Effect of Mood Regulation Skill Training on General and Sexual Self-Concept of Infertile Women

Noushin Gordani, Tayebe Ziaei, Fatemeh Naghi Nasab Ardehaye, Naser Behnampour, Saeideh Gharahjeh

Abstract

Background: General and sexual self-concept are affected by various life problems, including infertility. Mood regulation skill also promotes physical and psychological health by affecting people's knowledge, values, and attitudes. The present study aimed to determine the effect of mood regulation skill training on the general and sexual self-concept of infertile women.

Methods: This clinical trial was performed on 34 infertile women referred to Gorgan Infertility Center in 2018 that were selected using convenience sampling method and randomly assigned to intervention and control groups through block allocation. The mood regulation training program was administered to the intervention group during four 90-minute sessions once a week. Both intervention and control groups completed Rogers Self-Concept and Snell Sexual Self-Concept Questionnaires before and immediately and one month after the intervention. The data were analyzed in SPSS version 16, using repeated variance analysis and Bonferroni adjusted test.

Results: The results showed that before the intervention, the mean score of general self-concept in the intervention group was 9.41, and the positive, negative, and situational sexual self-concept were 123.76, 12.18, and 43.18, respectively, and one month after the intervention, general self-concept was 6.21, positive sexual self-concept was 139.29, negative was 5.71 and situational was 54.24. Repeated analysis of variance showed that the intervention had a positive effect on the general and sexual self-concept of infertile women one month after the intervention and this effect was statistically significant (P<0.05).

Conclusion: Mood regulation training has a positive effect on the general and sexual self-concept of infertile women and can be used in service centers.

Introduction

Self-concept refers to a set of one's emotions and perceptions and this perceived self will affect one's behavior and perception of the world that is acquired through social interactions and is enhanced by one's interactions with others in the environment (1). Self-concept is at the core of all personal and social behaviors (2) and is considered an important element in mental health (3). As such, poor self-concept manifests itself as a reduction in self-esteem, and performance, and a lack of motivation (4). General self-concept in the form of self-esteem and self-efficacy affects general health and sexual self-concept (5).

Sexual self-concept refers to one's perception of oneself as a sexual being (2), in other words, one's perceptions and feelings about sexual matters and the understanding of one's sexual aspects (3). This phenomenon occurs during the process of psychosocial development with the sexual schema and helps the individual to gain awareness in their sex life (4), influenced by cognition, beliefs, and the environment (4) and is significantly related to sexual experiences and behaviors (5). Sexual self-concept and its dimensions are important psychosexual variables (6) and are affected by various life problems including infertility (7).

Infertility harms the infertile women's self-concept and attitude to life (8), because of their sense of inability, worthlessness, and inadequacy, they have a poor image and their level of “self” acceptance is significantly low (9). Their negative attitude to life due to having no child makes them feel a great deal of responsibility towards their community and spouses, causing serious harm to their self-concept (2). Individuals with more negative emotions experience more stress and dissatisfaction in their interactions, and their dissatisfaction with self and life affects their self-concept (10). Negative self-concept, social pressures, isolation, and loneliness are the most important psychological problems of infertile women and their physical problems in the form of insomnia, eating disorders, obsessive thoughts, and symptoms of depression (8). They also experience higher levels of sexual dysfunction due to limitations in sexual attitudes and a reduction in self-esteem that results in reduced libido or ability to respond to sexual pleasure (11 and 12). Sexual self-concept is an important component of self-concept (13) that increasing its positive dimensions (such as self-esteem and sexual satisfaction) and reducing its negative dimensions (such as sexual anxiety) can enhance sexual performance in individuals (14). Ghorbani Shiroudi et al. (2012) found that cognitive-behavioral therapy improved sexual self-concept (15) and Ramezani et al. (2016) in their study showed that sex-psychological training can change the sexual self-concept of women (16).

Adaptation to various problems in personal and social life is largely influenced by self-concept, and experts have used a variety of methods to improve self-concept problems, including training mood regulation skills (12). Mood regulation skills are life skills that enable individuals to transform their knowledge, values, and attitudes into actual abilities, prepared to deal with situations, and with positive and adapted behaviors improve their physical, and psychological health (18). This skill is used as an important protective factor for those experiencing psychological problems in their relationships (19) and individuals can modify their emotional responses (20).

Infertility is a major crisis in individuals' life (11), and infertile women face many stresses at different times of life, leading to problems such as negative self-esteem, anxiety about relationships with others, and inadequate social performance (21). Infertility can also lead to sexual problems in men by affecting sexual self-concept (14), as sexual self-concept predicts sexual performance, and women with negative sexual self-concept have poorer sexual performance (22). Studies have shown that group psychological interventions in infertile couples undergoing infertility treatment reduce their psychological problems such as sadness and depression and increase marital satisfaction, quality of life, and pregnancy rate (23-25), as well as group cognitive-behavioral therapy, has been effective on depression in infertile women and emotion regulation group training plans have been effective on emotional well-being and marital satisfaction (22), but given that in the recent studies the effect of skills training on sexual and general self-concept of infertile women has not been investigated, the present study was designed and conducted aimed to determine the effect of mood regulation training on the general and sexual self-concept of infertile women.

Methods

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1. Counseling and Reproductive Health Research Centre, Golestan University of Medical Sciences, Gorgan, Iran
2. Ph.D. of Reproductive Health, Associate Professor, Counseling and Reproductive Health Research Centre, Golestan University of Medical Sciences, Gorgan, Iran
3. Counseling and Reproductive Health Research Centre, Golestan University of Medical Sciences, Gorgan, Iran
4. Assistant Professor, Faculty of Health, Golestan University of Medical Sciences, Gorgan, Iran
5. Obstetricians and gynaecology Specialist, fellowship in infertility, Gorgan Infertility Center, Golestan, Iran
Correspondence: Health Management and Social Development Research Center, Golestan University of Medical Sciences, Gorgan, Iran. Tel: +989111758007, E-mail: tayebe.ziaei@yahoo.com
The study, with a sample size of n=10 in each group -0 eligible infertile women were negative, and one month later were completed by women in both intervention and control groups. The minimum test power of 0.80, it was possible to present the results with generalizability at confidence level of 0.95. The inclusion criteria were: Iranian nationality, at least high school education, having primary infertility, not having adopted child, not taking psychiatric medication, not drug addiction of spouse, not having history of life skills training. Exclusion criteria were having an adopted child, taking psychiatric medication, drug addiction of spouse, a history of life skills training.

The data was gathered using a questionnaire including Beck Depression Inventory, Rogers's self-concept, and Snell sexual self-concept questionnaires.

Beck Depression Inventory was developed by Beck in 1961 and consists of 21 items, each of which contains 4 sentences. The scores specified by the subject ranging from 0 and 7 is considered a natural self-concept. The minimum score in the dimension of positive is 176, negative 64, and situational 77.

A concept of infertile women was affected by the intervention, but the effect of mood regulation skill training. Exclusion criteria were having an adopted child, not taking psychiatric medication, not drug addiction of spouse, and a score of 10.01 and above is considered a weak self-concept.

The Sexual Self-Concept Questionnaire was designed by Snell in 1995 and its validity and reliability were measured in Iran by Ziaei (2013). The minimum score in the dimension of positive, negative, and situational sexual self-concept is zero and the maximum score in the dimension of positive is 176, negative 64, and situational 77.

At the beginning of the study (October 2018), all eligible and volunteer women were recruited through the convenience sampling method and completed Beck Depression Inventory. Rogers Self-Concept Questionnaire, and Snell Sexual Self-Concept Questionnaire. The subjects with depression scores ranging from 36 to 63 were excluded from the study and the rest of the samples were descended based on general self-concept score using randomized block allocation (designed and implemented by computer) in intervention and control groups (Figure 1). The general self-concept scores descended for the participants resulted in inhomogeneity in the consecutive scores. Then, the mood regulation program was organized in four 90-minute session weekly, in 7-10 women in each group for the intervention group (Table 1). Rogers Persian Self-Concept Questionnaire and Snell Sexual Self-Concept Questionnaire at three-time points; before the beginning of the training sessions, immediately after the end of the last session and one month later were completed by women in both intervention and control groups.

The data were analyzed by software SPSS version 16. Independent t-test and Mann-Whitney test were used to compare quantitative demographic variables in both groups and chi-square and Fisher exact tests were used to compare qualitative demographic variables in both groups. The normality of quantitative variables was studied by the Shapiro-Wilk test. Analysis of variance with repeated measures was used to compare the mean of general self-concept and the dimensions of sexual self-concept in intervention and control groups before, immediately, and 1 month after mood regulation training. Adjusted Bonferroni test was used to compare the means of the two variables three times (P<0.05). Given the nature of the data, the analysis was performed using the GEE method, and P-Value values in the first three digits by the two methods were the same. But concerning the comprehensible outputs of repeated variance analysis, results are reported based on this method.

Results
No statistically significant difference was found between the two groups in terms of quantitative demographic variables (age, duration of marriage, and duration of infertility) (P<0.05).

Qualitative demographic variables (education and job of spouse) were also compared between the two groups and the results of Fisher exact and chi-square tests showed that frequency distribution was homogeneous between intervention and control groups and only frequency distribution of female job was not homogeneous in the two intervention and control groups, as homogeneity of general self-concept scores at the beginning of the study did not affect homogeneity in the results of other tests (Table 2).

The mean of general self-concept and the dimensions of sexual self-concept at the beginning of the study were the same in both groups but reduced immediately after the intervention in the control group and increased in the intervention group and one month after the intervention increased in the control group but reduced significantly in the intervention group. In other words, the general and sexual self-concept of infertile women was affected by the intervention, but the effect of the intervention does not appear immediately (Figure 2).

Repeated analysis of variance was performed to compare general self-concept and dimensions of sexual self-concept in the studied groups before, immediately, and one month after the intervention given the assumption that data is normal. The results showed that general and sexual self-concept dimensions were improved in the intervention group, one month after the intervention, compared to the two previous stages, and the difference was statistically significant, but in the control group, no statistically significant difference was found. The dimensions of sexual self-concept also had a significant difference in the intervention group one month after the intervention compared to the two previous stages, but in the control group, the status became more inappropriate over time, which was statistically significant (Table 3).

The table shows the frequency distribution of qualitative demographic information between infertile women in intervention and control groups.

### Table 2. Comparison of frequency distribution of qualitative demographic information between infertile women in intervention and control groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention</th>
<th>Control</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education of wife</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>6 (30)</td>
<td>6 (30)</td>
<td>*1.40</td>
</tr>
<tr>
<td>Associate degree</td>
<td>2 (10)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Bachelor</td>
<td>7 (35.3)</td>
<td>6 (30)</td>
<td></td>
</tr>
<tr>
<td>Master of science</td>
<td>2 (10)</td>
<td>5 (25)</td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>4 (20)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Education of husband</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>4 (40)</td>
<td>6 (66)</td>
<td>0.26*</td>
</tr>
<tr>
<td>Associate degree</td>
<td>2 (33.3)</td>
<td>4 (66.6)</td>
<td></td>
</tr>
<tr>
<td>Bachelor</td>
<td>6 (54.5)</td>
<td>5 (45.5)</td>
<td></td>
</tr>
<tr>
<td>Master of science</td>
<td>1 (10)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Job of wife</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employer</td>
<td>4 (26.7)</td>
<td>11 (73.3)</td>
<td>0.01**</td>
</tr>
<tr>
<td>Housewife</td>
<td>13 (68.4)</td>
<td>6 (31.6)</td>
<td></td>
</tr>
<tr>
<td>Job of husband</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employer</td>
<td>6 (62.9)</td>
<td>8 (75.1)</td>
<td>0.48**</td>
</tr>
<tr>
<td>Self-employee</td>
<td>11 (55)</td>
<td>9 (45)</td>
<td></td>
</tr>
</tbody>
</table>

* Chi-square test * Fisher exact test

### Table 3. Comparison of General Self-Concept Scores and Dimensions of Sexual Self-Concept in three time points in both groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean ± SD</th>
<th>Test result</th>
<th>Adjusted Bonferroni test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>±1</td>
<td>±2**</td>
<td>(1 and 2)</td>
</tr>
<tr>
<td>General self-concept</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>9.41±6.40</td>
<td>10.13±8.81</td>
<td>6.21±2.03</td>
</tr>
<tr>
<td>Control</td>
<td>9.81±3.75</td>
<td>8.97±3.50</td>
<td>10.78±2.63</td>
</tr>
<tr>
<td>Positive Sexual Self-Concept</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>12.76±15.77</td>
<td>11.65±19.46</td>
<td>19.29±12.07</td>
</tr>
<tr>
<td>Control</td>
<td>13.51±24.93</td>
<td>13.82±26.99</td>
<td>10.53±21.29</td>
</tr>
<tr>
<td>Negative Sexual Self-Concept</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>12.18±8.57</td>
<td>12.94±8.01</td>
<td>5.71±3.65</td>
</tr>
<tr>
<td>Control</td>
<td>10.76±9.77</td>
<td>15.53±9.17</td>
<td>23.85±8.66</td>
</tr>
<tr>
<td>Situational Sexual Self-Concept</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>4.14±7.80</td>
<td>4.09±7.92</td>
<td>54.24±11.09</td>
</tr>
<tr>
<td>Control</td>
<td>4.24±5.65</td>
<td>4.71±5.87</td>
<td>35.94±7.63</td>
</tr>
</tbody>
</table>

*Before intervention  ** Immediately  *** One month after intervention

Effect of mood regulation skill training …
The other objective of this study was to determine the mean dimensions of sexual self-concept in infertile women in the intervention and control groups before, immediately, and one month after the intervention. The results showed that one month after mood regulation training, positive sexual self-concept increased in the intervention group and negative self-concept reduced, whereas in the control group positive sexual self-concept reduced and negative self-concept increased. In other words, sexual self-concept dimensions of infertile women have been affected by the intervention and the interaction between intervention and time. Ziaei et al. (2018) also showed that sexual self-concept counseling improved women's sexual health at fertility ages (14). Given that different counseling and training plans improve one's sexual self-concept, we also used mood regulation training in our study, which is a form of psychological training that reduces negative mood symptoms and improves individuals' self-esteem and health. As a result, changes occur in sexual self-concept in infertile women.

In future studies, it is suggested to conduct similar studies in different cities, considering the ethnic and cultural differences of the cities of the country. Also, given that the present study was time-constrained, further research is suggested to determine the effect of interventions on general and sexual self-concept with long-term follow-up tests. Similar studies with other educational or psychological interventions are also recommended to determine the effect on general and sexual self-concept in infertile women or other target groups.

It is necessary to mention at the beginning of the study, to observe the ethics of the research, with a detailed explanation to the research sample about the purpose and process of the research, respecting the rights of participants to terminate or continue cooperation at each stage of the research, not mentioning them in the forms for confidentiality and informed written consent, the volunteers voluntarily participated in the study. After the end of the study, the control group was informed that if they would like to attend a training session (due to the closure of the infertility center) it will be held elsewhere.

Conclusion
Given that infertility has a negative effect on people's self-concept, the use of psychological interventions to reduce these negative effects and improve self-concept and thus self-confidence and self-esteem is essential. Considering the positive results of this study, using mood regulation training to improve the general and sexual self-concept of this group of the population, this skill training can be used in infertility treatment centers.

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Ethical statement:
This study was approved by the ethics committee of the Golestan University of Medical Sciences.

Conflict of interest:
The authors declare that they have no conflict of interest.

Author contributions:
N G, T Z, F N and N B design the study, N G collecting the samples and data, N G, T Z and F N doing the intervention, N B doing statistical analysis, N G writing the manuscript, T Z, F N, N B and S GH editing the manuscript. All authors approved the final version of manuscript for submission.

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Figure 1. Comparison of general self-concept between intervention and control groups at 3 times, Before, Immediately and One month after the intervention

Figure 2. Flowchart of the process of participants’ allocation and analysis

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