authors contributed to the reviewed draft version of the manuscript and approved the final version.

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Data availability

The data that support the findings of this study are available from the research deputy of Iran University of Medical Sciences but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the corresponding author upon reasonable request and with the permission of research deputy of Iran University of Medical Sciences. You can direct correspondence to shahbazishirin@yahoo.com.

Declarations

Ethics approval and consent to participate

In the current study, all methods were performed in accordance with the relevant guidelines and regulations (Declaration of Helsinki). The Ethics Committee of Iran University of medical sciences approved the project (Ethics code: IR.IUMS.REC.1398.1139). The study objectives were presented to the participants and an informed consent form was signed by all participants. The participants were well assured of anonymity of data by assigning a code to each participant.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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