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Original Article

Effectiveness of Behavioral Activation Therapy on Sexual Dysfunction and Relationship Satisfaction of Postmenopausal Women with Sexual Desire-Arousal Disorder

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Abstract

Background and Aim: Menopause is a critical phase in women's lives that can lead to various long-term issues, including a decrease in sexual desire and arousal, which may negatively affect their quality of life. Sexual dysfunction is closely linked to women's cognitive beliefs. This study aims to evaluate the effectiveness of behavioral activation therapy on dysfunctional sexual beliefs and relationship satisfaction in menopausal women experiencing sexual.

Materials and Methods: This quasi-experimental study employed a pre-test-post-test design and follow-up with a control group. The statistical population included all menopausal women with sexual dysfunction over the age of 50 who referred to specialized treatment centers for sexual disorders in Isfahan in 2023. Thirty menopausal women with sexual dysfunction were selected through purposive sampling and clinical interviews, with a sexual function score of less than 28 based on the Rosen Female Sexual Function Index. They were randomly assigned to either the intervention group (n=15) who received eight 90-minute sessions of behavioral activation therapy or the control group (n=15) who were placed on the waiting list without receiving any intervention. The Dysfunctional Sexual Belief Questionnaire (DSBQ), the Relationship Satisfaction Scale and Female Sexual Function Index (FSFI) were used as data collection tools. The data were analyzed using repeated measures ANOVA in SPSS version 23.

Results: The results showed a significant difference between the mean scores of dysfunctional sexual beliefs and relationship satisfaction in the pre-test with post-test and follow-up in the intervention group ($p<0.05$). Therefore, it can be concluded that dysfunctional sexual beliefs and relationship satisfaction improved in the post-test and follow-up compared to the pre-test, and the scores remained stable in the follow-up compared to the post-test ($p<0.05$).

Conclusion: Based on the findings, behavioral activation therapy can improve sexual dysfunctional beliefs and relationship satisfaction in postmenopausal women with sexual desire/arousal disorders by increasing the person's contact with environmental reinforcing connections and improving mood and thinking. to empower sexual challenges and pave the way for further research in the field of interventions related to menopausal

women with sexual desire/arousal disorders. Therefore, it is suggested to use behavioral activation therapy in health and treatment centers and counseling centers to improve the sexual problems of postmenopausal women.

Keywords: Sexual dysfunction, Dysfunctional sexual beliefs, Behavioral Activation Therapy, Relationship satisfaction, Menopause

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Introduction

Menopause marks the physiological conclusion of the reproductive phase in women. According to the World Health Organization's definition, natural menopause is the permanent cessation of menstruation resulting from the loss of ovarian follicular activity(1). Although menopause is a natural part of women's life, its consequences can have a significant impact on women's health and quality of life (2). During the menopausal period, women experience physical, psychological, and social changes, which can cause stress and disability in 50 to 85 percent of women due to biological and psychosocial changes (3). On the other hand, the aging of the world's population has turned sexual health into one of the important issues in women's health, and sexual activity plays an important role in menopause, with extraordinary effects on women's physical health, well-being, self-confidence, and subsequently their quality of life (4). In some women, reaching this period can cause concern and accentuate signs of aging and the end of their attractiveness (5). If they are also sexually inactive during their fertile years or if their psychosocial states are constantly undesirable, menopause may reduce their sexual ability and make any form of sexual expression repugnant to them (6). Findings of the native study showed that high sexual capacity and motivation are not necessarily predictors of desirable sexual function and cultural, personal and cognitive factors are of clinical interest (7). Research represents that sexual dysfunction in all areas is common in women with age, and this is related and correlated with menopause symptoms(8). Therefore, menopause can be a factor in aggravating women's sexual problems, including sexual desire/arousal disorder. In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders, to diagnose female sexual interest/arousal disorder, women must report at least three of the following symptoms in at least 75 percent of their sexual encounters for at least six months: reduced or absent sexual desire, reduced or absent sexual fantasies/thoughts, not starting or reducing sexual activity, loss or reduction of sexual pleasure, sexual interest and reproductive/non-reproductive feelings (9). McCabe et al (10) reported a low prevalence of sexual desire in 17 percent of British women, 33 to 35 percent of American and Swedish women, and 55 percent of Australian women. Karimi et al (11). Stated in a study that among menopausal women in Mashhad, the highest disorder was in sexual desire at 86 percent and sexual arousal at 82.3 percent. Various variables can affect sexual desire/arousal disorder, one of which is dysfunctional sexual beliefs.

Dysfunctional sexual beliefs refer to a set of attitudes and stereotypes about sexual performance that can endanger the sexual relationship between partners, putting it at risk (12). Despite lacking evidence to support them, these beliefs create expectations that hinder the achievement of couples' goals and create limitations in their ability to communicate due to many differences between them (13). Sexual beliefs in menopausal women can change due to age and body image. Menopausal women with low physical attractiveness cannot be sexually satisfied (14). Studies show that women with sexual arousal disorders are significantly less likely to have ineffective sexual beliefs, more negative thoughts, and

less sexually stimulating thoughts. Ineffective sexual beliefs, whether determined by education or conflicting cultural patterns, can lead to a painful silence that, without proper awareness of its causes, can psychologically analyze and undermine a person and negatively affect the quality of their relationship, leading to a decrease in intimacy (15). When a person experiences an unsuccessful sexual situation, ineffective beliefs lead to the activation of negative cognitive patterns. When these self-critical patterns are activated, a system of negative future thoughts is read that prevents them from focusing on sexual stimuli. This process subsequently leads to negative emotions such as discomfort, confusion, guilt, loss of satisfaction and pleasure in the relationship (16). This negative impact on the relationship can lead to a decrease in intimacy between partners (15). Mohammadi et al (17) Showed that correcting ineffective sexual beliefs leads to an improvement in sexual quality and satisfaction among women. Additionally, Irandoost et al (18) Demonstrated that ineffective sexual beliefs directly and negatively affect sexual performance. Another influential variable in sexual arousal disorder is relationship satisfaction.

Several researchers have defined satisfaction with a relationship as a tangible feeling of happiness, satisfaction, harmony between spouses, and enjoyment of the relationship in its entirety. Others have defined it as an individual's mental evaluation of that relationship and the internal and external compatibility of men and women in different life situations, in order to create mutual understanding between them (19). The satisfaction of individuals with their current relationship status can be a determinant of their level of psychological well-being (20). The level of satisfaction with intimate relationships refers to the experience of positive or negative emotions in the relationship. The level of satisfaction depends on how much each party in the relationship recognizes and addresses other needs (21). One of the important predictors of satisfaction in a relationship is sexual satisfaction. In fact, some studies have considered sexual satisfaction as an indicator of overall relationship satisfaction. The relationship between sexual satisfaction and overall relationship satisfaction is two-fold, meaning that the relationship is interchangeable. A weak marital relationship, unresolved conflicts, and emotional distance can lead to a lack of intimacy and a decrease in relationship satisfaction (22). Reviews show Sexual satisfaction is associated withrelationship quality; indeedthereis a clinical consensus that sexual dissatisfaction is an indicator of relationship difficulties (23). According to Handoga et al (24)., there is a meaningful and strong relationship between sexual satisfaction and relationship satisfaction. With the onset of menopause, the feeling of satisfaction with life decreases, and the gap between an individual's desires and objective realities leads to a decrease in the level of satisfaction (25). Researchers' findings indicate that women in menopause try to avoid sexual relationships and reduce their intimate relationship with their spouse due to concerns about their sexual conditions. However, the more concerned and fearful they are, the less intimate they feel (26). Also, Yam (27) Studies have shown that satisfaction with a relationship has an indirect but significant impact on life satisfaction. In other words, a decrease in relationship satisfaction can harm life satisfaction. Esfahani et al (28) Showed that relationship satisfaction directly affects social interest in couples.

Different studies have shown that attention to psychological therapies is inevitable in the treatment of sexual disorders. Researchers believe that integrated approaches provide a greater potential for helping individuals with psychological problems in different circumstances (29).

Cognitive-behavioral activation therapy is one of the many therapeutic approaches that emerged from the third wave of psychotherapy (30). Behavioral activation therapy is a treatment that focuses on the relationship between a person's behavior and mood with emphasize on the idea that changes in a person's mood lead to behavioral changes(31).

As a valid short-term intervention, this treatment emphasizes on improving the quality of life and reducing negative emotions in individuals (29). The goal of behavioral activation is to increase regular activity so that it helps clients to connect more with the available sources of reward in their lives and solve their life problems (32). Behavioral activation therapy is a structured therapeutic process that increases behaviors that enhance an individual's contact with

environmental reinforcing contingencies (33). Research results indicate the effectiveness of third-wave psychotherapeutic approaches in increasing intimacy and sexual satisfaction. For example, Bonita (34) Demonstrated that behavioral activation therapy reduces depression and increases sexual satisfaction. Another study showed that third-wave psychotherapeutic interventions, including behavioral activation therapy, had a significant impact on improving overall emotional, cognitive, physical, sexual, relational, social, recreational, spiritual, and intellectual dimensions (35). Persian scholars Qamari and Sheikhul-Islami (36), also demonstrated the effectiveness of behavioral activation therapy on marital satisfaction and sexual performance of couples. Additionally, a study conducted by Eisanezhad Boshehri and Dasht Bozorgi (37) showed that behavioral activation therapy can increase the level of intimacy and sexual satisfaction in women during menopause.

However, as there are numerous variables associated with sexual desire/arousal disorder, and according to research studies on the effectiveness of behavioral activation therapy on sexual inefficiency beliefs and relationship satisfaction in menopausal women with sexual desire/arousal disorder, no significant results were found. Considering the fact that women face numerous challenges during menopause and on average spend one-third of their lives after menopause, the existence of effective treatment methods for reducing psychological symptoms of menopause is essential. Therefore, based on the findings and literature review, this study aimed to determine the effectiveness of behavioral activation therapy on sexual inefficiency beliefs and relationship satisfaction in menopausal women with sexual desire/arousal disorder.

Methods

The present study was aimed at examining the effectiveness of a semi-experimental approach with pre-test, post-test, and follow-up measures, utilizing a control group. The statistical population consisted of all menopausal women with sexual desire/arousal disorder aged over 50 years who was referred to specialized treatment centers for sexual disorders in Isfahan city in 2023. The research design was both practical and methodological. Out of all menopausal women with sexual desire/arousal disorder aged over 50 years who had referred to specialized treatment centers for sexual disorders in Isfahan city in 2023, a total of 30 women were selected as the sample for this study. These women were diagnosed with sexual dysfunction through clinical psychological interviews and obtaining a sexual performance score of less than 28 on the Rosen Female Sexual Function Index. They were selected using purposive sampling method based on certain criteria, and were randomly assigned to either the experimental or control group in equal proportions. The inclusion criteria were menopausal women who had passed at least 6 months since menopause, were over 50 years old, had sexual desire/arousal disorder, did not use any medication or drug interventions, and did not receive any concurrent therapeutic interventions. The exclusion criteria were missing at least 2 intervention sessions, having other sexual dysfunction disorders besides sexual desire/arousal disorder, and early menopause. This study was approved by the ethics committee of Islamic Azad University, Khurasgan Branch with the code (IR.IAU.KHUISF.REC.1401.408). The code of the clinical trial research license (IRCT) for this study is IRCT20230524058276N1.

Materials

The Sexual Dysfunctional Beliefs Questionnaire

This scale was used to collect data in pre-test, post-test, and follow-up stages, developed by Nobre, Pinto-Gouveia (38). The questionnaire includes the most important myths and false beliefs present in the sexual literature of both women and men. Each of the original versions for women and men contains 40 items, but due to cultural and religious differences, some of the items were removed from the original questionnaire. Therefore, the questionnaire is usable for women after removing items numbered (32, 28, 27, 7, 6, 4, 2), consisting of 33 items and 6 subscales, including sexual conservatism, sexual desire and pleasure as sin, beliefs related to age, beliefs related to body image, emotional superiority to sexual relationships, and maternal superiority to sexual relationships. The questionnaire was developed based on a 5-point Likert

scale (1=completely disagree, 5=completely agree). Scoring in this questionnaire was done directly, and a higher score indicates a greater influence of ineffective sexual beliefs on women's sexual performance (39). The test-retest reliability and internal consistency were reported as 0.81 and 0.82, respectively. This questionnaire was also able to distinguish between clinical and healthy populations (40). In Iran, the Cronbach's alpha coefficient for the entire scale was found to be 0.83(41). In the present study, the reliability of the questionnaire was obtained by Cronbach's alpha coefficient as 0.96.

Relationship Satisfaction Questionnaire

This scale was used for data collection in pre-test, post-test, and follow-up phases, which was developed by Burns and Sayers (42). The questionnaire consists of 7 items aimed at measuring satisfaction in the closest relationship in adulthood. This measure includes communication and honesty, intimacy and closeness, conflict resolution, satisfaction with one's role in the relationship, satisfaction with the other's role in the relationship, and overall satisfaction with the relationship (43, 44). Burns and Sayers (42) developed a questionnaire consisting of 7 items aimed at measuring satisfaction in the closest relationship in adulthood. The scores of this questionnaire range from 0-10, indicating extreme dissatisfaction, 11-20 indicating dissatisfaction, 21-25 indicating relative dissatisfaction, 26-30 indicating somewhat dissatisfaction, 31-35 indicating somewhat satisfaction, 36-40 indicating relative satisfaction, and 41-42 indicating extreme satisfaction. Individuals with a score of 31 or higher are considered to be those who will experience satisfaction in their relationship. Regarding validity, they reported convergent validity of the relationship satisfaction scale with the marital adjustment scale (0.80) and with the quality of marriage index (0.91)(43). Heyman et al. (43) reported a split-half validity of 0.51 for the Relationship Satisfaction Scale with various psychological distress scales. The internal consistency reliability of the Relationship Satisfaction Scale was found to be acceptable with a Cronbach's alpha coefficient of 0.97. Similarly, in Iran, Gheisari and Karimian (45) Obtained a Cronbach's alpha coefficient of 0.81. In the present study, the reliability of the questionnaire was established through Cronbach's alpha coefficient of 0.97.

The Female Sexual Function Index

The Female Sexual Function Index (FSFI) is used to diagnose sexual desire/arousal disorder in menopausal women and was developed by Rosen (46). This index consists of 19 items in 6 dimensions, including desire, arousal, lubrication, orgasm, satisfaction, and pain. Respondents report the frequency of sexual dysfunction for each item on a 5-point Likert scale ranging from 0 (no sexual activity) to 5 (always or almost always). Each individual's score in this index is calculated by summing the scores of the relevant items in each dimension and multiplying the sum by the coefficient of each dimension. The total score for an individual is obtained by adding the scores of all 6 dimensions, with a minimum score of 2 and a maximum score of 36. A score of less than 28 is considered undesirable performance (47). Rosen et al (46) Reported the reliability of this index using internal consistency with a Cronbach's alpha coefficient of 0.82. In Iran, Mohammadi, et al (47) Reported the reliability of this index using internal consistency with a Cronbach's alpha coefficient of 0.92 for the total score and 0.70, 0.90, 0.90, 0.91, 0.76, and 0.88 for the desire, arousal, lubrication, orgasm, satisfaction, and pain dimensions, respectively.

Intervention

The behavioral activation therapy, designed by Dimidjian and colleagues (48), was utilized as an intervention for the experimental group. The therapy consisted of eight sessions, each lasting 90 minutes, and a follow-up session was conducted 45 days later. Table 1 provides a detailed description of the sessions. The data was analyzed using repeated measures analysis of variance and SPSS-23 software.

Results

The descriptive information of research variables has been presented in Table 2. As shown in Table 2, the mean scores of the research variables in the intervention groups (behavioral activation therapy) had a greater change in post-test and follow-up compared to pre-test than the control group. Furthermore, the use of parametric repeated measures tests requires adherence to

several initial assumptions, including normality of scores, equality of variances, and equality of covariance matrices.

Table 1. Sessions and Content of Dimidjian and Colleagues' (48) Behavioral Activation Therapy**.**

Session	Contents
1	Introduction and establishment of therapeutic relationship, the importance and goal of activating therapeutic intervention, teaching effective communication skills, and simple behavioral contracts are taught.
2	Activation of behavior with a focus on interaction between the individual and the environment based on principles of silence, shaping, extinction, and cognitive review, attentional wandering, procedural skills, and observational thinking are taught. Task presentation, assessment, and feedback are also provided.
3	The healing processes are taught with four recommended topics in the general field of disease, including selecting the appropriate treatment method based on the individual's condition, motivational issues, interpersonal interactions, and utilizing the experiences of others. Task presentation, assessment, and feedback are also provided.
4	The form of using positive reinforcement through expressing positive and hopeful sentences is taught, along with presenting assignments, reviewing and giving feedback
5	the use of metaphor in the process of teaching positive verbal reinforcement is taught, along with the presentation of assignments, review, and feedback
6	Cognitive reconstruction, psychological and social dimensions of coping skills, assertiveness skills, and treatment in case of relapse are taught in addition to providing assignments, feedback and review during the process. Clients are also encouraged to seek the help of a psychologist if needed.
7	Problem-solving skills are taught, which involve defining the problem, identifying inhibitory factors for problem-solving, the problem-solving process, committing to executing the solution, planning for the best solution execution, and executing the best solution. Providing assignments and feedback are also included.
8	Summarizing, condensing, and teaching preventative strategies.
Follow-up	Reviewing and evaluating exercises and receiving feedback.

Table 2. Descriptive statistics of research variables by categorizing them into two groups and three stages of research**.**

Variable	Group	Pre-test		Post-test		Follow-up	
		Average	Standard Deviation	Average	Standard Deviation	Average	Standard Deviation
Dysfunctional Beliefs	Experimental	158.07	17.35	106.93	18.84	106.47	20.04
	Control	154.1	13.2	158.66	15.49	163.63	20.76
Sexual conservatism	Experimental	46.22	5.66	27.93	7.01	28.67	8.01
	Control	46.07	3.55	46.93	4.96	49.06	5.25
Motherhood primacy	Experimental	17.86	3.58	15.13	2.77	15.46	2.44
	Control	16.8	2.73	17.33	2.89	17.47	2.87
Age-related beliefs	Experimental	22.26	2.6	11.73	3.34	12.1	4.24
	Control	21.1	2.61	21.67	2.32	22.47	2.64
Sexual desire as a sin	Experimental	23.6	2.38	15.5	3.77	15.66	4.33
	Control	22.1	4.65	22.73	4.71	23.23	5.25
Denying affection primacy	Experimental	11.53	1.55	10.93	1.53	10.6	13.13
	Control	12.54	2.66	13.1	2.92	1.35	2.89
Body image belief	Experimental	12.67	2.28	7.93	2.34	8.13	2.79
	Control	11.26	2.6	12.1	2.47	12.46	2.82
Relationship Satisfaction	Experimental	6.8	3.71	25.53	6.34	29.1	4.67
	Control	7.47	3.75	7.07	4.86	6.4	5.3

population is zero. Therefore, the Shapiro-Wilk test was used to test this assumption. The results of this assumption regarding the research variables showed that the null hypothesis of normality in score distribution for both groups in all three stages (pre-test, post-test, and follow-up) remains (all significant levels are greater than 0.05).The results of the Shapiro-Wilk test for examining normality in score distribution in both groups, the Levene's test for equality of score variances, and the Mauchly's test for uniformity of variance-covariance matrix in two groups are presented.

In cases where these assumptions are met and confirmed, these tests can be used, even with sample sizes less than 40 and unequal group sizes(49).The purpose of examining the normality assumption is to determine whether the distribution of scores is similar to that of the population under investigation. The current assumption is that the observed difference between the sample group's score distribution and the normal distribution in the

Table 3. Results of the analysis of the effects between the experimental and control groups in the research variables.

Variable	Effect	Source	SS	DF	MSE	F	P-Value	Effect Size	Power
Dysfunctional Beliefs	Between Subjects	Group	27457.6	1	27457.6	35.46	0/001	0.559	1.000
	Within Subjects	Time Effect	9857.756	1.24	7931.535	48.98	0/001	0.636	1.000
		Time Effect × Group	17220.6	1.24	13855.668	85.57	0/001	0.753	1.000
Sexual conservatism	Between Subjects	Group	3894.044	1	3894.044	38.79	0/001	0.581	1.000
	Within Subjects	Time Effect	1273.756	1.266	116.225	34.82	0/001	0.554	1.000
		Time Effect × Group	1934.689	1.266	1528.34	52.89	0/001	0.654	1.000
Motherhood primacy	Between Subjects	Group	24.54	1	24.54	1.21	0.279	0.042	0.187
	Within Subjects	Time Effect	2.15	1.356	14.86	3.89	0.04	0.122	0.56
		Time Effect × Group	50.28	1.356	37.087	9.71	0.002	0.258	0.923
Age-related beliefs	Between Subjects	Group	915.21	1	915.21	55.32	0/001	0.664	1.000
	Within Subjects	Time Effect	439.822	1.578	278.733	39.766	0/001	0.587	1.000
		Time Effect × Group	658.489	1.578	417.311	59.536	0/001	0.68۰/	1.000
Sexual desire as a sin	Between Subjects	Group	435.6	1	435.6	9.11	0.005	0.246	0.83
	Within Subjects	Time Effect	242.022	2	121.011	32.69	0/001	0.539	1.000
		Time Effect × Group	406.067	2	203.033	54.86	0/001	0.662	1.000
Denying affection primacy	Between Subjects	Group	84.1	1	84.1	6.407	0.017	0.186	0.705
	Within Subjects	Time Effect	0.089	2	0.044	0.04	0.961	0.001	0.056
		Time Effect × Group	11.46	2	5.73	5.19	0.009	0.157	0.809
Body image beliefs	Between Subjects	Group	122.5	1	122.5	7.55	0.01	0.213	0.756
	Within Subjects	Time Effect	68.88	2	34.44	19.54	0/001	0.441	1.000
		Time Effect × Group	157.067	2	78.53	44.55	0/001	0.614	1.000
Relationship Satisfaction	Between Subjects	Group	4082.4	1	4082.4	96.59	0/001	0.775	1.000
	Within Subjects	Time Effect	1976.422	2	988.211	81.42	0/001	0.744	1.000
		Time Effect × Group	2311.267	2	1155.633	95.22	0/001	0.773	1.000

Levin's assumption based on the equality of variances in both groups for the research variables in all three stages has been confirmed (significant level greater than 0.05).

However, the assumption of uniformity of covariance matrices using the Mauchly's test has been rejected for the variables of dysfunctional sexual beliefs, dimensions of conservatism and sexual passivity, beliefs related to masturbation and age-related beliefs ($p<0.05$). Therefore, the Greenhouse-Geisser test is used to examine the research hypotheses for this variable, while the sphericity assumption is assumed for the other variables using the repeated measures ANOVA test. The comparison results between the experimental and control groups in the research variables are presented in Table 3.

The results of the Bonferroni post-hoc test for comparing the experimental and control groups in the research variables at the post-test and follow-up stages are presented in Table 4.

As shown in Table 4, significant differences have been obtained between the experimental or active treatment group and the control in the post-test phase in beliefs about sexual inefficacy and all its dimensions,

Table 4. Results of the post-hoc analysis for comparing the groups based on the research variables at the post-test and follow-up stages**.**

Variable	Post-test			Follow-up		
	Mean Difference	P-value	Effect Size	Mean Difference	P-value	Effect Size
Dysfunctional beliefs	-51.73	0.001	0.667	57.13	0.001	0.697
Sexual conservatism	19	0.001	0.685	20.4	0.001	0.635
Motherhood primacy	-2.2	0.04	0.139	-2	0.052	0.131
Age-related beliefs	-9.93	0.001	0.761	-10.46	0.001	0.701
Sexual desire as a sin	-7.13	0.001	0.428	-7.67	0.001	0.404
Denying affection primacy	-2.06	0.022	0.173	-2.73	0.003	0.282
Body image beliefs	-4.07	0.001	0.432	-4.33	0.001	0.389
Relationship satisfaction	18.47	0.001	0.768	22.6	0.001	0.846

including sexual conservatism and passivity, motherhood primacy, beliefs related to age, sexual desire as a sin, denying affection primacy, body image beliefs, as well as in the relationship satisfaction variable. Also, group differences in the follow-up stage have been obtained except for the dimension of beliefs related to masturbation in the rest of the research variables, dysfunctional sexual beliefs and other dimensions thereof, as well as relationship.

Based on the findings obtained in Table 4, in the analysis between the experimental group , the average scores of the variables of dysfunctional sexual beliefs ($F=35.46$, $p<0.001$), sexual conservatism ($F=38.79$, $p<0.001$), beliefs related to age ($F=55.32$, $p<0.001$), sexual desire and pleasure as sin ($F=9.11$, $p<0.001$), Denying affection primacy($F=6.4$, $p<0.05$), body image beliefs ($F=7.55$, $p<0.01$), as well as in the variable of relationship satisfaction ($F=96.59$, $p<0.001$), in the experimental group (activation therapy) and control show significant differences.

Based on the result of the intra-analytical analyses, the main effect of time, except for in Denying affection primacy, is meaningful in other research variables, indicating that there are significant differences in general between the mean scores of sexual inefficiency beliefs and their dimensions as well as relationship satisfaction in the re post-test. and follow-up stages differ significantly between the two groups. search stages. The result showed that the interaction effect of time and group membership is also significant in the variable of dysfunctional sexual beliefs ($F=85.57$, $p<0.001$), conservatism and sexual passivity ($F=52.89$, $p<0.001$), Motherhood primacy

($F = 9.71$, $p < 0.01$), beliefs related to age ($F = 59.53$, $p < 0.001$), sexual desire as a sin ($F = 54.86$, $p<0.001$), Denying affection primacy ($F=5.19$, $p<0.01$), Body image beliefs ($F=44.55$, $p<0.001$), as well as in the variable of relationship($F=95.22$ $p<0.001$) satisfaction, indicating that the trend of changes in inefficient belief scores and its dimensions as well as relationship satisfaction in pre-test.

In conclusion, it can be said that activation therapy has had a significant effect on improving dysfunctional beliefs and relationship satisfaction in menopausal women, and the effect of treatment have also remained in the follow-up stage. Additionally, the mentioned treatment has improved all dimensions of dysfunctional beliefs in the post-test stage and the effects of treatment have also remained in follow-up stage for motherhood primacy beliefs in order dimensions.

Discussion

This study aimed to evaluate the effectiveness of behavioral activation therapy on dysfunctional sexual beliefs and relationship satisfaction in menopausal women with sexual desire/arousal disorder. The results of this study showed that behavioral activation therapy had a significant impact on the variables of dysfunctional sexual beliefs and relationship satisfaction over time and group membership. The treatment effects also remained significant during the follow-up stage. In other words, the intervention led to improvements in dysfunctional sexual beliefs and relationship satisfaction in the participants**.**

In accordance with the results of this study, although

behavioral activation therapy did not have a significant effect on sexual self-efficacy and satisfaction in menopausal women with sexual desire/arousal disorder, the findings of this study are consistent with the results of studies conducted by Karimi Rahjerdi et al (50), Ghasemi, Rezaei, and Sadeghi (51), Bakhtyari and Sohrabi (52), Eisanazhad Jahromi and Dasht Bozorgi (37), Sarabi, Parvizi, and Kakabraei (53), Rosen et al(54), and Russell (55).

The effectiveness of behavioral activation therapy in improving sexual self-efficacy in menopausal women with sexual desire/arousal disorder can be explained as follows: behavioral activation therapy is a fundamental form of treatment that activates individuals behaviorally and socially, prepares them for complete engagement in the treatment process by reducing symptoms of depression, anxiety, psychological stress, and negative beliefs(56). This treatment is a structured process that increases an individual's contact with environmental attachments and leads to improvements in mood, thinking, reduced avoidance, and negative evaluations. This treatment does not emphasize positive or negative thinking content or beliefs, but instead aims to change cognitions that repeat negative thinking patterns and increase anxiety or lead to increased negative beliefs. Additionally, through strategies such as presenting principles of silence, shaping, elimination, mental review, periodic distraction, training behavioral skills, and observational thinking, this treatment reduces negative beliefs and increases positive beliefs such as cognitive self-awareness. Since negative beliefs affect information processing and lead to emotional responses such as anxiety, shame, and guilt that negatively affect sexual response, this treatment helps individuals through four stages of reviewing current activities, creating a rewarding activity list, planning activities, and ultimately doing planned activities to prevent shame, guilt, and anxiety and improve their information processing.

Therefore, with the help of this treatment, menopausal women with sexual desire/arousal disorder can enhance their self-efficacy and positive beliefs, learn how to identify and prevent negative consequences, and are taught how to reconstruct negative and irrational attitudes and beliefs, which ultimately leads to improved sexual self-efficacy. Additionally, behavioral activation therapy is effective in moderating cognitive strategies such as self-blame, acceptance, and especially rumination, and by changing behavior, it leads to changes in beliefs and cognitive schemas in menopausal women with sexual desire/arousal disorder**.**Also, based on behavioral theories(57), one of the causes of disorders, including sexual disorders, is disruption of order in daily activities, which behavioral activation treatment causes daily activities to be arranged, which reduces negative psychological characteristics and increases positive psychological characteristics and ultimately increase the positive perception of sexual relations.

In explaining the effectiveness of behavioral activation therapy on satisfaction with relationships in menopausal women with sexual desire/arousal disorder, it can be said that behavioral activation therapy is a cognitive-behavioral treatment based on cognitive and behavioral distortions in patients with cognitive impairments. Through this psychological-educational approach, patients learn to actively change their lifestyle towards improvement (58). This treatment increases behaviors that are likely to lead to rewards in menopausal women with sexual desire/arousal disorder. These rewards may be internal (pleasure or a sense of achievement) or external (social attention). When a menopausal woman with sexual desire/arousal disorder is rewarded, it helps improve her mood, which in turn affects her relationships. By learning how to break down difficult tasks into simpler elements, these women can achieve more lasting successes and rewards, which ultimately facilitates positive reinforcement and helps improve the patient's mood, ultimately leading to improved marital relationships and satisfaction with the relationship.

This treatment teaches individuals to change their lifestyle and create new rules in their lives. For example, instead of avoiding coping strategies, they can use them as alternatives to avoidant behaviors, which leads to improved relationships with their spouse and increased feelings of satisfaction and ultimately improved satisfaction with the relationship. Also, this method teaches the strategy of breaking difficult tasks into simpler elements. Therefore, by implementing these strategies, women can achieve

success in a progressive manner, and this facilitates the achievement of positive reinforcement. This issue first improves social relations and receives positive reinforcement, and finally improves intimacy and in some way forms satisfaction in the relationship. In fact, behavioral activation therapy, through targeted planning and monitoring of activities and the provision of new activities as alternatives to avoidant behaviors, even by referring patients, promotes growth and development in individuals and ultimately leads to satisfaction with the relationship.

Limitations of this study include its cross-sectional design and its limited scope to the city of Isfahan. Additionally, the effectiveness of this therapeutic approach was not compared to other treatment methods. Furthermore, this study only focused on menopausal women with sexual desire/arousal disorder, thus it is recommended that future studies be conducted on different samples and at different time intervals. It is also suggested that comparative studies be conducted on this therapeutic approach with other treatments in this area.

Conclusion

In conclusion, it can be stated that behavioral activation therapy had a significant effect on improving sexual inefficacy beliefs and satisfaction with relationships in menopausal women with sexual desire/arousal disorder in the post-test phase, and this effect remained in the follow-up phase. It can be argued that behavioral activation therapy is effective in improving sexual inefficacy beliefs and satisfaction with relationships in menopausal women with sexual desire/arousal disorder.

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Conflict of Interest

The authors declare that they have no conflict of interest.

References

1.Aqeel M, Arbab KB, Akhtar T. Psychological problems and its association to other symptoms in menopausal transition. Pakistan Journal of Psychological Research. 2018;33:507-19.

2.Khavandizadeh Aghdam S, Kazemzadeh R, Mahfouzi Y. Effectiveness of Education on Life Style in Menopausal Women. sjimu. 2018;26(1):43-51.

3.Yazdkhasti M, Simbar,M & Abdi,F. Empowerment and Coping Strategies in Menopause Women: A Review. Iran Red Crescent Med J. 2015;17(3):e18944.

4.Alirezaei S, Safaei M, Rajabzadeh S. The Relationship between sexual performance and attitude toward menopause in postmenopausal women referred to health centers of torbat heydariyeh in 2017. Yektaweb_Journals. 2020;14(4):510-9.

5.Sadock B AS, Sadock V. Pocket handbook of clinical psychiatry 6th edition.translated by: Rezaei F. Tehran: Arjmand. 2018.

6.Ohadi B. Feelings and human sexual responses. 7th Edition. Tehran: Naghsh Khorshid Publications;. 2003.

7.Mohagheghian M, Bagher Kajbaf, M. ., & Maredpour, A. The Effectiveness of Acceptance and Commitment Therapy on Sexual arousal, Intimacy and Self-concept of Female Sexual Interest/Arousal Disorder, a Randomized Controlled Trial. International Journal of Applied Behavioral Sciences,. 2021;8:50-9.

8.Mundhra R, Bahadur A, Khoiwal K, Kumar M, Chhetri SS, Chaturvedi J. Female sexuality across the menopausal age group: A cross sectional study. European Journal of Obstetrics & Gynecology and Reproductive Biology: X. 2024;21:100287.

9.American Psychiatric Association D-TF. Diagnostic and statistical manual of mental disorders: DSM-5™ (5th ed.). American Psychiatric Publishing, Inc. 2013.

10.McCabe MP, Sharlip ID, Lewis R, Atalla E, Balon R, Fisher AD, et al. Incidence and Prevalence of Sexual Dysfunction in Women and Men: A Consensus Statement from the Fourth International Consultation on Sexual Medicine 2015. The journal of sexual medicine. 2016;13(2):144-52.

11.Karimi FZ, Pourali L, Hasanzadeh E, Nosrati SF, Pouresmaeili N, Abdollahi M. Sexual Dysfunction in Postmenopausal Women. Acta Medica Iranica. 2021;59(12):720-5.

12.Clarke MJ, Marks AD, Lykins AD. Effect of normative masculinity on males' dysfunctional sexual beliefs, sexual attitudes, and perceptions of sexual functioning. Journal of sex research. 2015;52(3):327-37.

13.Khatami SMH, Bahadorkhan, E., Bondar Kakhki, Z., Bayanfar, F. Predicting emotional divorce based on components of sexual dysfunctional beliefs in married women. medical journal of mashhad university of medical sciences. 2020;62(5.1):786-97.

14.Sasanpour M, Azh, N & Alipour, M. dysfunctional beliefs in postmenopausal rural women, the second national conference on promoting individual, family and community health, Isfahan,. 2021.

15.Balanean R. Procedia Social and Behavioral Sciences Postmodern psycho-social influences on the dysfunctional sexual beliefs of the Romanian youth. Procedia - Social and Behavioral Sciences. 2011;31:714-8.

16.Nobre PJ, Pinto-Gouveia J. Dysfunctional sexual beliefs as vulnerability factors to sexual dysfunction. Journal of sex research. 2006;43(1):68-75.
17.mohamadi S, Ozgoli G, Alizadeh s, Borumandnia n, Abbas A. The effect of modification of dysfunctional sexual beliefs on promotion of quality of pregnant women sexual life in Besat hospital. Research-in-Medicine. 2017;41(3):166-74.
18.Irandoost R Ma-ZS, Sohrabi Smroud Fz& Ahi Q. The causal model of relationships between sexual performance based on sexual dysfunction beliefs with the mediation of psychological helplessness and dimensions of marital intimacy. Educational culture of women and family. 2017;13(45):135-52.
19.French JE, Altgelt EE, Meltzer AL. The implications of sociosexuality for marital satisfaction and dissolution. Psychological Science. 2019;30(10):1460-72.
20.Adamczyk K. Development and Validation of a Polish-Language Version of the Satisfaction with Relationship Status Scale (ReSta). Current Psychology. 2019;38(1):8-20.
21.Qazlesfalu M T, A, Mirza M, Vashghani Farahani M. Factorial structure, reliability and validity of the investment model questionnaire in relationships between couples. Social health. 2016;5(1):57-66.
22.Anders A, editor Sexual Communication Anxiety, Attachment, Relationship Satisfaction, and Sexual Satisfaction in Auburn. university undergraduates.2008.
23.Kazemi M, & Zanganeh Motlagh, F. Prediction of Marital Dissatisfaction Based on the Resilience, Marital Commitment and Rumination. nternational Journal of Applied Behavioral Sciences,. 2020;7(4):1-10.
24.Handoga MH, R. Huffman, L. Lackey, B. Lerch, M. Nunn, J & West, E. Relationship Between Sexual Satisfaction and Relationship Satisfaction Based on Equity.Radford University December , . 2008.
25.Bassak Nejad S, Ebadeh Avazi P, Mehrabizadeh Honarmand M. Comparison of Sexual Intimacy, Life Satisfaction and Coping Strategies with Postmenopausal and Non-Menopausal Women Referring To Health Centers. Avicenna-J-Nurs-Midwifery-Care. 2019;26(6):389-96.
26.Ussher JM, Perz J, Parton C. Sex and the menopausal woman: A critical review and analysis. Feminism & Psychology. 2015;25(4):449-68.
27.Yam FC. The Relationship Between Partner Phubbing and Life Satisfaction: The Mediating Role of Relationship Satisfaction and Perceived Romantic Relationship Quality. Psychological reports. 2023;126(1):303-31.
28.Esfahani A, Heidari, H., pirani, Z., Davodi, H. The Structural Model of Predicting Social Interest based on Interpersonal Relationships, and Satisfaction of the Relationship with the Mediating Role of Love in Women. Journal of Applied Family Therapy. 2023;4(4):17-34.
29.Jenness JL, DeLonga K, Lewandowski RE, Spiro C, Crowe K, Martell CR, et al. Behavioral Activation as a Principle-Based Treatment: Developments from a Multi-Site Collaboration to Advance Adolescent Depression Treatment. Evidence-Based Practice in Child and Adolescent Mental Health. 2023;8(1):55-72.
30.Russo GB, Tirrell E, Busch A, Carpenter LL. Behavioral activation therapy during transcranial magnetic stimulation for major depressive disorder. J Affect Disord. 2018;236:101-4.
31.Kumar D, Corner S, Kim R, Meuret A. A randomized controlled trial of brief behavioral activation plus savoring for positive affect dysregulation in university students. Behaviour research and therapy. 2024:104525. .
32.Dimidjian S, Goodman SH, Sherwood NE, Simon GE, Ludman E, Gallop R, et al. A pragmatic randomized clinical trial of behavioral activation for depressed pregnant women. Journal of consulting and clinical psychology. 2017;85(1):26-36.
33.Soucy Chartier I, Provencher MD. Behavioural activation for depression: efficacy, effectiveness and dissemination. J Affect Disord. 2013;145(3):292-9.
34.AG B. Computerized behavioral activation treatment for major depressive disorder and the effects on sexual desire. [PhD Thesis]. Western Michigan University. 2013.
35.Kardan-Souraki M, Hamzehgardeshi Z, Asadpour I, Mohammadpour RA, Khani S. A Review of Marital Intimacy-Enhancing Interventions among Married Individuals. Global journal of health science. 2016;8(8):53109.
36.Parsi R, Qamari Kiwi, H & Sheikhul-Islami, A. prediction of marital satisfaction of couples based on behavioral activation inhibition system, World Conference on Psychology and Educational Sciences, Law and Social Sciences at the beginning of the millennium. 2015.
37.Eisanezhad Boshehri S, DashtBozorgi Z. Effectiveness of Behavioral Activation Treatment on Marital Intimacy and Sexual Satisfaction of Women During Premenopause. Iran-J-Health-Educ-Health-Promot. 2018;6(1):63-71.
38.Nobre P, Pinto-Gouveia J, Francisco, Gomes A. Sexual Dysfunctional Beliefs Questionnaire: An instrument to assess sexual dysfunctional beliefs as vulnerability factors to sexual problems. Sexual and Relationship Therapy. 2003;18.
39.Dashestan Nejad A, Eshghi, Ronak, Afkhami, Imane. Investigating the effect of sexual skills training on the ineffective sexual beliefs of couples about to get married in Isfahan. Journal of Preventive Nursing and Midwifery Care. 2014;4(2):14-22.
40.Abdolmanafi A, Azadfallah P, Fata L, Roosta M, Peixoto MM, Nobre P. Sexual Dysfunctional Beliefs Questionnaire (SDBQ): Translation and Psychometric Properties of the Iranian Version. The journal of sexual medicine. 2015;12(8):1820-7.
41.Mohammadi Morchegani S, Abolghasemi A, Kafi Masouleh M. The comparison of disruptive beliefs ad sexual kowled and attitudes in women with and without sexul interest/arousal disorder. UNMF. 2020;18(4):306-17.
42.Burns DS, S. L. . Cognitive and affective components of marital satisfaction: 1. Development and validation of a brief relationship satisfaction scale. Unpublished manuscript. 1988.
43.Heyman RE SS, Bellack AS. Global Marital Satisfaction Versus Marital Adjustment: An Empirical Comparison of Three Measures. Journal of Family Psychology. 2001;8(4).
44.M DK. God s Shield: The Relationship Between God Attachment, Relationship satisfaction, And Adult Child of Alcoholic (ACOA) Status a Sample of Evangelical Graduate Counseling Students. Liberty University. 2009.
45.Gheisari S, Karimian, N. . A causal model based on relationship satisfaction, sexual satisfaction, marital quality, anxiety of sexual relationship, sexual assertiveness, and the frequency of intercourse in female maried students of Bandarabbas. Counseling Culture and Psycotherapy. 2013;4(16):85-106.
46.Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, et al. The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. Journal of sex & marital therapy. 2000;26(2):191-208.
47.Mohammadi k, Heydari M, Faghihzadeh S. The Female Sexual Function Index (FSFI): validation of the Iranian version. payeshj. 2008;7(3):0-.
48.Dimidjian S, Hollon SD, Dobson KS, Schmaling KB, Kohlenberg RJ, Addis ME, et al. Randomized trial of behavioral activation, cognitive therapy, and antidepressant medication in the acute treatment of adults with major depression. Journal of consulting and clinical psychology. 2006;74(4):658-70.
49.Molavi H. The camputer program for social sciences Esfahan. puyesh andisheh. 2007
50.Rahjerdi M, Sodani, M., Gholamzadeh jofre, M., Asgari, P.

Effectiveness of Behavioral Activation Therapy on Depression and Sexual Satisfaction in Patients with Type 2 Diabetes. Journal of Excellence in counseling and psychotherapy. 2022;11(41):1-10.
51.ghasemi n, rezaei f, sadeghi m. The Effectiveness of Cognitive-behavioral Therapy on Sexual Function and Quality of Marital Relationships in Women with Sexual Interest/Arousal Disorder. ijpn. 2022;10(3):78-87.
52.Bakhtyari M, Sohrabi, F. The effectiveness of behavioral activator group therapy on resiliency and metacognitive beliefs of opioid addicts. medical journal of mashhad university of medical sciences. 2021;64(3):3455-68.
53.Sarabi P, Parvizi, F, Kakabraei, K. The effectiveness of sexual cognitive behavioral psychotherapy on sexual performance, dysfunctional beliefs, knowledge and sexual self-confidence of women with sexual disorders. Cognitive Analytical Psychology Quarterly. 2018;10(37):9-27.
54.Rosen NO, Dubé JP, Corsini-Munt S, Muise A. Partners Experience Consequences, Too: A Comparison of the Sexual, Relational, and Psychological Adjustment of Women with Sexual Interest/Arousal Disorder and Their Partners to Control Couples. The journal of sexual medicine. 2019;16(1):83-95.
55.Russell VM, Baker LR, McNulty JK. Attachment insecurity and infidelity in marriage: do studies of dating relationships really inform us about marriage? Journal of family psychology : JFP : journal of the Division of Family Psychology of the American Psychological Association (Division 43). 2013;27(2):242-51.
56.Loxton NJ, Dawe S. Alcohol abuse and dysfunctional eating in adolescent girls: the influence of individual differences in sensitivity to reward and punishment. The International journal of eating disorders. 2001;29(4):455-62.
57.Leahy RL HS, McGinn LK. Treatment plans and interventions for depression and anxiety disorders. 2nd ed. New York: Guilford Press. 2012.
58.Oh J, Lee E, Cha EJ, Seo HJ, Choi KH. Community-based multi-site randomized controlled trial of behavioral activation for patients with negative symptoms of schizophrenia. Schizophrenia research. 2023;252:118-26.