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Effectiveness of Online Versus Telephone Counseling of Rational-Emotional-Behavioral Therapy on Sexual Function of Women Undergoing Cardiac Rehabilitation: A Randomized Clinical Trial

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Abstract

Background: Sexual function in patients with cardiovascular disease (CVDs) is often associated with anxiety and irrational beliefs. Moreover, 60-78% of patients with CVDs report sexual problems. Some studies suggest that sexual counseling is necessary for these patients but is not usually provided for them. Online or telephone counseling may be helpful during the covid-19 pandemic, but studies on its application to sexual function appear to be limited. This study aimed to investigate the effectiveness of online vs. telephone counseling of rational-emotional-behavioral therapy (REBT) on the sexual function of women undergoing cardiac rehabilitation. **Materials and Methods:** In this randomized clinical trial study, 46 women diagnosed with CVDs under rehabilitation were assigned into online and telephone groups. Overall, eight 60-min intervention sessions were held (once a week). The Female's Sexual Function Index (FSFI) questionnaire was completed by the women at baseline, week 8th, and follow-up week 12th (main outcome). **Results:** FSFI scores between the two groups at baseline (online: 13.28±2, telephone: 12.68±1.52, P=0.254) compared to week 12th (online 28.86±2.44, telephone, 26.6±2.10, P=0.002) were significantly different. As for within-group comparison in baseline compared to week 12th statistically significant difference was observed in all subscales of FSFI (P<0.05). **Conclusion:** Online and telephone REBT counseling can improve the sexual function of women undergoing cardiac rehabilitation, but online counseling appears to be more effective. Thus, this method is recommended to improve the sexual function of these women during the covid-19 pandemic. **[GMJ.2022;11:e2396]** **DOI:10.31661/gmj.v11i.2396**

Keywords: Cardiovascular Diseases; Rational-Emotional-Behavioral Therapy; Cardiac Rehabilitation; Sexual Activities; Internet-Based Intervention; Counseling

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Introduction

Cardiovascular diseases (CVDs) are the leading cause of death in women worldwide [1]. Cardiac rehabilitation is a set of interventions necessary to achieve the best physical, psychological, and social conditions [2]. Sexual function is explained as a person's physiological responses to sexual arousal, including sexual desire, excitement, orgasm, and resolution [3]. Notably, 60-78% of patients with CVDs report sexual problems [4, 5]. However, it seems that patients with stable mild symptoms and good functional capacity are not at risk [6]. One of the counseling needs of patients with CVD is how to resume sexual activity. Although international guidelines recommend that all patients with CVDs need to receive sexual counseling, this is not fully provided by health professionals [7]. Improving patients' conditions with CVDs requires attention to their sexual health. However, cultural, religious, and social taboos may prevent patients from disclosing their sexual concerns [8]. Various pharmacological and psychological therapies have been employed in women with CVDs [9-12].

The most appropriate intervention for the treatment of sexual disorders among patients with CVDs is counseling [13]. Albert Elis introduced one of the most popular and cost-effective methods of counseling as rational-emotional-behavioral therapy (REBT) [14]. It is supposed that these events do not directly induce emotions and behaviors. Instead, it is the individual's beliefs about events that lead to emotional and behavioral functions, the main purpose of which is to enable clients to seek a more realistic philosophy of life, insights into irrational beliefs, and replace them with rational ideas to reduce their disorientation [14]. Fear and stress are among the most critical reasons for the decline in sexual activity in women with CVDs [15].

Regarding the irrationality of the fear and stress of sexual intercourse in women who are undergoing cardiac rehabilitation and have adequate heart capacity for sexual intercourse [16], it seems that this technique proves helpful in improving their sexual function. In recent years, smartphone users worldwide have increased significantly, and online sexual counseling has become highly popular among Asian women [17]. Women with CVDs are at high risk for Coronavirus disease 19 (covid-19), and distance counseling interventions are therefore of particular importance to them [18-20]. Given the importance of sexual function in women with CVDs, the effect of the covid-19 pandemic on domestic violence, high-risk sexual behaviors, marital incompatibility [21-23], lack of enough patient awareness, inadequate counseling by care providers, the existence of contradictory results in research [6, 16], lack of integration of sexual rehabilitation as a routine measure in cardiac rehabilitation in most services [24], and limited studies based on REBT in sexual rehabilitation in women with CVDs, the need for more studies in this field can be one of the research priorities. Also, considering that the issues of sex are regarded as somewhat taboo in Iranian culture by some women, their husbands, or both, studies on women's cultural acceptance, privacy, applicability, and effectiveness of counselling interventions on women's sexual function undergoing cardiac rehabilitation are restricted [25]. The aim of the study was to compare the effectiveness of REBT online versus telephone counseling on sexual function in women undergoing cardiac rehabilitation.

Materials and Methods

Subjects and Randomization

This randomized clinical trial study was performed on women who registered in the cardiac disease registry system in Afshar Hospital from March to July 2021. Subjects were recruited via a telephone call based on inclusion and exclusion criteria. Then, they were randomly assigned into two groups (online vs. telephone) using http://www.randomization.com. The two groups were again randomly divided into four subgroups (12 women in each subgroup).

Sample Size Calculation

The sample size was estimated based on a previous study by Haji Mohammad Hoseini [26], considering $\alpha=0.05$, $\beta=20$, $\sigma=3.25$, and

the minimum mean difference of 2 units with a 95% confidence level. With the power of 80% and a 10% drop in the sample size, 24 patients were needed in each group.

Inclusion and Exclusion Criteria

Women with reading and writing literacy, internet and mobile literacy, and ages less than 50 years were enrolled in the study. Also, exclusion criteria included pregnancy, concurrent participation in another study, history of other chronic mental and physical disorders, and use of other drugs except drugs administrated by the cardiologist.

Occurrences of divorce, pregnancy, absence in more than two counseling sessions, incomplete filling of questionnaires, and discontinuing cardiac rehabilitation during the study were considered as withdrawal from the study.

Data Collection

Demographic data were collected through an electronic link in the online and telephone interview in the telephone groups. Also, the Female Sexual Function Index (FSFI) [27] was applied for assessment of the sexual function of women at baseline, end of 8th and 12th weeks. FSFI includes 19 questions that measure sexual desire, arousal, moisture, orgasm, satisfaction, and sexual pain in six independent areas. Based on the weighting of the fields, the minimum and maximum scores for each field were two and six, respectively. Also, the score for the whole scale was 36. FSFI has r=0.74–0.87 and Cronbach alpha=0.90-0.96 [28], and the validity of its Persian version was evaluated by Mohammadi *et al*. [29].

Intervention

REBT counseling sessions based on relevant sources [14, 30-32] were conducted as individual counseling in eight sessions with an average time of 60 minutes and the same content for both groups (Table-1). In the online consultation group, WhatsApp software provided verbal chat, photos, videos, and the same content was also provided verbally for the telephone group. A reminder SMS was sent to them before each session. In each session, besides reviewing the assignments given to the participants in the previous session, they were asked about the effectiveness of counseling and how far they had improved; they were also asked to discuss

Table 1. Content and Objectives of Rational-Emotional-Behavioral Therapy (REBT) Counseling Sessions

Sessions	Content and objectives
First	Familiarize members with the ABCDE model in everyday life, evaluate activating factors and irrational beliefs, as well as the emotional consequences, identify obligations, and direct them into their preferences so that women with heart disease can understand the adverse consequences of their beliefs around their sexual function
Second	Be able to have the right emotions in difficult life events, reduce anxiety through confrontational whispers, and rational-emotional visualization
Third	Have unconditional self-acceptance and others' acceptance, lack of blame, and feelings of guilt or worthlessness in sex
Fourth	Learn how to talk to themselves internally, challenge or question irrational beliefs, and change the way to express themselves
Fifth	Let go of irrational thoughts by using challenge, Socratic dialogue, book therapy, re-framing, and determining assignments
Sixth	Enjoy desensitization and relaxation techniques, shameless exercises, desensitization
Seventh	Bear sexual self-efficacy, develop constructive behaviors, learn new skills using skills training methods, practice reasonable beliefs, prevent relapse, reinforcements, and punishments with an emphasis on reinforcements.
Eighth	Assess the achievement of goals and measure dependent variables using post-test, prepare references to complete counseling sessions

the changes they experienced in their sexual function based on the content of the sessions.

Ethical Issues

This study was approved by the ethics committee of Shahid Sadoughi University of Medical Sciences (approval code: IR.SSU.REC.1399.205) and registered in the Iranian clinical trial registration system (code: IRCT20201222049797N1). Also, informed consent was taken from all subjects before the study.

Data Analysis

All the statistical analyses were performed via SPSS software (version 23, SPSS Inc, Chicago, IL, USA). Data were presented as mean±standard deviation (SD) and/or number and percent. The normal distribution of variables was asses by the Shapirovilk test. Also, Independent Sample t-test was used to determine the difference between the mean scores of FSFI between the two groups of online and telephone counseling. A P-value less than 0.05 was considered as significant difference.

Results

Totally 77 women who were eligible for the study were evaluated, and finally, 48 of them were enrolled (Figure-1). One woman in each group did not complete all the sessions, and final analyses were performed on 23 women.

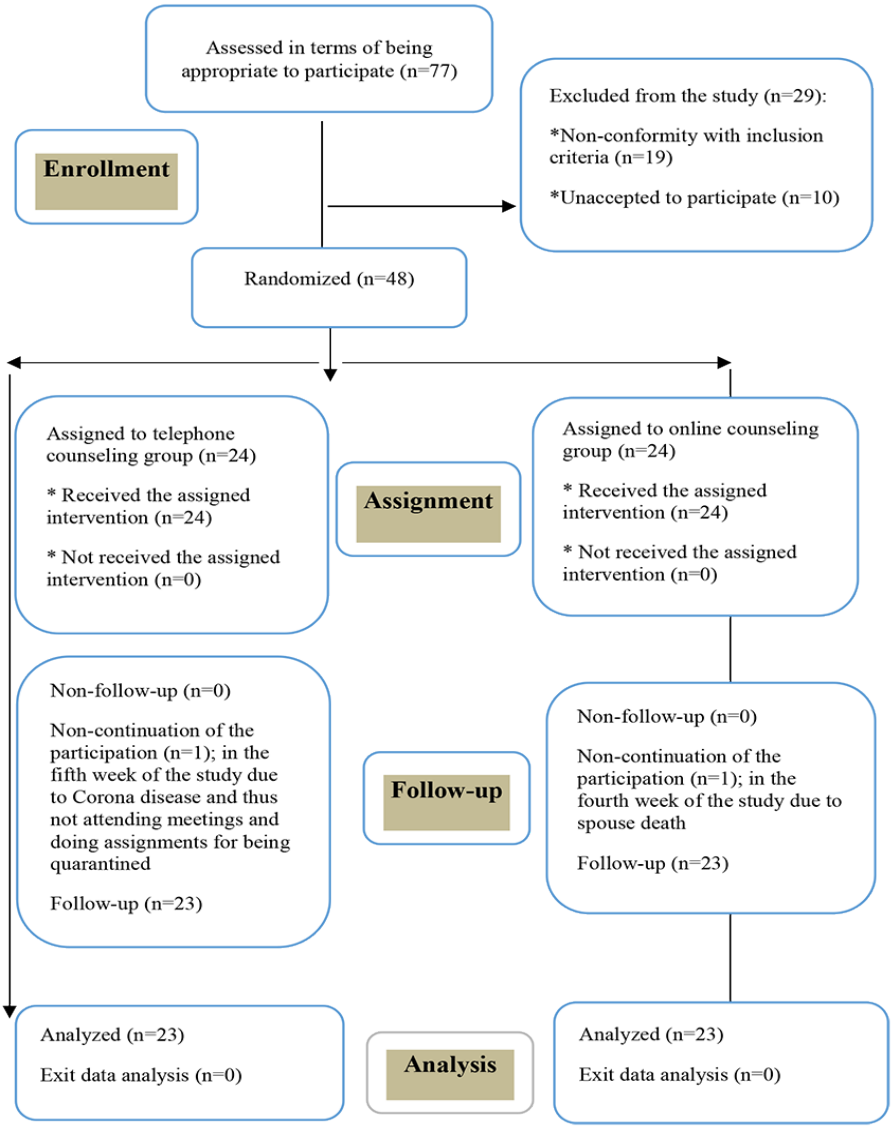

Figure 1. CONSORT flowchart

The demographic characteristics of women in the two groups are shown in Table-2. There was no significant difference between age, occupational status, duration of disease, type of treatment, and level of education among online and telephone groups (P>0.05). As the showed in Table-3, the mean FSFI score in the eighth week in the online group was significantly higher than the telephone group (P=0.038). Moreover, a significant difference was identified between the FSFI scores in the follow-up (week 12th) between the two groups of online and telephone counseling (P=0.002). Also, the FSFI scores of the two groups were significantly different between baseline and the end of week 12th (P=0.015). Indeed, women in the online group have a higher FSFI score compared to telephone groups.

The mean scores of all subscales of desire, arousal, vaginal moisture, orgasm, satisfaction, and sexual pain in each group were significantly different at baseline compared to week 12th (P<0.05, Table-4).

Discussion

In this study, the mean score of FSFI of online versus telephone counseling based on REBT among women who were undergoing cardiac rehabilitation was compared, and the results indicated that the scores at the end of weeks 8th and 12th were significantly higher than the baseline of the study. Sahin *et al*. revealed that the benefits of the REBT-based model on cognitive regulation of emotion in patients with multiple sclerosis [33]. Also, Grove *et al*. detected that the REBT approach effectively reduced anxiety, depression, and guilty in post-traumatic stress disorder in veterans

Table 2. Demographic Characteristics of Women in the Two Groups

Variables	Online group (n=23)	Telephone group (n=23)	P-value
Age, y (mean±SD)	41.8±5.5	43.2±5.4	0.774
Duration of disease, y (mean±SD)	3.0±1.9	3.5±2.8	0.174
Occupational status, n(%)			
Housewife	18(76.2)	20(88)	0.605
Employed	5(23.8)	3(12)	
Type of treatment, n(%)			
Angiography	14(61.9)	13(72)	0.9
Coronary artery bypass graft	9(38.1)	10(28)	
Education level, n(%)			
Under diploma	19(76.2)	18(84)	0.449
Above diploma	4(23.8)	5(16)	

SD: Standard deviation

Table 3. Mean Scores of Female's Sexual Function Index (FSFI) in Online and Telephone Groups

Variables	Online group (n=23)	Telephone group (n=23)	P-value
FSFI score (mean±SD)			
Baseline	13.28±2	12.68±1.52	0.254
Week 8th	28.27±3.18	26.4±2.75	0.038
Week 12th	28.86±2.44	26.6±2.1	0.002
Baseline vs. Week 8th	<0.001	<0.001	
Week 8th vs. Week 12th	0.026	0.393	
Baseline vs. Week 12th	<0.001	<0.001	

FSFI: Female's sexual function index; **SD**: Standard deviation

Table 4. Mean Scores of the Subscales of Female's Sexual Function Index (FSFI) in the Two Groups

Variables	Online group (n=23)	Telephone group (n=23)	P-value
Sexual desire, (mean±SD)			
Baseline	2.3±0.65	1.94±0.68	0.037
Week 12th	3.9±0.52	3.65±0.45	
P-value	<0.001	<0.001	
Sexual arousal, (mean±SD)			
Baseline	2.6±0.62	2.4±0.63	0.051
Week 12th	4.5±0.58	4.1±0.45	
P-value	<0.001	<0.001	
Vaginal moisture, (mean±SD)			
Baseline	1.78±0.26	1.67±0.3	0.01
Week 12th	4.83±0.45	4.31±0.6	
P-value	<0.001	<0.001	
Orgasm, (mean±SD)			
Baseline	1.75±0.34	1.66±0.27	0.024
Week 12th	4.89±0.64	4.58±0.45	
P-value	<0.001	<0.001	
Sexual satisfaction, (mean±SD)			
Baseline	2.9±0.62	2.8±0.61	0.09
Week 12th	5±0.59	4.69±0.37	
P-value	<0.001	<0.001	
Sexual pain, (mean±SD)			
Baseline	1.9±0.71	2.19±0.6	0.334
Week 12th	5.71±0.53	5.28±0.53	
P-value	<0.001	<0.001	

SD: Standard deviation

[34]. Additionally, Kabadi *et al*. reported the effect of this approach in reducing anger and elevating happiness in women [35]. The reason for the effectiveness of REBT seems to be pertinent to the mechanisms of this type of counseling method in which it identifies irrational beliefs, evaluates the links between cognition, emotion, and behavior, and replaces irrational beliefs with realistic changes [14, 36]. Irrational thoughts in women with CVDs induce reactive emotions, maladaptive behaviors, cognitive defects, trigger catastrophe, and sexual isolation.

On the other hand, their husbands' pressure to have sex causes guilt, worthlessness, and lack of sexual efficiency [37-39]. This attitude in women contributes to irrational fear and anxiety around sex causing them not to run away from it, not yield to it, to take constructive action to solve it, and correct irrational interpretations and frameworks, which reduce their fear and anxiety about having sex [37, 40]. Although both methods of intervention could improve the sexual function of these women, the mean score of FSFI in the online counseling group was higher at the end of the intervention in the eighth and twelfth weeks. Given the effectiveness of online counseling, it seems that individual online counseling for sexual function is culturally acceptable by women, and factors such as lack of violation the privacy, attractive content offered in the form of online chat, videos, and slides on WhatsApp software, the possibility of reviewing the content with the husband, as well as video communication in the chat room leads to a

better relationship between the counselor and the patient. Thus assisting them to learn the contents of counseling sessions are better and become more skilled in performing techniques related to improving sexual function [17, 41]. In line with the current study, Farajkhoda *et al*. evaluated the effectiveness of face-to-face and online counseling with a cognitive-behavioral approach to sexual intimacy of pregnant women and identified satisfaction being accompanied more by the online method [42]. By comparing the effectiveness of online SMS cognitive behavioral therapy and telephone cognitive behavioral therapy on persistent depressive disorder, Raisi *et al*. reported no significant difference between depression scores in the online and telephone groups [43].

Due to the increase in marital disputes and domestic violence sexual behaviors during the covid-19 pandemic [21-23], it seems that women undergoing cardiac rehabilitation need more sexual counseling. The recovery of patients with CVDs requires attention to their sexual health [8]. Evidence suggests that all patients with CVDs should receive sexual counseling to avoid sexual dysfunction in the form of decreased libido, sexual withdrawal, and ultimately lowered sexual satisfaction of themselves and their spouses [7, 44]. Women under cardiac rehabilitation proved eager to receive information and counseling without a physical presence to reduce the risk of possible transmission of covid-19 [21]. Also, work with a mobile phone equipped with WhatsApp software as it would be easy and attractive for them and provide helpful information; it could be used in cardiac rehabilitation programs to augment sexual activity as an effective method. Pascoal *et al*. mentioned that online technology-assisted communication is considered as one of the key elements in sexual problems interventions, especially during the covid-19 pandemic [23]. Among the limitations of the present study, we can refer to the concerns of women undergoing cardiac rehabilitation about sexual intercourse due to the prevalence of covid-19 and the fear of being affected by the disease from their husbands working outside; for this problem, other methods of intercourse, which do not involve face-to-face sexual relation were instructed. Another limitation of the study was that blindness was not possible due to the awareness of women undergoing cardiac rehabilitation of the type of intervention, but because the intervention was performed separately, it did not affect women's responses.

Conclusion

REBT counseling, whether online or over the telephone, improved the sexual function of women undergoing cardiac rehabilitation. Online counseling seems to be more acceptable due to the possibility of presenting content in the form of visual chat, reviewing content with the husband, and repeating the review as long as they need to learn emotion regulation skills, and acquire a more realistic philosophy about illness. Also, correct beliefs about sex after heart disease help them to properly use the techniques of sexual intercourse during the covid-19 pandemic and improve their sexual function. Therefore, online counseling can be used in the covid-19 pandemic by observing social distance to improve the sexual function of women undergoing cardiac rehabilitation who are more vulnerable to this disease.

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Conflict of Interest

The authors declare no conflicts of interest.

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