

# The Impact of Group Counseling on Psychological Status of Iranian Infertile Women: A Systematic Review

Sanaz Mollazadeh (MSc)<sup>1</sup>, Nasim Shahrahmani (MSc)<sup>1</sup>, Masoumeh Sadeghi (PhD)<sup>2</sup>, Robab Latifnejad Roudsari (PhD)<sup>3,4</sup>

<sup>1</sup> PhD Student of Reproductive Health, Student Research Committee, Mashhad University of Medical Sciences, Mashhad, Iran

<sup>2</sup> Assistant Professor, Department of Epidemiology, School of Health, Mashhad University of Medical Sciences, Mashhad, Iran

<sup>3</sup> Professor, Nursing and Midwifery Care Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

<sup>4</sup> Department of Midwifery, School of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran

ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Review article</p> <hr/> <p><i>Article History:</i> Received: 23-Dec-2022 Accepted: 05-Jun-2023</p> <hr/> <p><i>Key words:</i> Group Counseling Infertility Iran Depression Anxiety Stress</p>	<p><b>Background &amp; aim:</b> Infertility counseling has become a professional method of counseling demanding specialized proficiency and qualification to address this crucial issue. Counseling can be done as individual, couples, or group counseling. This study intended to systematically review the published articles on the impact of group counseling on the psychological status of infertile women.</p> <p><b>Methods:</b> This systematic review was performed based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) from conception to April 14, 2023. English databases including Web of Science, Cochrane Library, Medline (via PubMed), Scopus, and ProQuest, as well as Persian databases of Magiran and SID, were searched independently by two researchers. Review Manager (Rev Man) version 5.3 and the Cochrane Risk of Bias (ROB) tool for randomized trials and JBI for clinical trials were used to assess the quality of articles.</p> <p><b>Results:</b> Out of the 1,264 retrieved articles from related databases, 1034 articles were screened. Ten clinical trials including 694 infertile women, were included in this systematic review. The results show that group counseling is one of the most effective methods for improving psychological status of infertile women.</p> <p><b>Conclusion:</b> The results of this study indicated that group counseling using different approaches is effective in improving the psychological status of infertile women. It is suggested to perform clinical trials with robust methodology, a larger sample size, and long-term follow-up to gain more generalizable results.</p>

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## Introduction

Infertility is known as a traumatic experience that threatens individuals, couples, families, and social stability in all cultures worldwide (1-2). Infertility is considered as a socio-psychological disaster and infertility counseling is mentioned as an essential part of the multidisciplinary approaches for infertility treatment (2). Infertility impacts approximately 10 to 12 percent of couples worldwide (3). Female factors account for

nearly 50% of all infertility cases, while male factors contribute to 20% - 30%, and the remaining 20% - 30% are due to a combination of male and female factors.

(4). Idiopathic infertility is the cause of 30% of all cases (5). Worldwide, infertility affects 60-80 million couples of reproductive age, with 13.2% of couples in Iran being affected (6). Primary infertility globally ranges from 0.6 to 3.4%, while secondary infertility ranges from

\* Corresponding author: Robab Latifnejad Roudsari. Professor, Nursing and Midwifery Care Research Center, Mashhad University of Medical Sciences, Mashhad, Iran. Tel: 00985138846730; Email: [latifnejadr@mums.ac.ir](mailto:latifnejadr@mums.ac.ir), [rlatifnejad@yahoo.com](mailto:rlatifnejad@yahoo.com)



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, 7.7 to 32.6% (7).

Some of the infertile women have dysfunctional opinions, high psychological distress and low quality of life (8). Not having children also causes stressful situations (9), and it can cause an extensive range of negative social, physical financial and psychological complications in couples including anxiety, anger, depression, isolation, frustration, shame, and low self-esteem (8). Psychological problems are approximately common in infertile couples, which can be influenced by many factors such as gender, culture, cause of infertility, length of infertility and treatment methods (10). Psychological reactions are defined as the response to environmental demands or pressures, which are understood as threatening conditions to individuals' abilities and resources and endanger their health (11). Infertility diagnosis and related treatment procedures are among the risk factors for psychological outcomes of infertility persist in 20% of infertile women and depression as well as anxiety in 20% - 40% of infertile women even after successful treatment (12). A systematic review found that infertility affects four aspects of a couples' life including marital relationships, mental health, quality of life and sexuality (13).

As an unplanned stressor, infertility diagnosis challenges the whole life of infertile couples because many couples do not have sufficient knowledge and skills to manage infertility properly. Therefore, in order to reduce these problems, infertile women should learn the essential skills through counselling, which help to enhance their knowledge and refine their lifestyle (14-15).

In recent years, infertility counseling has become a professional method of counseling demanding specialized proficiency and qualification. It addresses crucial issues and provides usual interventions to promote awareness for the specific counseling needs of couples and individuals suffering from infertility and undertaking medical treatments (2, 16). Infertility counseling compromises the chance to discover, explore and explain ways of living more pleasurably and creatively, when fertility deficiencies have been diagnosed (2).

Counseling could be conducted through different approaches including cognitive behavioral therapy (CBT), which is the most

widely used approach (17-18); acceptance and commitment therapy (ACT) that is a comparatively new form of CBT as well as mindfulness-based interventions, which are the common type of cognitive-behavioral therapy (19). Also, counseling can be done individually, or as couples or in groups (individual, couple or group counselling) (20).

It is needed to be bear in mind that counseling and psychotherapy are two fields that are often viewed to be the same and used interchangeably. The different definitions on both counseling and psychotherapy are evidence to this fact (21). Counseling may be considered as supportive work or as a venue for providing guidance to clients, whereas, psychotherapy is seen as a more in-depth form of treatment aimed at significant psychiatric disorders using a broad variety of techniques. In fact, the counselor seeks out the problems that have arisen and adopts solutions to solve them (22). "Counseling" is a brief treatment that could be done by health staff in fertility team targeting a specific situation, current problem or surface issue; while "psychotherapy" is a longer-term treatment that attempts to gain deeper insight into someone's problems and help with more deep-rooted difficulties that affects a client's life. So it needs more sophisticated psychological skills, which might be not available to the patients any time in fertility clinics. Therefore, to help physicians and health professionals working in fertility teams, it is important to understand to what extent counseling, particularly group counseling which is shorter and more cost effective than psychotherapy, would be helpful for infertile patients (22). The results of some studies that were conducted on the treatment of sexual problems or domestic violence in couples showed that when these consultations are done as group interventions, the results are better than when they are done individually (2, 20, 23). Gerald Coray in his book titled "Theory and Practice of Group counseling" has well shown the importance of conducting of counseling approaches in the form of group counseling (24). An important rationale for the effectiveness of counseling for infertile patients is the effect of "group" psychological support, because it assumes that infertile women feel lonely and consider their problem exclusive and so that cannot elaborate their concerns

everywhere with everybody, thus the group provides the safest place to calm down and discuss their unexpressed problems (25, 26).

Previous systematic reviews have mostly investigated the impact of psychological interventions including psychotherapy and counseling (16, 27-28). However, there are limited studies that systematically addressed the role of just counseling interventions in promoting infertile women's psychological health, and a systematic review that emphasizes the counselling intervention using a group framework has not been done so far. This study aims to review systematically the published articles on the impact of group counseling on the psychological status of infertile women. Perhaps the strengths and weaknesses of the published studies are identified and more comprehensive data can be obtained for both clinical practice as well as further studies in the future with appropriate strategies. Also, it may be clarified the importance and impact of group counseling compared to other approaches of counseling.

## Materials and Methods

### Study Selection

This systematic review was conducted according to guidelines from the Preferred Reporting items for Systematic Reviews and Meta-Analysis (PRISMA) statement. The existing study revised all controlled randomized clinical trials and clinical trials or quasi-experimental studies on the impact of group counseling on psychological status of infertile women. The PICO was used to classify components of clinical evidence, which included (i) Participants: Iranian women with a history of infertility who referred to infertility centers; (ii) Intervention: group counseling with or without any specific approaches of counseling; (iii) Control group: infertile women who received only routine care; (iv) Outcomes: psychological status including anxiety, depression, stress and mental health. It should be noted that in the present study, the focus of the study was on investigating the impact of group counseling only, and not psychological interventions which consist of numerous approaches including psychotherapy. Indeed, group counseling was one of the main search keywords and it is different with psychotherapy, although they might be applied

interchangeably. Therefore, all articles which focused on the effect of group counseling in their title or abstract or keyword were selected and included in this study.

### Data sources and search strategy

To find relevant studies, until April 14, 2023, international databases including Web of Science, Cochrane Library, Medline (via PubMed), Scopus, Magiran, SID as well as ProQuest were searched by two researchers independently without any time limit. To search English databases, keywords containing: group counseling OR counseling in combination with infertility were used, Iranian infertile women, infertile couples, anxiety, depression OR depressive disorder, stress, mental health and systematic reviews composed with their equivalents in MeSH and combining words with AND, OR functions were searched using search operators. The search was done only through Persian keywords, including group counseling, infertility, and systematic review; because some of the Iranian databases showed no sensitivity to search operators (AND, OR, NOT). Additional articles were identified by manually searching references of eligible retrieved articles. Using appropriate keywords, the search of different databases was conducted. At first, duplicate articles were removed. For any duplicate publications, the most relevant and complete versions were included. Then titles and abstracts of studies retrieved from databases, as well as those from other sources, were independently reviewed by two authors (S.M. and N. SH.) to identify studies that align with the objectives of this review. The full text of these articles were also assessed for eligibility. Some articles were removed because of various reasons, including: having a descriptive design, unrelated with title and being ineligible due to being book, document, review article and conference papers (Table 1).

### Data Extraction

Full texts of 10 included studies were reviewed and data were extracted by two researchers (S.M. and N. SH.) working together, and any disagreement was clarified by the third researcher (R.L.R.). Data related to the study were extracted including publication date, setting, study design, number of randomized participants, intervention, comparator,

**Table 1.** Characteristics of the Include Studies

Authors	Year		Study Period	Sample Size	Study Population	Intervention/ Treatment	Comparator	Instrument	Outcome variable	Result
Ehsan et al.	2019	Clinical trial	Five sessions twice a week for 90 minutes	90	Infertile women referred to Rooyesh Infertility Treatment Center in Karaj	Group counseling according to the guide line (BICA: British Infertility Counseling Association)	Routine care	Newton's fertility problem inventory (FPI) and gender role questionnaire (GRQ)	Stress	Reducing stress and also improving of gender role attitude
Hamzeh gardeshi et al.	2019	RCT	Six sessions of group counseling weekly for 6 weeks lasting 2 hours	50	Infertile women who underwent in vitro fertilization treatment for the first time in Sari	Group counseling	Routine care	Newton's standard questionnaire	Stress	Reducing the perceived infertility stress
Hossein panahi et al.	2020	RCT	Eight sessions weekly 90-minutes	54	Infertile couple referring to infertility Clinic in Sanandaj	Group counseling based on ACT	Routine care	General Health Questionnaire-28 (GHQ-28) and Fertility Quality of Life	Mental health	Effectiveness on mental health and quality of life
Kalhari et al.	2019	RCT	Eight sessions for 90 minutes a day; twice a week	90	Infertile women who underwent IVF in the infertility center of Fatemeh Hospital, Hamadan	Group counseling based on mindfulness	Routine care	Spielberger anxiety questionnaire	Anxiety	Reducing the apparent and hidden anxiety
Kalhari et al.	2020	RCT	Eight sessions 90-minute twice a week	90	Infertile women undergoing IVF treatment in an infertility center in Hamadan	Group counseling based on mindfulness-based	Routine care	Beck depression inventory (BDI)	Depression	Reducing depressive symptoms in infertile women under IVF treatment

Kheirkhan et al.	2014	Clinical trial	Four sessions lasting 2 hours; one day a week for each groups with 5 individuals	92	Infertile women who referred to infertility clinic of Tabriz Al-Zahra Hospital	Group counseling based on guideline of infertility psychology counseling	Routine care	Researcher-made Infertility Compatibility Questionnaire according to Glover et al. (35) Instrument	Adjustment	Increasing of adjustment to infertility
Khodakarami et al.	2020	RCT	four sessions 60- minute held one day a week for 4 weeks	104	Infertile women admitted to Fatemeh Hospital in Hamadan during.	Group counseling based on CBT	Routine care	Harry's Stress Assessment questionnaire	Stress	Effectiveness on stress mitigation and promotion of their mental health
Manouchehri et al.	2007	Quasi-experimental and repeated measures	Twenty sessions lasting 1.5 hours	14	Women underwent primary infertility treatment with female infertility agent	Group counseling based on CBT	Routine care	Mental health questionnaire SCI 90	Mental health	Decreasing of mental and psychological problems
Mokhtari sorkhabi et al.	2020	RCT	Six sessions 45- minute	60 couples	Infertile couple referred to the governmental center to infertility treatment	Group counseling	Routine care	Emotional level questionnaire for infertile patients (SCREEN IVF)	Emotional level	No affection on emotional level
Ordoni Avval et al.	2019	Clinical trial	Ten sessions lasting two-week period	50	Infertile women with a history of at least one year infertility who referred to Urmia Kosar infertility clinic	Group counseling based on CBT	Routine care	Newton's Infertility Stress questionnaire	Stress	Reducing the stress of infertility

CBT: Cognitive Behavioral Therapy / ACT: Acceptance and Commitment Therapy / BICA: British Infertility Counseling Association

outcomes, results, and then verified on a checklist planned by the research team.

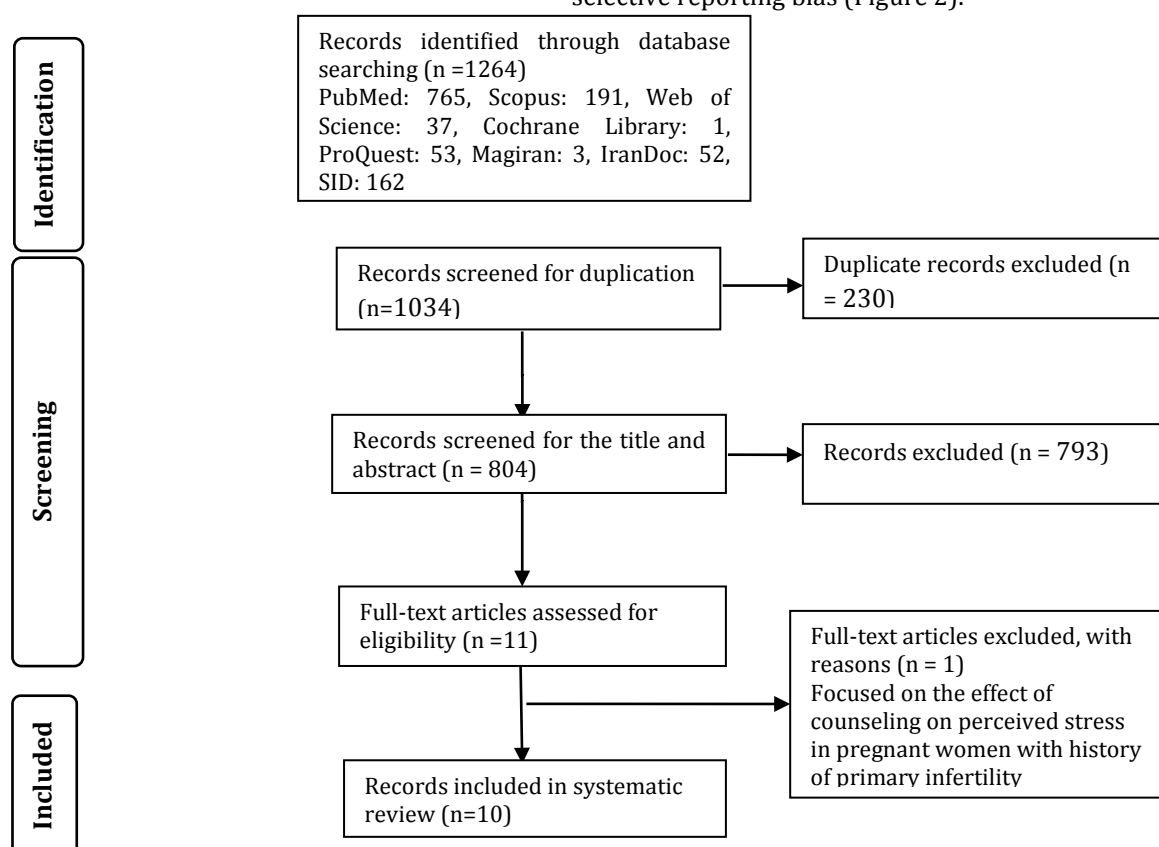
### Quality assessment

Two authors (S.M. and M.S.) independently assessed the quality of articles by evaluating the risk of bias based on the Cochrane risk of bias tool for randomized trials. Any discrepancies or disagreements were resolved through consensus with a third author (R.L.R.), who

acted as an arbiter to ensure the reliability and accuracy of the assessment.

### Risk of Bias assessment

As aforementioned, risk of bias was assessed based on Cochrane risk of bias tool for randomized trials (29), in terms of allocation sequence, allocation concealment, blinding of participants, personnel, and outcome assessors, incomplete outcome data, and selective reporting bias (Figure 2).



**Figure 1.** Study selection steps based on the PRISMA 2020 flow diagram

Considering the thresholds for converting the Cochrane Risk of Bias Tool (ROB) to the Agency for Healthcare Research and Quality (AHRQ) standards (good, moderate, and poor) the Cochrane ROB tool was used. By means of the Cochrane ROB tool, it is possible for a criterion to be encountered even when the section was

not technically part of the method. For example, a judgment that awareness of the allocated interventions was sufficiently prevented can be made even if the study was not blinded. In the ROB tool: Good quality means: all criteria met (i.e. low for each domain).



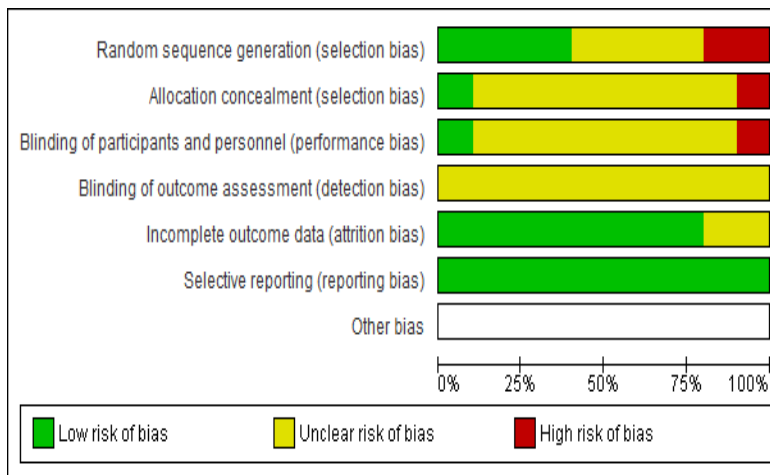


Figure 2. The graph of risk of bias

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Ehsan 2019	+	?	?	?	+	+	
Hamzehgardeshi 2019	+	?	?	?	+	+	
Hosseinpanahi 2020	+	+	+	?	+	+	
Kalhari 2019	?	?	?	?	?	+	
Kalhari 2020	+	?	?	?	+	+	
Kheirkhah 2014	-	?	?	?	+	+	
Khodakarami 2020	?	?	?	?	+	+	
Manouchhri 2007	?	?	?	?	?	+	
Mokhtari sorkhabi 2020	-	?	?	?	+	+	
Rabeipour 2019	?	-	-	?	+	+	

Figure3. Summary of risk of bias

Fair quality means: two criteria are unclear or one criterion is not met (i.e. high risk of bias for one domain), and the assessment that this was unlikely to have biased the outcome, and there of bias for one domain), and the assessment that this was probable to have biased the outcome, and there are significant limitations that could undermine the results.

**Results**

is no known significant limitation that could undermine the results. Poor quality means: two criteria are unclear or one criterion is not met (i.e. high risk

The present study extracted articles focused on the impact of group counseling on psychological status of Iranian infertile women. To compile the present study, first 1,264 articles were identified through databases according to the study question; among them, 230 duplicated articles were removed, 804 records screened for

the title and abstract 792 articles were excluded because of various reason, including: having a descriptive design, unrelated with title and being ineligible due to being book, document, review article and conference, from which 11 full-text articles were evaluated for eligibility. An article was excluded because it examined the effect of counseling on perceived stress in pregnant women with the history of primary infertility. Finally, 10 articles included in the systematic review (Figure 1).

Based on the results of the Cochrane ROB tool for randomized trials, the quality of all articles were poor except Hosseinpanahi et al. (2020) (29), which were fair (Table 1). All of articles were analyzed for risk of bias (Figures 2 & 3). The risk of random sequence bias was unknown in four studies (4, 26, 30, 31) and low in four studies (29, 32-34). Allocation concealment was low in study by Hosseinpanahi et al. (2020) (29) and high in study by Rabeipour et al. (2019) (31) and unknown in other studies (4, 26, 30, 32-36). The blinding status of study personnel and participants and also the risk of bias from blinding of outcome assessment were unknown in all studies except study by Hosseinpanahi et al. (2020) (29) and was high in study conducted by Rabeipour et al. (2019) (31). The risk of incomplete outcome bias was unknown in three studies (4, 26) and low in other studies (29-34). The risk of selective reporting bias was low in all studies (Figures 2, 3).

### Stress

Four of the studies were interventional studies by group counseling on stress of infertile women. Of these two studies of Khodakarami et al. (2020) (30) and Ordoni et al. (2019) (31) were performed by CBT approach (30, 31); however two other studies including Ehsan et al (32) and Hamzehgardeshi et al. (2019) (33) were group counseling without any specific approach (32, 33). In the studies by Ehsan et al. (2019) (32) (clinical trial with a sample size of 90 women) , Hamzehgardeshi et al. (2019) (33) (randomized control trial with a sample size of 50 women) and Ordoni et al. 2019) (31) (clinical trial with a sample size of 50 women) used Newton's standard questionnaire for data collection and in the study by Khodakarami et al. (2020) (30), (randomized control trial with a

sample size of 104 women) Harry's Stress Assessment questionnaire was used, instead. The results of all studies showed that group counseling is one of the most effective methods for reducing the stress of infertile women.

### Mental health

Two studies by Hosseinpanahi et al (2020) (29) (a randomized control trial using ACT approach with a sample size of 54 women) and Manouchehri et al. (2007) (26) (a quasi experimental using CBT approach on a sample size of 14 women) the impact of group counseling were investigated on mental health of infertile women;. In the study by Manouchehri et al. (2007) (26) the mental health questionnaire SCI 90 was used for collecting data and in the study by Hosseinpanahi et al (2020) (29), General Health Questionnaire-28 (GHQ-28) were used instead. The results of both studies show that group counseling based on either ACT or CBT is effective on mental health of infertile women.

### Emotional level

Mokhtari et al. (2020) (36) in a randomized control trial on a sample size of 60 infertile couples examined the effect of infertile couples in a randomized control trial on the emotional level of infertile couples. In their study emotional level questionnaire for infertile patients (SCREEN IVF) was used. The results of this study indicate that infertility group counseling along with couples therapy had no effect on infertile women's emotional level. This study indicated that in order to increase the emotional level of infertile couples, it is recommended to examine other counseling approaches with a greater number of counseling sessions.

### Other psychological status

#### Anxiety

Kalhari et al. (2019) (4) conducted group counseling based on mindfulness approaches in a randomized control trial on a sample size of 90 women to examine the effect of group counseling on anxiety. The results of this study indicated that group counseling based on the mindfulness approach is effective on reducing anxiety of infertile women.

#### Depression



Kalhari et al. (2020) (34) in a randomized control trial with a sample size of 90 women, studied the impact of mindfulness-based group counseling on depression in infertile women. In his study the Beck Depression Inventory (BDI) was used to collect data. The results of this study showed that group counseling based on mindfulness is able to decrease depressive symptoms in infertile women.

### Adjustment

Kheirkhah et al. (2014) (35) investigated the impact of group counseling on the adjustment of infertile women with infertility with a sample size of 92 women in a clinical trial. This study used an infertility compatibility questionnaire developed by Glover et al. (37). The results of this study indicated that group counseling enhances adjustment with infertility in infertile woman.

### Discussion

The process of group counseling, is an opportunity for women with similar problems to be present to discuss their problems and benefit from the experiences of other members (14). Patients benefit from group therapy or group counseling when a trusting relationship with respect and acceptance is established between them and the therapist (38).

Throughout the training of infertility counseling, the progress of group work or group counseling is usually stimulated by requests from couples or individuals, who wish to meet with others in similar situations. Such educational groups can be concerned with sharing experiences, improving communication skills, learning relaxation techniques, receiving information, or providing other forms of psychological support compared to couples or individual counseling (39, 40). For this reason, in this review, the focus was made only on group counseling, no matter whatever approaches was used.

According to the result of this systematic review all studies that investigated the impact of group counseling on the stress of infertile women's stress showed that group counseling is one of the most effective methods for reducing of infertile women's stress (30-33). The results of a systematic review by Hamzehgardeshi et al. (2019b) found that

counseling techniques including group counseling and practical methods could be helpful in altering attitudes, thought and beliefs of infertile couples (41). Therefore, counseling methods could be effective for the health of individuals beside other infertility treatment. The systematic review by Yorulmaz et al. (2016) indicated that cognitive-behavioral group therapy, designed for psychological distress in women with infertility, is effective in reducing stress, anxiety, depression, and related psychological problems (42). Overall, it can be concluded that group counseling for infertile women has a positive effect on their psychological well-being. The results of present systematic review are consistent with the results reported by Hamzehgardeshi et al. (2019a) and Yorulmaz et al. (2016) (33, 42). Conversely, the results of another systematic review and meta-analysis by Abdollahpour et al. (2021) indicated that there was no significant difference between stresses of patients receiving CBT as compared to the control group. They mentioned that a probable explanation could be the lack of sensitivity of the stress measurements used. They also suggested that future studies need to examine the difference between the gender, type of counseling and the number of sessions and duration of them and the duration of the infertility in different study groups (39). Also, the result of Mokhtari et al. (2020) showed that infertility group counseling along with couple therapy had no effect on infertile women's emotional level. This study indicated that in order to increase the emotional level of infertile couples, it is recommended to examine other counseling approaches with larger number of counseling sessions (36).

The results of the studies conducted by Hosseinpanahi et. al (2020) and Manouchehri et. al. (2007) showed that group counseling is effective on mental health of infertile women (29, 26). The results of a meta-analysis revealed that comparison between ACT and CBT did not show any significant differences between these approaches. The findings indicated that ACT is more effective than treatment as usual or placebo and is also effective in treating anxiety disorders, addiction, depression and also somatic health problems (25).

The results of study carried out by Kalhori et al. (2019) showed that group counseling based on mindfulness is effective on reducing anxiety of infertile women (4). Also, The results of study by Kalhori et al. (2020) showed that group counseling based on mindfulness is able to decrease depressive symptoms in infertile women (34). Also, the findings of another study showed that cognitive behavioral group therapy (CBGT) to infertile women reduces the infertility-related psychosocial complications experienced by infertile women and improves women's infertility-related stress, depressive and anxious thoughts as well as their mental health and general health status (43).

Therefore, to apply the results of these studies, further studies with stronger methodology and sufficient sample size and long-term follow up in order to consider the effect of group counseling with different approaches on psychological status of infertile women is recommended. It could be suggested to the infertility settings to compensate shortage or lack of counselling services, in order to provide psychological support for infertile couples so that couples have more chances for positive thinking and being more stable in terms of psychological status (44).

Over all, in infertile women psychological disorders intensify the problems through a vicious circle. Infertile women with help of group counselling can strengthen their ability to cope with their problems. Obviously, the group counselling through cooperation of gynaecologist, midwifery counsellors and psychologist in counselling sessions plays a crucial role in decreasing the psychological problems associated with infertility.

One of the weaknesses of the study is the relatively low generalizability of the findings, as all studies were conducted in the Iranian context. Also the tools or questionnaires which were used to collecting data were different in all studies except studies of Ordoni et al. (2019), Ehsan et al. (2019) and Hamzehgardeshi et al. (2019a) that used Newton's standard questionnaire to measure psychological variables (31, 32, 33). Blinding personnel and participants, as well as, the blinding of outcome assessment were not reported in most of the

studies. The quality of most studies were poor and just one study had fair quality.

## Conclusion

Our results showed that group counseling with different approaches of counseling were effective in improving psychological status of infertile women. It is recommended to conduct clinical trials with more robust methodology and larger sample size and long-term follow up in various communities with different sociocultural contexts to achieve more generalizable results.

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## Conflicts of interest

Authors declared no conflicts of interest.

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## Ethical approval

The study was approved by the Local Research Ethics Committee, Mashhad University of Medical Sciences, Mashhad, Iran (Code of ethics: IR.MUMS.NURSE.REC.1401.035).

## Authors' contributions

SM and NSH carried out the database search and study selection. SM and MS performed the quality assessment of the studies. SM and NSH performed the data extraction from the studies. RLR supervised the database search, study selection, quality assessment of the studies, and data extraction. SM prepared the draft of the manuscript. RLR and MS revised the manuscript critically. All the authors read and approved the final manuscript.

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