

## Systematic Review

# Infertility and Psychological and Social Health of Iranian Infertile Women: A Systematic Review

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### Abstract

**Objective:** Infertility influences various emotional, psychological, social, and relational aspects of women's lives. By employing a systematic review on the papers published in this field, this study aimed to identify the consequences of infertility on psychological and social health of women in Iran.

**Method:** This was a descriptive study, conducted through a systematic review according to the directions denoted by the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) in 2018. To investigate the entirety of the published studies on the sociopsychological consequences of women's infertility in Iran, various databases, including Comprehensive Human Science Portal, Scientific Information Databases (SID), Magiran, National Library and Archives of I. R. IRAN, Noormags, MEDLIB, Science Direct, Google Scholar, Medline, and ProQuest, were explored for the studies published between 1991 and 2018. The selected papers were evaluated according to the content analysis method.

**Results:** Out of the 53 papers investigated, 27 were published in domestic journals (51%), while the remaining 26 papers were published in international journals and were in English (49%). The results revealed that sociopsychological consequences of women's infertility are categorized in 6 main categories: (1) quality of life, (2) depression, (3) anxiety, (4) social support, (5) violence, and (6) sexual function.

**Conclusion:** The results of this study can be used to design psychocognitive interventions and assist women in decreasing the emerging psychological pain and pressure.

**Key words:** *Infertility; Psychological Health; Sociopsychological Consequences; Systematic Review*

According to the World Health Organization (WHO), infertility is defined as the lack of success in pregnancy, or disability to become pregnant after one year of regular and unprotected sexual intercourse (1). Worldwide, approximately 186 million people suffer from infertility, who are mostly from developing countries (2). Based on the studies conducted in Iran, the overall infertility mean is 13.2 (3) and the prevalence rate of primary infertility is 17.3 (4), which are both more than the average global statistics.

Facing infertility diagnosis and its following treatment process can result in emotional, social, and psychological distress in couples. Several studies have reported depression (5), anxiety (6), sexual dysfunction,

and marital disinclinations (7, 8), decrease in self-confidence (9), and low levels of psychological wellbeing (10, 11) and quality of life (12) in infertile couples. Indeed, as a unique physical disorder and as an initial syndrome, infertility is the onset of many psychiatric disorders.

Even though both men and women are emotionally and sentimentally influenced by infertility, the studies indicate that women are prone to more pressure (13). Also, 50% of infertile women perceive infertility as the most challenging issue of their lives. The significance of the pain emerged from infertility according to their description is equivalent to the psychological pains of patients suffering from life-threatening diseases such as cancer and cardiovascular diseases (14).

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### Article Information:

Received Date: 2019/10/26, Revised Date: 2019/12/14, Accepted Date: 2019/12/25

The birth of a child is mainly recognized as the stabilizer of the women's identities. A woman believes that she is complete only if she is fertile and has childbearing capability. She perceives her biological, social, and psychological successes to be dependent on her power to give birth. If she is infertile, then, she feels inadequate. In addition, infertility is believed to be a disgrace for women in many cultures. In these cultures, the ultimate goal in marriage for most women is fertility, which is basically giving birth to a child to continue the family inheritance and name, while preserving the family ancestry (15).

Therefore, infertility is not only a medical or psychological problem, but also a social problem due to the inability to play one of the essential social roles-being a parent. Owing to the cultural and social reasons, as well as religious beliefs, having children in Asian countries is a more crucial factor than Western countries (16). Unfortunately, the extended family system, contrary to its benefits in many aspects, deteriorates the problem of infertility. Not having a child is preferred to be a private concern for a couple. However, in such extensive family situations, it changes into a query from the relatives, friends, and neighbors (17). In such societies, relatives are constantly advising infertile couples and express their opinions regarding the reasons for infertility. Furthermore, in ancient Iranian mythology, gods symbolizing materiality were gods who possessed fertility, childbearing, and lateral attributes of female-maternal ability such as wisdom, intellect, forbearance, humility, forgiveness, and so forth .

In many traditional cultures, infertile women are more exposed to their husbands' remarriage compared to fertile women (18). In addition, the therapeutic methods used for infertility are often conducted on women, which in turn increases the pressure on them.

The results of the studies also signified the presence of a positive relationship between psychiatric consequences of infertility and gender (eg, being a woman). In Maroufizadeh et al, (2018), it was pointed out that manifestation ratio of anxiety symptoms in infertile women is 2.26 times more than infertile men (19). Moreover, in another study, it was revealed that the manifestation ratio of depression symptoms in infertile women is 2.71 times more than infertile men (20).

The high prevalence of psychiatric disorders in infertile women, as well as the significant role of psychological interventions in increasing the probability of success in treatment and pregnancy of infertile women (21), necessitates attention to the psychosocial consequences of infertility more than ever. Although many quantitative studies have been conducted on the psychological and social consequences of infertility in Iran, to date, no epidemiological study has been conducted on the comprehensive identification of the psychological and social consequences of infertility in Iran. In this study, it was aimed to perform a systematic review on the studies regarding the psychosocial consequences of women's

infertility and to pave the way for experts to design a therapeutic scheme to preclude or decrease the negative effects of infertility in women. Moreover, this study aimed to find a proper answer to the following question: What is the effect of infertility on social and psychological health of infertile women?

## Materials and Methods

### Methodology

This was a descriptive study conducted through a systematic review, according to the directions denoted by the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) in 2018.

### Literature Search

To investigate the entirety of the published studies on the psychosocial consequences of women's infertility in Iran, various databases, including Comprehensive Human Science Portal, Scientific Information Databases (SID), Magiran, National Library and Archives of I. R. IRAN, Noormags, MEDLIB, Science Direct, Google Scholar, Medline, and ProQuest, were explored to find the studies published between 1991 and 2018. To maximize the comprehensiveness of the research, the lists of references were manually investigated in all relevant papers found in the search. The search for papers in indices was executed using keywords such as infertility, women's infertility, primary infertility, secondary infertility, quality of life, well-being, mood disorder, anxiety disorder, sexual dysfunction, psychological distress, and their combination .

### Inclusion Criteria

To select a sample group from the initial findings, a series of inclusion and exclusion criteria was considered. The inclusion criteria for this study were as follow: (1) studies published between 1999 and 2018, (2) studies conducted on the effects of infertility on Iranian women, (3) studies available in full-text published either online or accessible in the archives of libraries, (4) Persian authors, (5) papers published both in Persian or English. However, papers with inaccessible full-texts and those with integral methodological defects were excluded .

### Data Analysis

For data analysis, the contents of all papers were summarized according to the PRISMA checklist. Then, further analysis was performed on the contents, based on the content analysis method (Eg, a code was allocated to any extracted content.). Next, similar codes were integrated to establish the main categories. To increase the investigation credibility of the inclusion and exclusion criteria, 2 researchers compiled the PRISMA checklist, extracted the codes, and selected the main categories. In instances of controversial cases, opinion of a third researcher was taken into consideration.

## Results

Out of the initial 353 papers identified in the resources search phase, 67 were removed due to inconsistency

with the title. In the screening stage, another 33 were eliminated following a review on their abstracts. Moreover, another 5 papers were removed in this stage, since their full-texts were inaccessible. Next, from the overall 248 papers remaining after the initial selection, 75 additional papers were removed due to poor quality in PRISMA, followed by another 120 papers due to inclusion and exclusion criteria. Finally, 53 papers were selected for the systematic review study (Figure 1).

In the 53 papers selected for investigation, 27 (51%) were published in Iranian journals, while the remaining 26 papers (49%) were published in international journals. All papers were original research studies. Also, 51 papers were descriptive, 1 qualitative, and 1 clinical trial. Moreover, 18 studies were conducted in Tehran (34%), 5 in Mashhad (10.5%), 4 in Isfahan (7.5%), and the rest were conducted in other cities. Furthermore, 26 papers (49%) used random sampling methods (eg, simple, cluster, and systematic), while 27 papers used nonrandom sampling methods (eg, convenient, voluntary, purposeful, and constant). In addition, the sample sizes in these studies ranged from 15 to 1506 participants.

Once the findings of the examined papers were analyzed, 6 main categories concerning the psychosocial consequences of infertility in women were identified: (1) quality of life, (2) depression, (3) anxiety, (4) social support, (5) violence, and (6) sexual function. In tables 1-6, the characteristics of these articles, such as the authors' names, the year of publication, the city of the research, the sampling method and sample size, the method and the result of the study are listed.

### Discussion

This study aimed to investigate the effects of infertility on psychological and social health of infertile women in Iran through a systematic review on the studies conducted in this field. In addition to synthesizing the results obtained from different studies, the present research supports the possibility of obtaining more precise conclusions and, consequently, necessity of planning to assist these women in decreasing their pains and troubles. In this study, psychological and social consequences of women's infertility in Iran were categorized into 6 main categories: quality of life, depression, anxiety, social support, violence, and sexual function.

From the 10 papers studied, 8 papers reported lower levels of quality of life in both infertile women and infertile men (22-24). Gholi et al (2012) reported poor quality of life in 19% of infertile women (25), which were in line with results obtained from other studies in this respect (26, 27). The significance of the effect of infertility on quality of life is to the extent that a new definition is considered for fertility quality of life (FertilQOL) in the literature. Diagnosis and process of infertility treatment is a challenging experience for women. Long-term therapies and the financial costs they

impose, fear of getting older and enduring unsuccessful therapeutic methods, and growing past the fertility age influence the capability of infertile women to enjoy life. In addition, when such issues are accompanied by high levels of stress, anxiety, and depression, they intensely decrease their quality of life. Investigations demonstrated that there is a relationship between the quality of life in infertile women and the intensity of desire to have children (28), financial problems, partner's occupations (25), and the reason for infertility (29). To date, in studies conducted on infertility, more attention has been paid to negative emotional factors and to less to positive emotional factors. Diener et al (1998) also stated that in healthy people, negative emotions are more important than positive ones (30). People with high levels of well-being generally experience positive emotions and have positive evaluations of events around them. People with low well-being, however, rate their life events as unfavorable and experience more negative emotions such as anxiety, depression, and anger. Therefore, it is of high importance to pay more attention to positive emotional factors when considering psychological and social consequences of infertility.

The results from the 14 papers considering depression in infertile women indicated that prevalence of depression in infertile women varies from 30% to 66% (31, 32). The results reported in Haririan et al (2009) revealed that 58% of infertile women suffered a certain degree of depression. Among these women, 37% had mild depression symptoms, 10% moderate depression, and 11% severe symptoms of depression (33). Infertility can cause disorders in quality of marital relationships, can decrease self-confidence, emerge interpersonal problems and anger suppression, establish feeling of inferiority complex, and result in low levels of psychocognitive well-being in infertile women (34). The rate of depression in infertile individuals was correlated with various components, including gender (being a woman), length of infertility, successfulness/unsuccessfulness of previous therapies, and the reason for infertility (the person himself/herself or his/her partner is the reason for infertility). Omani-Samani et al (2018) reported that infertile women suffer from depression 2.71 times more than men (20).

The results obtained from the 8 studies conducted on anxiety in infertile women confirmed that anxiety is the most prevalent psychological consequence of infertility in women, with a prevalence rate of 44% to 86% (31, 35). Infertility is a stressful and disappointing factor. In fact, in ranking the worst life events during a woman's life, infertility is in the fourth rank, following death of parents and partner's infidelity (36). Also, 2.26 times more anxiety symptoms were reported from infertile women compared to men (19). In comparison with men, infertility is more stressful for infertile women due to several psychocognitive, social, and cultural factors. The significance of maternal role in women transcends

infertility to a critical experience influencing every aspect of life.

Investigating the results of the 9 studies conducted on social support in infertile women implies that social support is the main predictor of psychological health (37), adaptation to infertility (38), and marital adjustment (39). Social support is defined as the acquisition of information, financial aid, health advice, and emotional support from those who are loved by the infertile women and are part of her social network, including her partner, relatives, and friends. The results of the study by Ezzati et al (2013) confirmed that lack of emotional support from families, as an environmental variable, provides the basis for manifestation of negative psychocognitive consequences of infertility (40). Infertility can be the source of social and psychological suffering, especially for women. In some societies, there is a great deal of gender bias, so that inability to have children is attributed only to women. One study found that although male infertility accounts for at least half of the world's cases and is often the most difficult form of treatment, it is still widely believed that infertility is a female problem worldwide. The role of male infertility has thus been largely neglected and hidden even in many societies, including the Middle East (41).

The results of studies conducted on violence against infertile women revealed that violence is the most paramount social consequence of infertility in Iran. According to the UN declaration on elimination of violence against women in 1993, violence against women is defined as any sexual violent action leading to physical, generic, or psychological injuries or compulsory deprivation from personal and social freedom in women (42). The results of the study conducted by Alijani et al (2018) indicated that 88.9% of infertile women had experienced domestic violence. In addition, psychological violence (eg, abuse, humiliation,

and being shouted at) was the most prevalent type of violence among these women (43). Following psychological violence, physical violence (slapping) and sexual violence were the next common types of violence among infertile women, respectively (44). The ratio of violence exerted against infertile women had relationships with their partner's unemployment, forced marriage (45), partner's addiction (46), and their age (eg, when women were young) (43).

Investigation on the findings from the studies on sexual function of infertile women revealed that compared to fertile women, sexual dysfunction is higher in infertile women (47, 48). In the study conducted by Khodarahimi et al (2014), infertile women possessed less sexuality, arousal, lubricant, orgasm, and sexual satisfaction compared to fertile women (47), to the extent that prevalence of sexual dysfunction reported in infertile women was approximately 71% to 87% (49, 50). Since pregnancy and childbearing is perceived as the result of a successful sexual intercourse by many, infertility is perceived to be stemming from repugnance and indisposition to establish sexual intercourse.

On the other hand, prescribing a certain sexual program for infertile couples in the process of infertility treatment occasionally made sexual intercourse lose its delightful nature and become merely as a means for fertility. Despite the fact that several studies reported high prevalence of sexual dysfunction, the research results were not in line with one another in this respect. For instance, Zare et al indicated that there was no significant difference between infertile women and fertile women in terms of sexual problems (51). The reason for this may be the fact that infertility, its long-term treatment process, and lack of social support for infertile couples may lead to more proximity and intimacy in infertile couples.

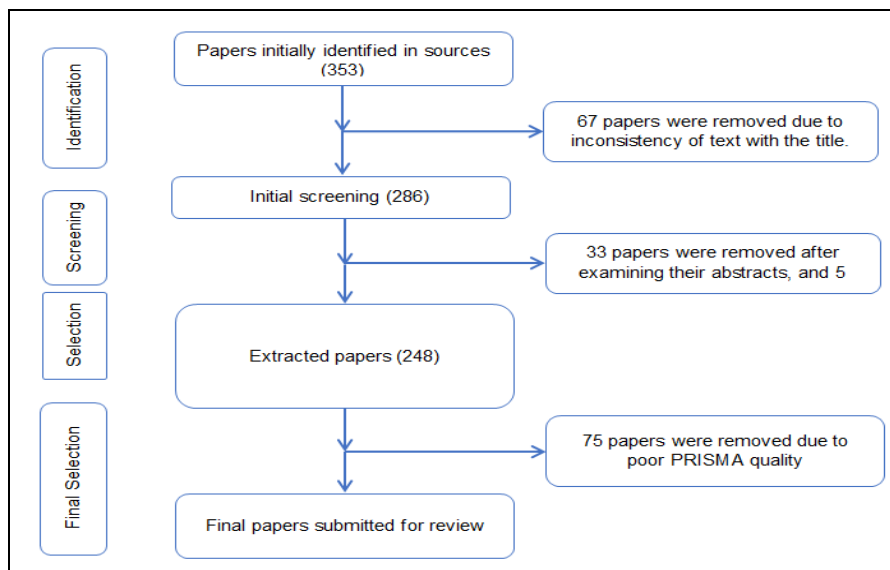


Figure 1. Flowchart of the Search Phases to Select Studies for Systematic Review

**Table 1. Characteristics of the Studies on Quality of Life in Infertile Women**

| <b>Author, Year<br/>Location of<br/>study</b> | <b>Sampling<br/>method,<br/>Sample size</b> | <b>Study type</b>        | <b>Result</b>  |
|---|---|--------------------------|--|
| Ghasemzad et al., 2007<br>Tabriz (22)         | Simple sampling, 192                        | Cross-sectional          | 12% of the infertile women had a poor quality of life.   |
| Alami et al., 2008<br>Tehran (23)             | Continuous sampling, 147                    | Descriptive              | 48.3%, 36.1%, and 15.6% of the infertile women had either good, average, or poor quality of life, respectively. Moreover, there was a direct relationship between quality of life and the intensity of inclination to have children  |
| Goli et al., 2012<br>Isfahan (24)             | Availability sampling, 137                  | Cross-sectional          | 34%, 47%, and 19% of infertile women had either good, average, or poor quality of life, respectively. There were relationships between quality of life, partner's occupation, financial problems imposed by the treatments, ratio of treatment hopefulness, the intensity of inclination to have children, and the external forces from others to have children. |
| Amanelahifard et al., 2012<br>Ahvaz (25)      | Availability sampling, 186                  | Casual-comparative       | The quality of life in infertile women was lower than that of fertile women.   |
| Rashidi et al., 2012<br>Tehran (26)           | Simple sampling, 1028                       | Descriptive              | The quality of life in infertile women was lower than that of infertile men.   |
| Zamani et al., 2013<br>Kerman (27)            | Availability sampling, 90                   | Cross-sectional          | The quality of life in infertile women was lower than women with repeated history of miscarriage and fertile women.  |
| Farrokh Eslamlou., 2014<br>Urmia (28)         | Availability sampling, 120                  | Analytic cross-sectional | Infertile women had a lower quality of life compared to fertile women in social and psychological domains.   |
| Ghaheri et al., 2016<br>Tehran (29)           | Availability sampling , 125                 | Analytic cross-sectional | Life satisfaction resulting from reducing the anxiety led to an improvement in quality of life in infertile women.   |
| Navabi Rigi et al., 2016<br>Shiraz (30)       | Availability sampling, 162                  | Cross-sectional          | Quality of life in infertile women was not at an acceptable level. Furthermore, there were relationships between personal and social characteristics such as educational level, chronic disease history, and infertility reasons and quality of life.  |
| Maroufizadeh et al., 2016<br>Tehran (31)      | Simple sampling, 155                        | Cross-sectional          | Depression and anxiety affected the quality of life negatively in infertile women.   |

Table 2. Characteristics of the Studies on Depression in Infertile Women

| Author, Year<br>Location of study           | Sampling method,<br>Sample size | Study type                  | Result   |
|---|---------------------------------|-----------------------------|--|
| Ramezanzadeh et al., 2004 (32)<br>Tehran    | Simple sampling, 370            | Cross-sectional             | 40.8% of infertile women suffered depression. There was a significant relationship between depression and the reason for infertility, the length of infertility, women's education, and their occupation. Depression and anxiety were prevalent after 4-6 years of infertility, and severe depression was usually observed after 7-9 years of infertility. |
| Anvar et al., 2006<br>Fasa (33)             | Simple sampling, 100            | Cross-sectional             | 40% of infertile women had major depressive disorders. Amongst these women, 60% suffered severe, while 40% suffered mild to moderate depressive disorder.  |
| Noorbala et al., 2007<br>Tehran (34)        | Simple sampling, 300            | Descriptive cross-sectional | Depression score in infertile women was significantly higher than fertile women.   |
| Behdani et al., 2008<br>Mashhad (35)        | Simple sampling, 963            | Descriptive cross-sectional | Different degrees of depression were observed in 30.4% of infertile women.   |
| Haririan et al., 2010<br>Urmia (36)         | Simple sampling, 100            | Cross-sectional             | 58% of infertile women suffered from various degrees of depression. Amongst these women, 37% had mild, 10% had moderate, and 11% had severe depression symptoms. Moreover, there were relationships between the education level of patients and partners and their occupation, and the prevalence of depression.   |
| Baghiani Moghadam et al., 2011<br>Yazd (37) | Simple sampling, 300            | Descriptive                 | The rate of depression in infertile women was higher than infertile men.   |
| Peyvandi et al., 2011<br>Sari (38)          | Simple sampling, 200            | Cross-sectional             | 62% of infertile women had different degrees of depression, including mild depression (27.5%), moderate depression (25.5%), and severe depression (9%).  |
| Faal Kalkhoran et al., 2011<br>Tehran (39)  | Availability sampling, 60       | Comparative-descriptive     | Infertile women suffered more depression than fertile women. 46.7% of infertile women were depressed.  |
| Jamilian et al., 2012<br>Arak (40)          | Availability sampling, 294      | Case-control                | The rate of depression in infertile women was significantly higher than fertile women.   |

|   |                              |                             |  |
|---|------------------------------|-----------------------------|--|
| Amani-Vamarzani et al., 2013<br>Sari (41) | Systematic sampling,<br>70   | Analytic Descriptive        | The rate of depression in infertile women was significantly higher than fertile women.   |
| Zamani et al., 2013<br>Kerman (27)        | Availability sampling,<br>90 | Cross-sectional             | In comparison to fertile women, the score for depression and quality of life in infertile women was higher and lower than fertile women, respectively.   |
| Bakhtiari et al., 2014<br>Kermanshah (42) | Simple sampling, 160         | Descriptive cross-sectional | 66.2% of infertile women suffered different degrees of depression.   |
| Shadkam et al., 2017<br>Shiraz (43)       | Simple sampling, 200         | Descriptive                 | The rate of depression in infertile women was significantly higher than fertile women.   |
| Omani-Samani et al., 2018<br>Tehran (20)  | Simple sampling,<br>1506     | Cross-sectional             | The prevalence of depression in infertile couples (approximately 30.5%) was more than its prevalence in general population. The rate of depression in infertile individuals had relationships with a number of components including gender (being a woman), the length of infertility, successfulness/unsuccessfulness of previous therapies, and the reason for infertility (the person himself/herself or his/her partner was the reason for infertility). |

**Table 3. Characteristics of the Studies Conducted on Anxiety in Infertile Women**

| Author, Year<br>Location of study        | Sampling method,<br>Sample size | Study type                  | Result  |
|--|---------------------------------|-----------------------------|---|
| Ramezanzadeh et al., 2004<br>Tehran (32) | Simple sampling,<br>370         | Cross-sectional             | 86.8% of infertile women had anxiety. Anxiety had significant relationships with the duration of infertility and educational level of infertile women. However, there did not exist a significant relationship with the reason for infertility. Depression and anxiety were prevalent after 4-6 years of infertility. |
| Anvar et al., 2006<br>Fasa (33)          | Simple sampling,<br>100         | Cross-sectional             | 46% of infertile women had different degrees of anxiety disorders.  |
| Behdani et al., 2008<br>Mashhad (35)     | Simple sampling,<br>963         | Descriptive cross-sectional | The most prevalent psychological disorder in infertile women was general anxiety. The prevalence of other anxiety disorders was 11.8%.  |

|  |                            |                             |   |
|--|----------------------------|-----------------------------|---|
| Peyvandi et al., 2011<br>Sari (38)         | Simple sampling, 200       | Cross-sectional             | 49.5% of infertile women had different anxiety degrees, including mild anxiety (19%), moderate anxiety (17.5%), severe anxiety (11%), and very severe anxiety (2%). Moreover, there were significant relationships between marital satisfaction, depression severity, and anxiety of infertile women. |
| Jamilian et al., 2012<br>Arak (40)         | Availability sampling, 294 | Case-control                | Anxiety score in infertile women was significantly higher than fertile women.   |
| Faal Kalkhoran et al., 2011<br>Tehran (39) | Availability sampling, 60  | Comparative-descriptive     | Anxiety of infertile women was higher than fertile women. 50% of infertile women had normal anxiety, 46.6% had mild to moderate anxiety, and 33.3% had severe anxiety.  |
| Sayadpour et al., 2017<br>Tehran (44)      | Persuasive sampling, 139   | Casual-comparative          | Infertile women suffered higher levels of anxiety compared to fertile women. Furthermore, fertility demonstrated 36% of the variance of anxiety difference between fertile and infertile women.   |
| Bakhtiari et al., 2014<br>Kermanshah (42)  | Simple sampling, 160       | Descriptive cross-sectional | 77.3% of infertile women suffered different degrees of anxiety.   |

**Table 4. Characteristics of the Studies Conducted on Social Support in Infertile Women**

| Author, Year<br>Location of<br>study   | Sampling method,<br>Sample size | Study type      | Result   |
|--|---------------------------------|-----------------|--|
| Ehsanpour et al., 2009<br>Isfahan (45) | Simple sampling, 150            | Descriptive     | There was a significant relationship between the stress related to infertility therapies and the rate of social support.   |
| Keramat et al., 2013<br>Hamedan (46)   | Simple sampling, 385            | Cross-sectional | There are were relationships between social support, quality of life, self-esteem, and sexual satisfaction. The level of social support in infertile couples with low income was less than those with higher levels of income. |
| Ezzati et al., 2013<br>Tehran (47)     | Availability sampling, 400      | Cross-sectional | Stigma reception and lack of family support, as two variables of environmental system, make a person vulnerable to the psycho-cognitive consequences of infertility, such as depression.                                       |
| Hosseini et al., 2013<br>Tehran (48)   | Availability sampling, 201      | Cross-sectional | Social support was the main predictor of marital adjustment in infertile women.  |
| Hasanpour et al., 2014<br>Tabriz (49)  | Simple sampling, 345            | Descriptive     | The best predictor of psychological health in infertile women was the social support received from families.   |



|                                      |                               |                    |   |
|--------------------------------------|-------------------------------|--------------------|---|
| Besharat et al., 2015<br>Tehran (50) | Persuasive sampling,<br>200   | Descriptive        | The correlation between social support and adjustment to infertility was positive and significant.  |
| Sahraian et al., 2015<br>Tehran (51) | Availability sampling,<br>100 | Casual-comparative | When women were the reason for infertility, they received less social support, compared to when their partners were the reason. Moreover, there was a relationship between the rate of social support received by infertile women and their marital satisfaction. |
| Abbasizade et al., 2016<br>Yazd (52) | Availability sampling,<br>74  | Descriptive        | There was a significant relationship between the perceived social support in women suffering from infertility and health-related quality of life.   |
| Yazdani et al., 2016<br>Isfahan (53) | imple sampling, 266           | Cross-sectional    | The correlation between marital satisfaction and the perceived social acceptance was positive and significant in infertile women.   |

**Table 5. Characteristics of Studies Conducted on Violence against Infertile Women**

| Author, Year<br>Location of<br>study              | Sampling method,<br>Sample size | Study type                  | Result   |
|---|---------------------------------|-----------------------------|--|
| Tabrizi et al., 2010<br>Mashhad (54)              | Simple sampling, 200            | Descriptive                 | Psychological, physical, and economic violence against infertile women was higher than fertile women.  |
| Etesami Pour & Banihashemian. 2011<br>Jahrom (55) | Simple sampling, 200            | Casual-comparative          | The ratio for exerted psychological, physical, and economic violence against infertile women was higher than fertile women.  |
| Behboodi Moghadam et al., 2010<br>Tehran (56)     | Simple sampling, 400            | Cross-sectional             | 33.8% of infertile women experienced psychological violence, while 14% of these women experienced physical violence. There were relationships between partner's unemployment and forced marriage, and psychological and physical violence. |
| Ardabily et al., 2011<br>Tehran (57)              | Simple sampling, 400            | Cross-sectional             | 61.8% of infertile women experienced violence due to infertility. The most prevalent types of violence were psychological violence, physical violence, and sexual violence, in respective order.   |
| Sheikhan et al., 2013<br>Tehran (58)              | Availability sampling,<br>400   | Descriptive cross-sectional | 47.3% of infertile women were sexually assaulted, which was in correlation with the rate of income, wanted/unwanted marriage, smoking, Opium and other drugs consumption, ethnicity, and the amount of the partner's income.               |

|  |                                      |                          |  |
|--|--------------------------------------|--------------------------|--|
| Farzadi et al., 2014<br>Tehran (59)          | Consecutive convenient sampling, 200 | Cross-sectional          | Psychological violence was the most common type of violence against infertile women, to the extent that approximately 82% of infertile women had experienced at least one type of psychological violence. Abuse, humiliation, and being shouted at were the most common psychological violence against infertile women. The most prevalent type of physical violence reported (in 37% of infertile women) was being slapped. |
| Moghaddam Tabrizi et al., 2016<br>Urmia (60) | Simple sampling, 384                 | Analytic descriptive     | There was a direct relationship between the age of infertile women (and their partners) and violence. Infertile women with partner's education level of lower and elementary education, and those infertile women with lower economic bases were more exposed to violence. Women faced more violence as the duration of marriage and infertility awareness increased.  |
| Alijani et al., 2018<br>Mazandaran (61)      | Consecutive sampling, 379            | Cross-sectional          | 88.9% of infertile women had experienced domestic violence. Psychological violence was the most common type of violence in this respect. The risk factors affecting violence against women were smoking (by their partners) and their age (i.e. when women were young).  |
| Rahnavardi et al., 2019<br>Urmia (62)        | Availability sampling, 400           | Analytic Cross-sectional | The rate of sexual violence against infertile women was 60%, which was higher than fertile women. There were relationships between violence and sexual violence, marriage duration, women's education, and partner's occupation and addiction.   |

**Table 6. Characteristics of the Studies Conducted on Sexual Dysfunction in Infertile Women**

| Author, Year<br>Location of study                    | Sampling method,<br>Sample size | Study type      | Result  |
|--|---------------------------------|-----------------|---|
| Khademi et al., 2008<br>Tehran (63)                  | Availability sampling, 200      | Cross-sectional | Amongst infertile women, 33.3% had sexuality disorder, 80.2% had sensation-arousal disorder, 71.6% had lubricant-arousal disorder, and 48% had pain disorder. Factors such as age, stress, and general health were capable of influencing sexual function in women. |
| Alirezaee et al., 2014<br>Mashhad (64)               | Availability sampling, 255      | Cohort          | Sexual self-efficacy in fertile women was higher than infertile women. Undesirable sexual function in infertile women was 71.85%, which was significantly less than fertile women.  |
| Aghamohammadian Sharbaf et al., 2014<br>Mashhad (65) | Availability sampling, 200      | Descriptive     | There was a negative and significant relationship between perfectionism dimensions and sexual function in infertile women. In other words, the rate of sexual function in infertile women is in inverse proportion to the rate of their perfectionism.              |

|  |                                |                                    |   |
|--|--------------------------------|------------------------------------|---|
| Pakpour et al., 2012<br>Zahedan, Ahvaz,<br>Tehran, Qazvin,<br>Gilan (66) | Availability sampling,<br>604  | Cross-<br>sectional                | Compared to fertile women, sexual dysfunction in infertile women was higher. Among the risk factors of sexual dysfunction in infertile women were age (being old), depression, secondary infertility, level of education, and academic education of their partners. |
| Jamali et al., 2014<br>Jahrom (67)                                       | Availability sampling,<br>502  | Cross-<br>sectional                | The prevalence of sexual disorder was 87.1% in infertile women. Obesity and overweight had negative effect on sexual function of infertile women.   |
| Khodarahimi et al.,<br>2014<br>Shiran (68)                               | Persuasive sampling,<br>100    | Cross-<br>sectional                | In comparison with fertile women, infertile women possessed less sexuality, arousal, lubricant, orgasm, and sexual satisfaction.  |
| Fahami et al., 2015<br>Isfahan (69)                                      | Simple sampling, 64            | Trial study                        | Educating communication skills increased the sexual function in infertile women.  |
| Bokaie et al., 2015<br>Yazd (70)   | Persuasive sampling,<br>15     | Qualitative                        | Infertility had a negative effect on the sexual function of infertile women.  |
| Mirblouk et al., 2016<br>Rasht (71)                                      | Simple sampling, 296           | Descriptive<br>cross-<br>sectional | The prevalence of sexual dysfunction was 75.4% in infertile women. Sexual dysfunction in infertile women (especially in sexuality, arousal, and sexual satisfaction) was higher than its prevalence in fertile women.   |
| Zare et al., 2016<br>Mashhad (72)  | Class cluster<br>sampling, 220 | Cross-<br>sectional                | There was not a significant relationship between fertile and infertile women in sexual problems.  |
| Masoumi et al.,<br>2016<br>Hamedan (73)                                  | Availability sampling,<br>500  | Cross-<br>sectional                | Sexual satisfaction and marital satisfaction in infertile couples were more than fertile couples.   |

### Limitation

One of the most important social variables is the gender of individuals. In this study, only the psychological and social consequences of infertility on Iranian women were investigated through systematic review of researches in this field. However, men are also affected by the psychological and social problems of infertility, but very few studies have been conducted on the psychological and social effects of infertility in men.

### Conclusion

In this study, 6 major psychosocial consequences of infertility in Iran were identified using a systematic review on the research texts in this regard: quality of life, depression, anxiety, social support, violence, and sexual function. In addition to the needs and expectations of infertile couples from the infertility therapy process, dealing with their needs, psychological and social expectations, and decreasing negative sociopsychological consequences of infertility can improve the quality of life and enhance the efficacy of medical therapies.

### Acknowledgment

The authors would like to express their sincere gratitude to the authors whose papers were used in this systematic review. This paper is a part of a Ph.D. psychology dissertation by Haniye Zarif Golbar Yazdi (45835).

### Conflict of Interest

None.

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