Effectiveness of Integrated Psychological Counseling With Couple Therapy Approach on Quality of Life of Infertile Women

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ABSTRACT

Introduction: Infertility has biological and psychological effects on various aspects of the infertile couple’s life.

Objective: This study aimed to investigate the effectiveness of integrated psychological counseling with a couple therapy approach on the quality of life of infertile women.

Materials and Methods: This clinical trial was conducted on 60 couples (30 couples in the intervention and 30 in the control group) referred to Infertility Center in Kerman City, Iran, from October to December 2018. They were assigned to intervention and control groups with available sampling and block allocation method. The intervention group received six group counseling sessions. The subjects completed the Fertility Quality of Life (FertiQoL) questionnaire before and after the intervention. It has 24 items specific to infertility that cover four subscales of the QoL (emotional, mind-body, relational, and social). Data analysis was conducted by paired t test, Chi-square test, and Mann-Whitney test. P values less than 0.05 were considered significant.

Results: The Mean±SD ages of the participants were 33.25±5.89 and 33.53±5.46 in the intervention and control groups, respectively. Results showed significant differences between the Mean±SD of the mind-body subscale of the intervention group (88.5±6.39) and that of the control group (69±12.24), between the social subscale of the intervention group (73.75±6.71) compared to that of the control group (54.5±12.29) at the post-test (P=0.001). However, no significant change was seen in the relational subscale of intervention (52.25±6.25) compared to the control group (57.25±12.25) (P=0.060). Results showed a significantly higher FertiQoL total score for the intervention group (70.56±6.49) compared to the control group (57.76±12.26) at the post-test (P=0.001).

Conclusion: The results indicated that integrated psychological counseling could improve the quality of life among infertile women. Therefore, it can lead to more satisfaction and cooperation in infertility treatment.
Highlights

- Infertility is a stressful situation that can cause psychological stress and reduce the quality of life.
- Psychotherapy is a reliable alternative to promote the mental health of infertile women.
- Integrated psychological counseling could promote mind and body, social, and emotional dimensions of quality of life.
- Counselling did not change the relational dimension of quality of life.

Plain Language Summary

This study aimed to investigate the effectiveness of integrated psychological counseling with couple therapy approach on the aspects of the quality of life among infertile women. Couples often describe infertility as a stressful situation that can cause psychological stress, personal and social suffering, and reduce their quality of life. Studies have shown that psychotherapy is a reliable alternative to promote the mental health of infertile women. Also, changing couples’ perceptions of the problem and increasing their positive emotions and quality of life will increase the success of treatment methods. The results showed that integrated psychological counseling could promote all quality of life subscales (mind, body, emotional, and social) except the relational subscale. Considering psychological counseling as an essential part of infertility treatment may provide better results.

Introduction

Infertility has been defined as an inability to conceive despite regular sexual intercourse for more than a year without the use of contraceptives. The worldwide prevalence of infertility is predicted to be around 15% of all sexually active couples [1, 2]. Infertility affects various aspects of the infertile couple’s life [3]. This approach affects about 80 million people from all over the world. The incidence of depression and anxiety in these couples is significantly higher than in the fertile group and the general population [4]. The prevalence of one-year infertility in developed and less developed countries is estimated to be 3.5% and 16.7%, respectively. In Iran, the prevalence of primary infertility is higher than the global average. In a survey of the Iranian women’s community aged 20 to 40 years, the prevalence of primary infertility was estimated at 20.2%, 12.8%, and 9.2%, according to clinical, epidemiological, and demographic definitions, respectively [5].

Couples often describe infertility as a stressful situation that can cause psychological stress, personal and social suffering, social consequences, and become an identity problem for many women, especially in the sociocultural context. Childless women often face ridicule, verbal abuse, discrimination, and humiliation from family members and relatives [6]. About 32% of women in early infertility stages may be at risk for mental health problems [7], and this event affects the lives of about 15% of couples in advanced societies [8]. Severe adverse reactions to infertility can be seen in infertile women in the form of sadness, denial, sexual and personal incompetence, self-esteem threats, marital distress, and problems in relationships with others [9].

Reproductive aid therapies may affect infertile people’s quality of life, exposing them to more anxiety and emotional problems than others [10]. Quality of Life (QoL) is an individual’s understanding of his or her position in life regarding the cultural and value systems in which he or she lives. QoL is related to one’s goals, expectations, standards, and concerns [11]. In addition, quality of life as a multidimensional factor includes the cognitive, behavioral, welfare, and emotional capacities necessary to perform family, social, and professional roles and is directly associated with their high prevalence of infertility requires the treatment self-esteem, social support, sexual satisfaction, and marital satisfaction [12, 13]. The high prevalence of infertility requires the treatment of stress and the mental health of these couples. Studies have shown that psychotherapy is a reliable alternative to promote the mental health of infertile women [2, 3]. Counseling help couples process their feelings and reach a situation where they feel comfortable and have a quality life. Also, reducing negative emotions and increasing positive emotions and QoL may provide the necessary emotional environment for patients to effectively achieve a successful pregnancy [14]. Positive
group psychotherapy can be introduced as a solution to increase life satisfaction and increase the quality of life in infertile women [15]. Different studies have reported the effect of psychotherapy on improving satisfaction and quality of life in infertile women [15-17]. However, there was no evidence for using standard guideline-based infertility counseling with a couple therapy approach. It is necessary to use specific and effective counseling to reduce the psychological and social pressures of infertile women. Therefore, the present study was designed to investigate the effectiveness of integrated psychological counseling with couple therapy approach on aspects of the quality of life among infertile women.

Materials and Methods

This randomized clinical trial was conducted from October to December 2018 in special services for infertility in Kerman Province, Iran, with welcoming couples from neighboring provinces. The inclusion criteria for couples included infertile women with primary infertility (no matter the cause of infertility) who were referred for treatment for the first time, did not receive psychiatric or psychological treatment and similar treatments, and were willing to participate in the study. The exclusion criteria included the occurrence of pregnancy spontaneously during counseling sessions, couples being absent for two sessions of six counseling sessions, participating in other counseling treatment simultaneously.

According to the effect size of 0.51, based on the difference between the mean score of life satisfaction after the intervention in the two research groups in the Seyedi study [18] with a 95% confidence interval, and 80% test power, the sample size was estimated 30 couples. So, 30 couples took part in the intervention and 30 couples in the control group (totally 120 participants). Sampling was done with the available sampling method. Due to the drop in samples, sampling continued until the designated sample size was reached, and new couples were re-entered according to inclusion criteria for the number of samples excluded. During the intervention, 3 couples did not attend all the sessions due to the reasons for traveling, and 2 couples were excluded due to the absence of their husbands (5 couples in total). However, new couples who met the criteria entered the study to replace these people. In the control group, there were no dropouts during the study (Figure 1).

The data collection tools included a demographic questionnaire gathering information about age, gender, level of education, occupation, duration of non-pregnancy prevention, duration of contraception, method of pre-

vention, cause of infertility (female or male), and a history of psychiatric problems before the infertility problem.

The Fertility Quality of Life (FertiQoL) questionnaire was also used to measure the quality of life. The FertiQoL questionnaire is an international and authoritative questionnaire containing 24 specific fertility items with four subscales of the QoL (6 items per subscale). The four subscales were used in this study as follows: emotional, mind-body, relational, and social. Each of these four subscales is measured on a 5-point Likert scale [19].

The subscale of mind-body refers to the effect of infertility on physical health, cognition, and behavior. The emotional subscale evaluates the impact of infertility on emotions such as sadness or unhappiness. The relational and social subscales are used to determine the effect of infertility on participation and social aspects, respectively. Items of these subscales are randomly presented in the questionnaire and are given on a scale of 0 to 4 points. Scale scores and FertiQoL are calculated and converted to achieve a range of 0 to 100. A higher score on the whole scale or one of the subscales indicates a higher quality of life [19, 20]. Since the FertiQoL questionnaire was widely used in other research abroad and Iran, its validity and reliability were confirmed [13, 21, 22]. Ma’roufizadeh et al. determined the validity and reliability (factor analysis) of the FertiQoL questionnaire, which shows that the questionnaire is suitable for Iranians [23].

After selecting the samples in the first step with the available method, the samples were randomly divided into the intervention and control groups. After random allocation sampling and performing pretest for both groups, integrated psychological counseling was held for couples in the intervention group. A trained midwife conducted counseling sessions, and a physician with a PhD degree in guidance and counseling supervised the intervention sessions. The duration of each session was 45 minutes. Six sessions [24] were held in a suitable room at the infertility center. The content of counseling sessions, combination of psychological training, supportive counseling, and cognitive-behavioral counseling [25] are presented in Table 1. Each counseling session was carried out with 8-12 people (4-6 couples). First, the purpose of each session was explained. Then, the new topics were taught, useful techniques were practiced, and ambiguities were answered. Home practice was determined at the beginning of the next session, and the couples were asked how they did their homework. They were asked to practice relaxation techniques at home as per the instructions received and coping techniques.
Control group participants were selected exactly like the intervention group. Each eligible individual was selected from the infertility unit center. The purpose of the study was explained to them, and they were included in the study after providing written informed consent. At the end of the last session, three weeks after the pre-test, the post-test was taken from both groups. The control group received routine treatment during integrated psychological counseling for couples in the intervention group. To observe the ethical aspects after the post-test, a summary of the consultation sessions was given to the control group in a pamphlet.

The study data were processed and analyzed with IBM SPSS Statistics for Windows, version 24 software. The normality of data was analyzed using the Kolmogorov-Smirnov test. Due to the normal distribution of the data, before and after in each group, a paired t test was used to compare the mean scores in the group. As the distribution of data after the intervention was not normal, the Mann-Whitney test was used for analysis between groups. P values less than 0.05 were considered significant.

### Results

The participants in this study were divided into 3 groups of 20-29, 30-39, and 40-50 years. The Mean±SD age of the participants in this study was 33.25±5.89 and 33.53±5.46 years in the intervention and control group, respectively. There was no statistically significant differ-

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### Table 1. Content of integrated psychological counseling sessions

| Session | Contents |
|---------|----------|
| 1<sup>st</sup> | Outlining sessions’ goals, introducing the female and male genital system, fertility mechanism, and causes of infertility. |
| 2<sup>nd</sup> | Acquaintance with Assistant Reproductive Therapies (ART), benefits and side effects. |
| 3<sup>rd</sup> | Acquaintance with mental disorders caused by infertility problems. |
| 4<sup>th</sup> | Acquaintance with all possible supporting systems during infertility. |
| 5<sup>th</sup> | Training enriching relationships, relaxation, and coping techniques. |
| 6<sup>th</sup> | Decision-making about therapy continuation, stopping and replacement of options, and parenting counseling. |

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### Table 2. Distribution of the characteristics of the intervention and control group samples

| Variables                  | No.(%)/Mean±SD | P*       |
|----------------------------|----------------|----------|
|                            | Intervention Group | Control Group |       |
| Occupation                 |                |            |        |
| Employee                   | 7(23.3)        | 5(16.6)   | 0.256  |
| Housekeeper                | 23(76.6)       | 25(83.3)  |        |
| Educational level          |                |            |        |
| Under diploma              | 8(26.7)        | 8(26.7)   |        |
| Diploma                    | 12(40.0)       | 13(43.3)  | 0.361  |
| Academic                   | 10(33.3)       | 9(30.0)   |        |
| The birth control method   |                |            |        |
| None                       | 6(20.0)        | 4(13.3)   | 0.121  |
| Discontinuous method       | 20(66.6)       | 23(76.6)  |        |
| Estrogen tablet            | 4(13.3)        | 3(10.0)   |        |
| Duration of infertility (m)| 39             | 42        | 0.436  |
| Age (y)                    | 33.25±5.89     | 33.53±5.46| 0.127  |
| Duration of contraceptive use (m)| 12.02±4.79 | 12±4.37  | 0.421  |

* The Chi-square test
ence between the mean ages of the two groups. Also, based on the self-report, none of the subjects reported a history of psychiatric illness (depression/obsession/anxiety) before infertility (Table 2).

Comparing the mean quality of life of infertile women in the intervention (59.70±13.04) and control (58.15±12.39) groups showed that the quality of life in both groups did not differ before counseling (P=0.550). After the consultation, the Mean±SD scores of quality of life in the intervention and control group were 70.56±6.49 and 57.76±12.26, respectively, which was statistically significant (P=0.001). Also, the quality of life score in the intervention group before and after counseling was different, which was statistically significant (P=0.001). The results show the improvement of quality of life in the intervention group compared to the control group. But there was no statistically significant difference between pretest and posttest in the quality of life scores in the control group.

Statistical analysis results showed that the subscales of the mind-body, social, and emotional quality of life improved following infertility counseling in the intervention group (P=0.001), but it did not change in the relational subscale (P=0.060). There was no change in these subscales in the control group (Table 3).

### Discussion

The results showed that integrated psychological counseling could improve the quality of life of infertile women. The findings of the present study are in line with the results of previous research, including the study of Hakim et al., who investigated the psychological counseling effects to prepare couples for assisted reproduction aids [26] and the study of Li et al., who examined the impact of a mindfulness-based intervention on the quality of life, fertility rate and pregnancy among women exposed to the first In Vitro Fertilization (IVF). All interventions improved mental health and quality of life [27]. Counseling plays a positive and supportive role by advising in individual, social, psychological, and other fields to solve

| Subscales | Time         | Mean±SD Intervention Group | Mean±SD Control Group | P*       |
|-----------|--------------|----------------------------|-----------------------|----------|
| Mind-Body | Before the consultation | 67.5±13.08 | 68.2±12.56         | 0.001    |
|           | After the consultation  | 88.5±6.39 | 69±12.24           |          |
|           | P**           | 0.001      | 0.991              | -        |
| Emotional | Before the consultation | 57.75±12.92 | 55±12.37         | 0.001    |
|           | After the consultation  | 73.75±6.71 | 54.5±12.29         |          |
|           | P**           | 0.001      | 0.853              | -        |
| Relational| Before the consultation | 55.2±13.1  | 57.25±12.22        | 0.242    |
|           | After the consultation  | 52.25±6.52 | 57.25±12.25        |          |
|           | P**           | 0.06       | 0.941              | -        |
| Social    | Before the consultation | 65.7±13.06 | 63±12.41           | 0.008    |
|           | After the consultation  | 78±6.34   | 60.5±12.27         |          |
|           | P**           | 0.001      | 0.382              | -        |
| Total     | Before the consultation | 59.7±13.04 | 58.15±12.39        | 0.550    |
|           | After the consultation  | 70.56±6.49 | 57.76±12.26        | 0.0001   |
|           | P**           | 0.0001     | 0.896              | -        |

* The Mann-Whitney test; ** The paired t-test

**Table 3.** Comparing subscales of quality of life in the intervention and control group before and after the counseling

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the problems of its clients and includes performing vital services to provide helpless people and so on.

Quality of life is a multi-faceted, relative concept influenced by time, place, individual and social values. Factors affecting it vary depending on time and place, and cultural conditions [28]. It includes well-being, social functioning, physical health, the patient’s environment, and personal beliefs. Namdar et al. showed that the quality of life of infertile women in the social subscale is low [29]. The present study’s findings in the social field showed that counseling had improved the quality of life in this subscale.

Although infertility is common, it is associated with poor quality of life, marital disputes, grief, major depressive disorder, anxiety disorders, and post-traumatic stress disorder [30]. The present study’s findings showed that integrated psychological counseling has a positive effect on the quality of life of infertile women in terms of mind and body and has improved this field. It confirms previous research in this field, which showed that cognitive-behavioral counseling is based on approaching alternative cognitive systems and reduces the anxiety and depression of infertile women [31, 32]. Heredia et al. also found that psychological intervention with a stress reduction approach could positively affect the subscales of mind and body and emotional quality of life, as well as on IVF success [33]. Farshi et al. examined the effect of the continuous care model on emotional health and social connection aspects of the quality of life of an infertile woman. They showed that education improves the emotional and relational areas [34].

In terms of improving the emotional subscale, is in line of their finding, but in the relational field, the opposite result was reported. This discrepancy can be related to the type of training, the number of sessions, and the samples, which were done only with the participation of infertile women. Haica et al.’s study showed that the combination of music therapy and psychological intervention improved the emotional and social dimensions of quality of life and had no effect on the relational subscale [35].

Counseling can improve the quality of life and reduce anxiety, increase knowledge, enhance a person’s perception of life’s goals, improve adaptive behaviors and

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**Figure 1. CONSORT flow diagram of selecting participants**

| Enrollment | Assessed for eligibility (n=97 couples) |
|------------|---------------------------------------|
|            | Excluded (n= 37 couples)               |
|            | - Not meeting inclusion criteria (n= 32 couples) |
|            | - Declined to participate (n= 5 couples) |
|            | - Other reasons (n= 0)                 |
|            | Randomized (n= 60 couples)             |

| Allocation | Assisted to control (n= 30 couples) |
|           | - Received allocated intervention (n=30 couples) |
|           | - Did not receive allocated intervention (give reasons) (n= 0) |

| Analysis | Assisted to intervention (n= 30 couples) |
|         | - Received allocated intervention (n=30 couples) |
|         | - Did not receive allocated intervention (give reasons) (n= 0) |

| Follow-Up | Analyzed (n=30 couples) |
|          | - Excluded from analysis (give reasons) (n=0) |
|          | Lost to follow-up (give reasons) (n= 0) |
|          | Discontinued intervention (give reasons) (n= 0) |

| Analysis | Lost to follow-up (give reasons) (n= 0) |
|         | Discontinued intervention (give reasons) (n= 0) |

| Follow-Up | Analyzed (n= 30 couples) |
|          | Excluded from analysis (give reasons) (n=0) |

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patient adjustment, and reduce the cost of treatment [36, 37]. The number of counseling sessions for couples is not enough to change all aspects of the quality of life among infertile women. Inability to control confounders to perform posttest was a limitation of this study.

Conclusion

Results suggest that integrated psychological counseling can improve the quality of life of infertile women in terms of mind and body, social and emotional, but not in terms of relational. So, it seems that counseling programs can improve the quality of life and subsequently more satisfaction and cooperation in infertility treatment. Therefore, it is recommended to conduct clinical trials with a larger sample size and accurate methodology to obtain more generalizable results.

Ethical Considerations

Compliance with ethical guidelines

The study was approved by the Ethics Committee of Kerman Medical University (IR.KMU.REC.2016.678IR) and registered in Iran Clinical Trials Registration Center (IRCT2017080124866N4). After obtaining the necessary permissions from the Head of Afzalipour Hospital Infertility Center, the researcher invited all infertile couples who met the inclusion criteria to participate in the study. Participants filled out a written informed consent form.

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Authors’ contributions

Conceptualization and methodology: Tayebeh Mokhtari Sorkhani, Atfeh Ahmadi, and Katayoun Alidousti, Moghaddameh Mirzaee; Writing the original draft: Tayebeh Mokhtari Sorkhani and Katayoun Alidousti; Data collection: Tayebeh Mokhtari Sorkhani and Victoria Habibzadeh; Data analysis: Moghaddameh Mirzaee; Supervision: All authors.

Conflict of interest

The authors declared no conflict of interest.

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