

Evaluation of the Prevalence and Contributing Factors of Psychological Intimate Partner Violence in Infertile Women

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ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Original article</p>	<p>Background & aim: Intimate partner violence (IPV) is a global public health issue leading to the death of many people every year. Experience of infertility profoundly affects the personal well-being of women. This study aimed to evaluate the prevalence and contributing factors of psychological IPV in infertile women referring to the infertility centers affiliated to Shahid Beheshti University of Medical Sciences in Tehran, Iran in 2011.</p> <p>Methods: This cross-sectional study was conducted on 410 infertile women selected via multistage sampling. Demographic data of infertile women (33 items) and their spouses (16 items) were collected. In addition, researcher-made IPV questionnaire (53 items) and general health questionnaire (GHQ) (28 items) were used. Data analysis was performed in SPSS V.16 using descriptive statistics (Chi-square, independent T-test, ANOVA, Pearson's correlation-coefficient, and linear regression).</p> <p>Results: In total, 410 infertile women were enrolled in this study, 74.3% of whom were victims of psychological IPV. Results of linear regression analysis indicated that psychological IPV and GHQ had significant associations with the ethnicity and physical diseases of the spouses of infertile women ($P < 0.05$).</p> <p>Conclusion: According to the results of this study, rate of psychological IPV in infertile women was relatively high. Therefore, it is recommended that healthcare providers implement screening programs for the prevention of psychological IPV and the associated risk factors during infertility treatments. Such interventions could reduce the rate of psychological IPV and improve the general health of community.</p>
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Introduction

Intimate partner violence (IPV) is a global public health issue primarily targeting girls and women (1). "Healthy People 2010" is a national program, which mainly aims at reducing IPV against women by their male partners (2). IPV against women has been recognized as one of the most serious social problems in every culture and society in recent years (3). For over a decade, IPV has been considered as a significant risk to public health (4).

According to the World Health Organization (WHO), psychological IPV is defined as being insulted, belittled, intimidated or threatened leading to the isolation, domination and negligence of women. Behaviors associated with IPV are jealousy, acts of suspicion, or need for permission for everyday tasks in women (5). Women who are victims of violence may frequently suffer from physical injuries or chronic health problems (6). Each year, 5.3 million cases of domestic violence

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are reported by women aged above 18 years old, which incurs as much as two million injuries and 1400 deaths (7-9).

In most of the cases, the rate of violence-related mortalities, such as suicide due to IPV, are not recorded accurately (10). IPV leads to long-term, adverse consequences in the survivors, which may continue to exist even after the violence is stopped. Some of the common side effects associated with IPV are deficient overall health, poor quality of life, avoidance of healthcare services, physical symptoms, and gynecological disorders (11).

IPV is a common predicament in every country affecting the individuals of diverse social, cultural, economic, and religious backgrounds (12). Violence has been reported to have variable prevalence ranging between 15-71% worldwide (13). The highest level of violence against women comes from their spouses.

Extensive research has been conducted to evaluate different aspects of psychological IPV. In the United States, the prevalence of psychological IPV has been estimated at 32% (10), while this rate has been reported to be 60% in Japan (14) and 69.6% in Bosnia and Herzegovina (15). In Iran, the prevalence of psychological IPV has been reported to be 87.3% (16), 41% (17), 51.7% (18), and 8.3% in different studies (19). Women's health is largely influenced by the type, duration, and severity of violence (20).

According to the statistics of WHO, 60-80 million couples experience infertility across the world (21). In some regions, as much as 30% of married couples are infertile, 5% of whom are incapable of reproduction even after receiving treatment. Rate of primary fertility has been estimated to be 5.52-24.9% in Iran (22, 23).

When the role of women in a society is determined based on their capacity to reproduce, femininity is characterized by maternal function. As such, infertile women are commonly subjected to separation, violence and other familial misfortunes (16). In developing countries, infertility is synonymous with the loss of potential human resources (24).

Infertility results in anger, blame, separation, communal isolation, fear, hopelessness, and violence (25). Furthermore, this crisis is accompanied by physical, economic, psychological, and collective stress, which

directly affects various aspects of one's life (26).

Stress and infertility intensify each other forming a vicious circle (27). Infertility is influenced by physiological and psychosocial factors, and therefore, this phenomenon is included in both medical and behavioral-social sciences (28). Several studies have confirmed the key role of psychological factors in the occurrence of infertility. Moreover, infertility leads to numerous psychological outcomes.

For couples, especially women, infertility is considered as a stressful, emotional, and frustrating event. Inability to naturally reproduce and bear children is a painful experience, and psychosocial conditions add to the burden of this issue making it a psychological and social crisis for the individual (29).

According to the literature, infertile women are at a higher risk of anxiety, depression, and poor quality of life compared to fertile women (30). Women experience anxiety and stress every month at the beginning of their menstrual cycle when trying to conceive (23). Stress caused by infertility may differ from other types of stress. Infertile couples experience chronic stress each month in case of the failure of fertilization (31). Several researchers have claimed that in the presence of stressors, women use concentrated confrontation on excitement more often compared to men (32).

The findings of one study in this regard indicated that 48% of infertile women and 23.8% of infertile men suffered from depression, while 44% of infertile women were diagnosed with psychological disorders (33). Hormonal changes during the treatment of infertility have a significant impact on the emotions of infertile couples. For instance, rate of aggression increases in individuals receiving treatment for infertility. In other words, when men feel powerless and have low self-esteem, they react through aggressive behavior, while aggression in women is manifested through the transitory loss of self-control, high stress levels, social pressure, and extreme feeling of guilt. Aggressive behavior in infertile men is considered as a major risk factor for violent behavior (23).

This study aimed to evaluate the prevalence of psychological IPV and the contributing factors among the infertile women referring to the infertility centers affiliated to Shahid

Beheshti University of Medical Sciences in Tehran, Iran in 2011.

Materials and Methods

This analytical cross-sectional study was conducted on 410 infertile women during December 2010-May 2011 in Tehran, Iran. Based on (prevalence of psychological IPV: 25%, error type I: 0.05, test power: 90%), 430 women were selected for this study, and 20 cases were excluded. Final sample size of the study was determined at 410 infertile women. Study population consisted of the infertile women diagnosed by a gynecologist who attended the infertility centers for receiving treatment. Participants were selected via multistage sampling.

The infertility centers affiliated to Shahid Beheshti University of Medical Sciences in Tehran were classified into four groups based on their location (north, south, west, and east), and two centers were selected from each region randomly. After assigning a quota, purposive sampling was performed in each center based on the number of admitted infertile women.

Study protocol was approved by the Ethics Committee of Shahid Beheshti University of Medical Sciences (number: 88-01-86-6321-1, date: 08/03/2009). After obtaining official permit from the authorities of the university, objectives of the study were explained to the participants. In addition, written informed consent was obtained from all the women, and they were interviewed in private settings. Participants were assured of confidentiality terms regarding their personal information. Participation in the study was voluntary, and the spouses of infertile women were not required to be present at the time of interviews. Inclusion criteria of the study were Iranian nationality and diagnosis of infertility by a specialist. The only exclusion criterion was unwillingness for participation or completing the questionnaires (n=20).

Data collection tools included a researcher-made questionnaire consisting of four sections. The first section contained the demographic characteristics of infertile women (33 items). The second section included the demographic features of the spouses of infertile women (16 items), which was completed by the study samples. The third section of the questionnaire

assessed the level of psychological IPV. To prepare the psychological IPV questionnaire, all the questionnaires in the context were reviewed and used.

The final questionnaire, which was designed to evaluate the rate of psychological IPV within the past three months, consisted of 53 items scored based on a five-point Likert scale (never=0, seldom=1, sometimes=2, often=3, always=4). The questionnaire was validated using content validity by three psychiatrists, two psychologists, and five researchers who had performed previous studies on the subject of domestic violence. Internal consistency of the psychological IPV questionnaire was determined using Cronbach's alpha ($\alpha=0.89$), and the reliability of the scale was measured using the test-retest method at a 10-day interval ($r=0.81$).

The last section of the questionnaire was the Persian translation of the General Health Questionnaire (GHQ), which has been used in previous studies (34, 35). Items in the GHQ were scored based on a four-point Likert scale (not at all=0, almost normal=1, above normal=2, and extremely above normal=3). GHQ consisted of four subscales, including somatic symptoms (7 items), anxiety and sleep disorders (7 items), social function (7 items), and depressive symptoms (7 items). Scores of ≥ 22 in the GHQ indicated the need for receiving psychiatric counseling. In the present study, Cronbach's alpha coefficient and reliability of GHQ were 0.92 and 0.88, respectively.

Data analysis was performed in SPSS V.16 (SPSS Inc., Chicago, IL, USA). Normality of data was assessed using one-sample Kolmogorov-Smirnov test. In addition, frequency, percentage, mean, and standard deviation were used to describe the characteristics of infertile women, their spouses, prevalence of psychological IPV, and mental health status of the participants.

Correlations between the frequency of in-vitro fertilization (IVF) attempts and psychological IPV were evaluated using Pearson's correlation-coefficient. Moreover, Chi-square test was used to compare qualitative variables, and independent T-test was used to compare the mean values between the study group's. In this study, analysis of variance (ANOVA) was used to assess the relationship between the prevalence of psychological IPV and GHQ scores in the three

and four groups, such as duration of marriage, duration of infertility). In addition, linear regression analysis was used to evaluate the associations between psychological IPV and GHQ scores with the demographic characteristics of infertile women and their spouses. In this study, P value of less than 0.05 was considered statistically significant.

Results

In total, 410 infertile women were enrolled in this study. Demographic characteristics of the

infertile women and their spouses are shown in Table 1. Mean age of the infertile women and their spouses was 30.50 ± 6.16 and 34.8 ± 8.40 years, respectively. Mean age of the infertile women and their spouses was 23.28 ± 5.98 and 28.1 ± 10.09 years, respectively. Enquiry about the general health status of the infertile women indicated that 21.7% and 78.3% of these participants had favorable and unfavorable general health, respectively. Prevalence of psychological IPV was estimated at 74.3% in the study population.

Table 1. Frequency distribution of infertile women and spouses based on demographic characteristics

Independent Variables	Distribution of Infertile Women		Distribution of Spouses		P-value
	N (%)		N (%)		
Age (year)					
<20	4	(1)	0	(0)	0.072 ^a
20-30	235	(57.3)	124	(30.2)	
>30	171	(41.7)	286	(69.8)	
Age at Marriage (year)					
<20	118	(28.8)	0	(0)	0.063 ^a
20-30	239	(58.3)	314	(76.6)	
>30	53	(12.9)	96	(23.4)	
Education Status					
Illiterate	4	(1)	0	(0)	0.72 ^b
Primary Education	11	(2.7)	14	(3.3)	
Secondary Education	45	(11)	39	(9.4)	
High School	156	(38.1)	186	(45.3)	
Diploma and Above	194	(47.2)	171	(42)	
Employment Status					
Housewife	343	(83.7)	0	(0)	0.042 ^{b*}
Employee	50	(12.3)	134	(32.7)	
Self-employed	7	(1.6)	176	(43)	
Worker	10	(2.4)	100	(24.3)	
Income Status					
No Income	335	(81.7)	0	(0)	0.045 ^{b*}
Low	5	(1.3)	74	(18)	
Moderate	7	(1.7)	204	(49.7)	
High	63	(15.3)	132	(32.3)	
First Marriage					
Yes	391	(95.3)	361	(88)	0.81 ^b
No	19	(4.7)	49	(12)	

a: Independent T-test; b: Chi-square test; *Significance level of 0.05 (two-tailed)

Evaluation of the relationship between the scores of psychological IPV and demographic characteristics of the participants is presented in Table 2. In this regard, the results of

ANOVA indicated that the scores of psychological IPV were significantly correlated with the duration of marriage and infertility.

Table 2. Correlations between scores of psychological intimate partner violence and demographic characteristics

Independent Variables	N (%)	Score of Psychological Intimate Partner Violence (Mean±SD)	P-value*
Duration of Marriage (year)			
1-2	51 (12.4)	1.16±2.13	0.014 ^a
3-5	152 (37)	4.43±1.73	
>5	207 (50.6)	7.18±3.13	
Duration of Infertility (months)			
1-24	179 (43.7)	13.12±2.63	0.011 ^a
25-48	98 (24)	39.2±5.21	
>48	133 (32.3)	46.1±7.11	
Frequency of **IVF Attempts			
None	280 (68.3)	3.84±2.71	0.041 ^b
Once	89 (21.7)	1.89±4.12	
Twice	27 (6.7)	0.94±0.64	
More than Twice	14 (3.3)	0.56±1.14	
Microinjection Attempts			
No	358 (87.3)	2.82±4.70	0.042 ^c
Yes	52 (12.7)	5.14±3.72	
Age of Spouse (year)			
<20	0 (0)	0.0	0.017 ^b
20-30	124 (30.2)	23.9±5.13	
>30	286 (69.8)	36.1±7.40	
Ethnicity of Spouse			
Persian	251 (61.3)	2.22±3.73	0.037 ^c
Others	159 (38.7)	6.11±5.17	
Spouse Addiction			
No	396 (96.7)	2.67±4.89	0.0001 ^c
Yes	14 (3.3)	5.73±7.08	
Physical Diseases of Spouse			
No	374 (91.3)	2.63±3.97	0.000 ^c
Yes	36 (8.7)	10.64±12.77	
Neurological Diseases of Spouse			
No	396 (96.7)	2.57±4.11	0.000 ^c
Yes	14 (3.3)	5.93±7.91	
Threats of Divorce			
No	380 (92.7)	2.71±4.23	0.000 ^c
Yes	30 (7.3)	15.80±21.0	
General Health Status			
Unfavorable	89 (21.7)	5.98±7.51	0.000 ^c
Favorable	321 (78.3)	1.99±2.93	

a: Analysis of variance (ANOVA); b: Pearson's correlation-coefficient; c: Independent T-test; *Significance level of 0.05 (two-tailed); **IVF: In-vitro fertilization

According to the results of Tukey's post-test, mean scores of psychological IPV were significantly higher in prolonged duration of

marriage and infertility. Moreover, scores of psychological IPV were significantly associated with the frequency of IVF attempts

($r=0.231$, $P=0.041$) and age of the spouse ($r=0.145$, $P=0.017$).

According to our findings, scores of psychological IPV had a significant correlation with the frequency of microinjections, ethnicity of the spouse (Persian, Turk, Lor, or Kurd), addiction of the spouse, physical and neurological diseases of the spouse, threats of divorce, and self-reports of women regarding

their mental state ($P<0.05$). According to the results of GHQ, 21.7% of the infertile women in this study had scores above 22, which indicated that these individuals were at a higher risk of mental problems. Correlations between the scores of GHQ and demographic characteristics of the participants are shown in Table 3.

Table 3. Correlations between general health scores and demographic characteristics

Independent Variables	N (%)	General Health Score Mean±SD	P-value*
Duration of Marriage (year)			
1-2	51 (12.4)	1.06±1.13	0.000 ^a
3-5	152 (37)	5.11±3.91	
>5	207 (50.6)	8.10±3.19	
Duration of Infertility (months)			
1-24	179 (43.7)	13.1±2.21	0.006 ^a
25-48	98 (24)	39.2±6.87	
>48	133 (32.3)	51.5±3.76	
Ethnicity of Spouse			
Persian	251 (61.3)	15.95±7.32	0.001 ^b
Others	159 (38.7)	20.08±10.52	
Spouse Addiction			
No	396 (96.7)	17.24±7.91	0.001 ^b
Yes	14 (3.3)	27.29±15.70	
Physical Diseases of Spouse			
No	374 (91.3)	17.09±7.61	0.000 ^b
Yes	36 (8.7)	30.0±15.81	
Neurological Diseases of Spouse			
No	396 (96.7)	16.91±7.23	0.001 ^b
Yes	14 (3.3)	22.33±14.00	
Threats of Divorce			
No	380 (92.7)	3.71±2.57	0.008 ^b
Yes	30 (7.3)	13.33±9.67	

a: ANOVA; b: Independent T-test; *Significance level of 0.05 (two-tailed)

According to the results of ANOVA, scores of GHQ were significantly associated with the duration of marriage and infertility. Moreover, Tukey's post-test indicated that couples with longer duration of marriage and infertility had

mean scores of >22 in GHQ. In addition, higher scores of GHQ had a significant correlation with the ethnicity (not Persian), addiction, and physical and neurological diseases of the spouse, as well as the threats of divorce.

Table 4. Linear regression and predictors of psychological intimate partner violence scores

Predicting Variables	B (SE*)	β	T-test	P-value**
Ethnicity of Spouse	0.61 (0.24)	0.15	2.55	0.011
Physical Diseases of Spouse	4.61 (1.48)	0.21	3.12	0.002

*Standard error; **Significance level of 0.05 (two-tailed)

In this study, the results of linear regression revealed a significant correlation

between the scores of psychological IPV and GHQ with the ethnicity and physical diseases

of the spouse (tables 4 & 5) ($P < 0.05$).

Table 5. Linear regression and predictors of general health scores

Predicting Variables	B (SE*)	β	T-test	P-value**
Ethnicity of Spouse	1.51 (0.41)	0.20	3.64	0.000
Physical Diseases of Spouse	7.47 (2.56)	0.19	2.91	0.004

*Standard error; **Significance level of 0.05 (two-tailed)

Discussion

According to the results of the present study, the prevalence of psychological IPV was 74.3% among infertile women. In one research, Behboodi Moghadam et al. (2010) reported this rate to be 33.8% in infertile women (36), which was lower compared to the results of our study. This difference could be due to the cultural diversities in study populations, as well as different data collection tools.

In the present study, significant associations were observed between the prevalence of psychological IPV and ethnicity of the spouse, which is consistent with the results obtained by Nohjah et al. and Lipsky et al. (17, 37). Violence occurs more frequently in cultures where men are a predominant symbol of power. In some ethnicities, the judgment and ideas of other people about infertility are more important to infertile couples than the condition itself.

Infertile men feel disappointed and defeated since they cannot show their virility and sexual potency as expected by the society, and therefore, they experience negative emotions. Infertile men are often incapable of adapting with their condition. They might become isolated and preoccupied with their infertility, and this could lower their self-esteem (38). Rate of domestic violence is largely influenced by the role of women in the family. To define their identity and find meaning in life, women devote part of their life to motherhood and readily sacrifice their opportunities for parenting (39).

According to the results of the current study, physical diseases of the spouse were significantly associated with the occurrence of psychological IPV, which is consistent with the findings of Taherkhani et al. and Nohjah et al. (16, 17). Furthermore, it was observed that men with infertile spouses had lower self-esteem, higher anxiety, and more somatic symptoms

(40). Based on the results of the study by Lin et al. (2010), rate of psychological IPV in people with disabilities was 3.7 times higher than the general population (41).

When people face with physical disabilities, their knowledge about the disability may add to the extent of their condition influencing all the psychosocial aspects of their life. Consequently, these individuals may become hypersensitive to their disability (39). In the presence of a female infertility factor, men might experience psychological problems less often than women. In case of a male infertility factor, the psychological reaction of men is similar to that of women (40).

Infertile men should adapt themselves to at least two stressful situations: the inability to reproduce and failure to have a child to complete their life (42). According to our findings, psychological IPV was significantly associated with the addiction of the spouse, which is consistent with the results obtained by Aklimunnessa et al. (43). It is also noteworthy that high-risk behaviors, such as addiction, could predispose men to violence.

Several variables associated with violence are likely to disturb the mental health of individuals. Mental health is inherent to physical health, high quality of life, overall well-being, reduction of crime rates, and decreasing hopelessness, abuse and violence in a community (44).

According to the findings of the present study, several factors that affected the incidence of psychological aggression posed substantial risk to the mental health of infertile women. Assessment of the social status among the participants of the current study indicated that women had lower social status compared to men, which denoted the sexual inequity in our society (45). In communities like Iran, where

maternal function is an indispensable part of a woman's identity, childbirth is considered as a source of power for women in the family and society. On the other hand, mothers may face familial and social challenges because of childbirth (42). Results of the present study revealed that duration of marriage was significantly associated with the occurrence of psychological IPV, which is consistent with the findings of Mirzaii et al. (2010) (46).

According to our findings, duration of infertility was significantly correlated with the incidence of psychological IPV. However, no reports were found in the literature in this regard. In the current research, frequencies of microinjection and IVF attempts were found to be correlated with the rate of psychological IPV. Undoubtedly, clinical efforts and technology could improve the outcomes in infertile couples. In one study, Ragni et al. (2005) suggested that duration of infertility and failure to achieve conception via IVF might adversely affect the quality of life in women (47).

Factors such as infertility treatments, family pressure, regular physician appointments, and waiting for the results of treatment may challenge the personal life of infertile couples (48).

According to our study, general health of infertile women was significantly associated with the duration of marriage, which was correlated with the duration of infertility. Another research has proposed that the duration of infertility is directly associated with the general health of women.

According to the results obtained by Sbaragli et al. (2008), psychiatric comorbidity was positively correlated with the duration of infertility (49). In the present study, a significant correlation was observed between the general health of infertile women and ethnicity of the spouse, which is consistent with the findings of Greil et al. (2011) (50). Furthermore, general health of infertile women in our research was significantly associated with the addiction of the spouse, which is in line with the results obtained by Taherkhani et al. (2009) (16).

Infertility may be considered as a disability in men, and this notion could be manifested through high-risk behaviors. According to the results of the present study, general health of

infertile women had a significant correlation with the physical and neurological diseases of the spouse, which is consistent with the findings of Upkong & Orji (2006) (51). Moreover, general health of infertile women in our study was found to be associated with threats of divorce.

In the Iranian culture, absence of children may lead to serious marital problems, such as divorce or second marriage, especially in Islamic societies, where polygyny is allowed (52). Mental disorders are known to be more prevalent among infertile women (53). Treatments for infertility will gain the hope of many couples to build a happy family. Primary healthcare providers have a responsibility to assess psychological IPV as a means of monitoring the health status of these individuals.

One of the strengths of the present study was the evaluation of the rate of psychological IPV in infertile women as an obliterated issue. For this research, we selected the infertility centers affiliated to Shahid Beheshti University of Medical Sciences in Tehran city. Considering the different features of these centers, it is recommended that future studies be conducted as to compare the rate of psychological IPV in other medical facilities of this capital city in Iran. One of the limitations of the present study was the possible addiction of infertile women or their spouses to alcohol, cigarette, and drugs, which might have been the main cause of subjection to violence and yet remained unexpressed by the participants due to cultural and social boundaries.

Conclusion

According to the findings of this study, prevalence of psychological IPV was relatively high among infertile women. Therefore, identification and prevention of this public health issue seems crucial. Several factors influence psychological IPV and may threaten the mental health of infertile women. The relationship between infertility and IPV should be investigated in different cultural context. Psychological IPV is a major risk factor to the general health of the victims, and these individuals require special attention as to overcome possible mental disorders. Mental health is inherent to the well-being of the

members of a community. Therefore, effectual psychological interventions should be integrated for the treatment of infertility. In this regard, use of complementary approaches, such as relaxation techniques, stress management, coping skills training, group support, medical therapy for emotional disorders, and psychiatric consultation, could alleviate the adverse consequences of violence and improve the quality of life of the victims.

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Conflicts of Interest

The authors declare no conflicts of interest.

References

- McCloskey LA, Williams C, Larsen U. Gender inequality and intimate partner violence among women in Moshi, Tanzania. *International Family Planning Perspectives*. 2005; 31:124-130.
- Cunningham FG. *Williams: obstetrica*. 23th. New York: McGraw Hill Companies; 2012.
- Wahed T, Bhuiya A. Battered bodies & shattered minds: violence against women in Bangladesh. *Indian Journal of Medical Research*. 2007; 126(4):341-354.
- Espinosa R, Gutiérrez MI, Mena-Muñoz JH, Córdoba P. Domestic violence surveillance system: a model. *Salud pública de México*. 2008; 50:s12-s18.
- Johnson RJ, Humera A, Kukreja S, Found M, Lindow SW. The prevalence of emotional abuse in gynecology patients and its association with gynecological symptoms. *European Journal of Obstetrics & Gynecology and Reproductive Biology* 133(1):1-122.
- Roelens K, Verstraelen H, Egmond K, Temmerman M. A knowledge, attitudes, and practice survey among obstetrician-gynecologists on intimate partner violence in Flanders, Belgium. *BMC Public Health*. 2006; 6(1):238.
- Sato-DiLorenzo A, Sharps PW. Dangerous intimate partner relationships and women's mental health and health behaviors. *Mental Health Nursing*. 2007; 28(8):837-848.
- Houry D, Kembal R, Rhodes KV, Kaslow NJ. Intimate partner violence and mental health symptoms in African American female ED patients. *The American Journal of Emergency Medicine*. 2006; 24(4):444-450.
- Wilson JS, Websdale N. Domestic violence fatality review teams: an interprofessional model to reduce deaths. *Journal of Interprofessional Care*. 2006; 20(5):535-544.
- Chambliss LR. Intimate partner violence and its implication for pregnancy. *Clinical Obstetrics and Gynecology*. 2008; 51(2):385-397.
- Campbell JC. Health consequences of intimate partner violence. *The Lancet*. 2002; 359(9314):1331-1336.
- Hammoury N, Khawaja M, Mahfoud Z, Afifi RA, Madi H. Domestic violence against women during pregnancy: the case of Palestinian refugees attending an antenatal clinic in Lebanon. *Journal of Women's Health*. 2009; 18(3):337-345.
- Koski AD, Stephenson R, Koenig MR. Physical violence by partner during pregnancy and use of prenatal care in rural India. *Journal of Health, Population and Nutrition*. 2011; 29:245-254.
- Weigourt R, Maruyama T, Sawada I, Yoshino J. Domestic violence and women's mental health in Japan. *International Nursing Review*. 2001; 48(2):102-108.
- Avdibegovic E, Sinanovic D. Consequences of domestic violence on women's mental health in Bosnia and Herzegovina. *Croatian Medical Journal*. 2006; 47(5):730-741.
- Taherkhani S, MirmohammadAli M, Kazemnezhad A, Arbabi M, Amelvalizadeh M. Investigation of domestic violence against women and its relationship with the couple's profile. *Journal of ForMed*. 2009; 15:123-129.
- Nohjah S, Latifi SM, Haghghi M, Eatesam H, Fathollahifar A, Zaman N, et al. The prevalence of domestic violence against women and its related factors in Khuzestan province, in 2007-2008. *Behbood, Research Journal of Medical Sciences, Kermanshah*. 2011; 15(4):278-286 (Persian).
- Salehi S, Mehalian AH. The prevalence and types of domestic violence against pregnant women referred to maternity clinics in Shahrekord 2003. *Shahrekord University of Medical Sciences Journal*. 2006; 8(2):72-77 (Persian).
- Hassan M, Kashanian M, Roohi M, Vizheh M. Domestic violence against pregnant women: prevalence and associated factors. *Journal of Women and Society*. 2010; 1(4):77-95.
- Bonomi AE, Thompson RS, Anderson M, Reid RJ, Carrell D, Dimer JA. Intimate partner violence and women's physical, mental and social functioning. *American Journal of Preventive Medicine*. 2006; 30(6):458-466.
- Akizuk IY, Kai I. Infertile Japanese women's perception of positive and negative social interactions within their social networks. *Human Reproduction*. 2008; 23(12):2737-2743.

22. Vahidi S, Ardalan A, Mohammad K. Prevalence of primary infertility in the Islamic Republic of Iran in 2004–2005. *Asia-Pacific Journal of Public Health*. 2009; 21(3):287–293.
23. Sultan S, Tahir A. Psychological consequences of infertility. *Hellenic Journal of Psychology*. 2011; 8(2):229–247.
24. Ackerson LK, Kawachi I, Barbeau EM, Subramanian SV. Effects of individual and proximate educational context on intimate partner violence: a population-based study of women in India. *American Journal of Public Health*. 2008; 98(3):507–514.
25. Jeyaseelan L, Kumar S, Neelakantan N, Peedicayil A, Pillai R, Duvvury N. Physical spousal violence against women in India: some risk factors. *Journal of Biosocial Science*. 2007; 39(5):657–670.
26. Hunter WM, Sadowski LS, Hassan F, Jain D, De Paula CS, Vizcarra B, et al. Training and field methods in the WorldSAFE collaboration to study family violence. *Injury Control and Safety Promotion*. 2004; 11(2):91–100.
27. Moore AM, Frohwirth L, Miller E. Male reproductive control of women who have experienced intimate partner violence in the United States. *Social Science and Medicine*. 2010; 70(11):1737–1744.
28. Othman S, Adenan NA. Domestic violence management in Malaysia: a survey on the primary health care providers. *Asia Pacific Family Medicine*. 2008; 7(1):2.
29. Gibson DM, Myers JE. The effect of social coping resources and growth-fostering relationships on infertility stress in women. *Journal of Mental Health Counseling*. 2002; 24(1):68–80.
30. Nouri RK, Akhondi MM, Ardakani ZB. Psychosocial aspects of infertility from viewpoint of infertility treating physicians. *Journal of Reproduction & Infertility*. 2001; 2(3):13–26.
31. Sreshthaputra O, Sreshthaputra RA, Vutyavanich T. Gender differences in infertility-related stress and the relationship between stress and social support in Thai infertile couples. *Journal of the Medical Association of Thailand*. 2008; 91(12):1769–1773.
32. Rashidi B, Hosseini S, Beigi P, Ghazizadeh M, Farahani M. Infertility stress: the role of coping strategies, personality trait, and social support. *Journal of Family and Reproductive Health*. 2011; 5(4):101–108.
33. Noorbala AA, Ramezanzadeh F, Abedinia N, Yazdi SA, Jafarabadi M. Study of psychiatric disorders among fertile and infertile women and some predisposing factors. *Journal of Family Reproductive Health*. 2007; 1(1):6–11.
34. Ghahari SH, Panaghi L, Mohammadi A. Evaluating the mental health of spouse-abused women. *Journal of Gorgan University of Medical Sciences*. 2007; 8(20):58–63 (Persian).
35. Tabatabaei SM, Panahandeh S, Hasanabadi M, Roshani F, Attari A. Relation between general health and marital satisfaction in employees of Ferdowsi University of Mashhad. *Research Behavior Sciences*. 2013; 10(6):491–499 (Persian).
36. Moghadam Z, Ardabili H, Salsali M, Ramezanzadeh F, Nedjat S. Physical and Psychological violence against infertile women. *Journal of Family and Reproductive Health*. 2010; 4(2):65–67.
37. Lipsky S, Caetano R, Roy-Byrne P. Racial and ethnic disparities in police-reported intimate partner violence and risk of hospitalization among women. *Women's Health Issues*. 2009; 19(2):109–118.
38. Gannon K, Glover L, Abel P. Masculinity, infertility, stigma and media reports. *Social Sciences & Medicine*. 2004; 59(6):1169–1175.
39. Younesi SJ. Stigma and infertility in Iran-coping skills. *Journal of Reproduction & Infertility*. 2002; 3(4):74–86.
40. Fisher J, Hammarberg K. Psychological and social aspects of infertility in men: an overview of the evidence and implications for psychologically informed clinical care and future research. *Asia Journal of Andrology*. 2012; 14(1):121–129.
41. Lin JD, Lin LP, Lin PY, Wu JL, Li CD, Kuo FY. Domestic violence against people with disabilities: prevalence and trend analyses. *Research in Developmental Disabilities*. 2010; 31(6):1264–1268.
42. Abbasi SM, Asghari KA, Razeghi NH. Women and infertility experience: a case study in Tehran. *Woman in Development and Politics*. 2005; 3(3):91–114 (Persian).
43. Aklimunnessa K, Khan MM, Kabir M, Mori M. Prevalence and correlates of domestic violence by husbands against wives in Bangladesh: evidence from a national survey. *The Journal of Men's Health & Gender*. 2007; 4(1):52–63.
44. Basu S. Mental health concerns for Indian women. *Indian Journal of Gender Studies*. 2012; 19(1):127–136.
45. Cwikel J, Gidron Y, Sheiner E. Psychological interactions with infertility among women. *European Journal of Obstetrics & Gynecology and Reductive Biology*. 2004; 117(2):126–131.
46. Mirzaii K, Vakilian K, Hajian S. Prevalence of domestic violence (psychological): housewives compared to employed women and the relationship between domestic violence and some demographic factors in Shahroud, 2009. *Scientific Journal of Forensic Medicine*. 2010; 16(4):277–283.

47. Ragni G, Mosom P, Baldini MP, Somighiana E, Vegetti W, Caliarì H, et al. Health-related quality of life and need for IVF in 1000 Italian infertile couples. *Human Reproduction*. 2005; 20(5):1286-1291.
48. Williams KE, Marsh WK, Rasgon NL. Mood disorders and fertility in women: a critical review of the literature and implications for future research. *Human Reproduction Update*. 2007; 13(6):607-616.
49. Sbaragli C, Morgante G, Goracci A, Hofkens T, De Leo V, Castrogiovanni P. Infertility and psychiatric morbidity. *Fertility and Sterility*. 2008; 90(6):2107-2111.
50. Greil AL, McQuillan J, Shreffler KM, Johnson KM, Slauson-Blevins KS. Race-ethnicity and medical services for infertility stratified reproduction in a population-based sample of US women. *Journal of Health and Social Behavior*. 2011; 52(4):493-509.
51. Upkong D, Orji EO. Mental health of infertile women in Nigeria. *Turkish Journal of Psychology*. 2006; 17(4):259.
52. Ramezanzadeh F, Aghssa MM, Abedinia N, Zayeri F, Khanafshar N, Shariat M, et al. A survey of relationship between anxiety, depression and duration of infertility. *BMC Women's Health*. 2004; 4(1):4-9.
53. Hassanpour S, Bani S, Mirghafourvand M, Kochaksarayie FY. Mental health and its personal and social predictors in infertile women. *Journal of Caring Sciences*. 2014; 3(1):37-45.