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Comparison of the Effectiveness of Metacognitive Therapy and Cognitive-Behavioral Therapy for Anxiety, Stress, Self-Esteem and Self-Management of Women Aged 25 To 45 with General Anxiety

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Abstract

Objective: This study aimed to compare the effectiveness of metacognitive therapy and cognitive-behavioral therapy on anxiety, stress, self-esteem and self-management in women aged 25 to 45 with generalized anxiety disorder.

Materials and Methods: The present study was a quasi-experimental study with pre-test, post-test and follow-up (two months) with a control group. The statistical population was all women aged 25 to 45 in Isfahan, who were selected using the convenience sampling method and randomly assigned to three groups. The first group received the revised version of Wells' metacognitive therapy (1911) and the second group received cognitive-behavioral training from Nasiani and Lali (2019), and the third group received no intervention in addition to a two-month follow-up period. In this study, the independent variables were metacognitive therapy and cognitive-behavioral therapy. The dependent variables were the subjects' scores at post-test and follow-up on the Anxiety, Stress, DOS-21 Questionnaire, Rosenberg's Self-Esteem Questionnaire (1989), and Hawthorne and Neck's Self-Management Questionnaire. All three groups completed the Anxiety, Stress, Self-Esteem, and Self-Management Questionnaires in three stages: pre-test, post-test, and follow-up. The first experimental group received metacognitive therapy in 10 90-minute sessions, and the second experimental group received cognitive-behavioral training in 10 90-minute sessions. The control group sessions did not receive any intervention during the study process. The data were analyzed using repeated measures analysis of variance with SPSS version 24 software. The results showed that there was a significant difference between the experimental and control groups, and both interventions had a significant positive effect on anxiety, stress, self-esteem, and self-management in women aged 25 to 45 with generalized anxiety disorder, and the effect of these therapeutic interventions was also stable in the follow-up phase ($P<0.001$). According to the results obtained, metacognitive therapy and cognitive-behavioral therapy can be used to improve anxiety, stress, self-esteem, and self-management in women aged 25 to 45 with generalized anxiety disorder.

Key words: Cognitive-behavioral utopia, metacognitive therapy, stress, anxiety, self-management, self-esteem, and generalized anxiety.

Introduction

Mental disorders are very common in the world and are considered one of the five most disabling conditions, along with diabetes, cancer, cardiovascular diseases, and chronic respiratory diseases, and have significant socio-economic consequences. Among mental disorders, generalized anxiety disorder is one of the most common disorders, which is characterized by uncontrolled worry and anxiety about daily events, restlessness, fatigue, difficulty concentrating, irritability, muscle tension, and sleep problems. Its prevalence in a one-year period has been reported to be approximately 3% in adults and between 2.5% and 7.5% in adolescents [20]. Currently, in modern society, anxiety is one of the most common mental health problems that affects many people. Anxiety is a common mental health disorder and can significantly affect the quality of life of individuals. In fact, it can be said that anxiety is a natural reaction to a factor that occurs and is considered threatening, but if its reaction and occurrence are inappropriate, both in terms of intensity and level of symptoms, anxiety becomes abnormal. In this context, women are often exposed to anxiety due to various pressures and demands. Experience in everyday life Every human being has their own anxiety that cannot be identified with others. Some are worried about losing something, worried about their environment, fear, bullying, some are worried about something they have not encountered. Anxiety is also a reaction to certain situations that are perceived as a threat and is something that occurs naturally in development, change, and newness.[12] Anxiety is an emotional state whose main characteristic is persistent and excessive worry and apprehension that is not appropriate to the situation and is difficult for the individual to control even in the absence of a stressful factor. This state is accompanied by increased activity of the autonomic nervous system and usually occurs following high stress. Stress is usually short-term and occurs in response to a known external stimulus, and the human body shows severe reactions to stressors due to changes in its natural balance.[9] Aristotle and Omidian. (2024) stated in their study that women with anxiety disorders suffer from difficulty in functioning, increased health costs, and an undesirable quality of life. Most scientific studies on the epidemiology of mental disorders in Iran have concluded that generalized anxiety disorder is the most common anxiety disorder and has a high incidence with other disorders. This disorder is specifically characterized by extreme and persistent worry, in which anxiety is directed at all events in daily life, and women account for about two-thirds of people with this disorder.[2]

In today's world, a life without stress is inevitable and the only way to deal with it is through close communication with family and friends outside the workplace. Family and relationships also play an important role in increasing the stress of mothers at home. The main factors of this stress, as shown in the results of this study, are: anxiety about the child's future, husband's job insecurity and marital disputes. The results show that stress has a great impact on people's health such as eating disorders. , stomach upsets, sleep problems, difficulty concentrating, etc. The four major stressors at home can only be relieved through proper communication between husband and wife. In married life, husband and wife should support each other to prevent the consequences of stress.[37] Among the most common risk factors for developing mental health problems in women is stress. This population is particularly vulnerable to mental health problems due to their exposure to stress and multiple psychological traumas in the past years. In addition to existing inequalities (poverty, gender-based violence) that affect women's well-being, recent years have been marred by traumatic natural events.[30] Stress is a type of anxiety, mental pressure, worry, and fear that has a pervasive effect on daily behavior and the health of the organs. When a person is stressed, changes occur in their brain that cause mood and anxiety disorders. Stress and stressful events in life cause the production of myelin-forming cells and the production of fewer neurons compared to normal conditions, which ultimately disrupts the timing and balance of communication and may, in addition to the destruction of new neurons in the hippocampus of the brain, even lead to dementia over time.[18] Ghasemi Habashi, Mahmoud Aliloo, Esmaeil Pour, Bakhshi Pour, & Roodsari (2024) showed in their research that implementing metacognitive therapy led to a significant improvement in sleep quality and aggression in the post- test phase. Also, Khalil Nejadavati, Abbasi, and Hadinejad (2024) stated that metacognitive therapy had a significant effect on the believability of anxious thoughts and feelings in patients with generalized anxiety disorder.

Among the problems that women struggle with in the modern world, in addition to anxiety and stress, is self-esteem. In classical terms, self-esteem refers to a positive or negative attitude towards oneself. Self-acceptance, self-respect, and feelings of self-worth are all related to self-esteem. Self-esteem is about how much one values oneself as a human being.[31] Self-esteem is a powerful force within each of us and, at a higher level, encompasses an inherent feeling and a personal value that can be said to be the birthright of each individual. More precisely, self-esteem is: confidence in our ability to think and cope with the basic challenges of life; confidence in our right to be happy, to feel worthy, worthy, and a title for expressing our needs and desires so that we can enjoy the fruits of our efforts.[24] Self-esteem, defined as a subjective evaluation of oneself, can fluctuate in response to different experiences.[19] A review of eighty longitudinal studies found that low self-esteem acts as a risk factor for depression and anxiety, while anxiety is inversely related to self-esteem, depression has a smaller effect on self-esteem, and it has also been proven that self esteem is high during adolescence and tends to decline in old age. In a longitudinal study with 213 individuals, the authors reported a reciprocal relationship between self-esteem and social support, in which high self-esteem at age 36 predicted high social support 6 years later, at age 42, and vice versa. Hence, for better mental

health, adequate social support should be available, especially during childhood and middle age.[1,22] stated in their study titled "The Effectiveness of Metacognitive Interpersonal Approach Training on Rumination and Self-Esteem in Betrayed Women" that metacognitive interpersonal approach training reduced rumination and increased self-esteem in betrayed women.

Another intrapersonal variable examined in this study was self-management. It can be stated that the concept of self-management means that an individual can be at the highest level of personality functioning. At this level, an individual can manage his thoughts, emotions, and behavior with the greatest freedom. Self-management is discussed in two general dimensions: self-control and self- regulation. Self-control is associated with strict and dictatorial order and regulations.[32] Using digital resources for self-management Self- management, self-help, and self-care strategies may not be appropriate for everyone. Self-care has weak evidence, which may be due to a lack of clear definition in the literature. Some researchers argue that the societal emphasis on self-management rather than treatment by a mental health professional or support for an individual is influenced by a neoliberal agenda that prioritizes individualism over social support, and is among the mental health problems that need attention (Hayes, Fonagy, & Stapley, 2024). Self-management is the most important variable in social cognitive theory, defined as the confidence to take the necessary actions to achieve desired goals. Low self-esteem and self-management, high self-criticism, and dependence on other people are characteristics of people with social anxiety disorder. On the other hand, people with social anxiety are not only influenced by learned behavior patterns in their environment, but also directly by the automatic functioning of the brain and neurons.[26] Shojaei, Mohammadi Shahbolaghi, Fallahi Khoshknab, Vahedi, & Zabolipour (2024) showed in their study titled The Effect of a Self-Management Program Based on the Five-Factor Model on the Severity of Dyspnea and Self Management Ability in Elderly People with Chronic Heart Failure that one of the factors affecting Prevention of complications of chronic diseases is self-management, and self-management is the ability of a person to manage symptoms, treatment, physical and psychological consequences, and major changes in life with a chronic disease. In fact, the ability to self-manage is a fundamental issue in the elderly, which increases their abilities to manage, maintain, and promote health, and its reduction leads to a feeling of lack of independence and decision-making power.

One of the effective and efficient interventions that has been able to have a significant impact on improving such problems in the women's community and positively change the mental health of women in different societies is cognitive-behavioral therapy. In fact, it can be said that cognitive- behavioral therapy focuses on changing and challenging unconstructive cognitive distortions of incorrect thoughts, beliefs, and attitudes, and the defective behaviors that follow those distortions, and replacing maladaptive behaviors with adaptive ones. This treatment method tries to encourage the client to have a collaborative experience, and through it, the patient's own experiences are used in a series of behavioral experiments to assess the correctness or incorrectness of those beliefs. In a study among patients, it was shown that cognitive-behavioral therapy leads to a positive outlook, hope, and happiness, causes recovery and relieves tension, and a person with a positive outlook considers himself victorious, successful, valuable, wealthy, and acceptable.[29] In their study titled Psychological Intervention in Women Victims of Sexual Abuse by Comparing EMDR Psychotherapy and Cognitive Behavioral Therapy, Mulero et al. (2024) stated that the goal of the cognitive-behavioral approach is to examine the impact of sexual abuse within the family, to create a sense of victim self-efficacy, and to understand its consequences on women's behavior and their social and family relationships. This therapy helps individuals to question and correct dysfunctional cognitions related to trauma. Cognitive-behavioral therapy is increasingly used in a group setting and also claims that its use in adults and group therapy is attractive because it can be very effective. The cognitive-behavioral therapy approach is one of the most effective family therapy methods, and mindfulness-based techniques derived from this approach can help improve the relationships of couples seeking divorce. It is worth noting that this method helps with intrapersonal issues, interpersonal relationships, and mutual reactions of individuals, including solutions such as mutual empathy between spouses, expressing emotions in one's environment and mutual acceptance, controlling stressful emotions, and problem solving.[7] In addition to cognitive-behavioral therapy, another useful and effective intervention in the treatment of mental problems is metacognitive therapy. Metacognitive therapy helps individuals discover effective ways to regulate repetitive negative thinking, such as worry and rumination, without the need to challenge individual concerns that may be realistic. The main goal of metacognitive therapy is for the patient to develop flexible metacognitive control and awareness and not allow thoughts to take the form of worry, rumination, and threat.[29] Metacognitive therapy was originally developed by Wells and is a theoretically based, metadiagnostic psychotherapy that has been effective in reducing depression. According to the self-regulatory executive function model, depression occurs, persists, and recurs due to the development of an uncontrollable and repetitive negative thought pattern. This thinking strategy is called cognitive attention syndrome, which focuses on the inside (attention, thinking) and is accompanied by reflection on the past and worry about the future, accompanied by avoidance and maladaptive behaviors. The model assumes that CAS is influenced by positive or negative metacognitive beliefs. Negative metacognitive

beliefs manifest as uncontrollable beliefs about thinking and worrying. Patients may state that my thinking is uncontrollable. While positive metacognitive beliefs manifest as helpful beliefs about thinking and worrying, such as My thinking will help me find a solution to reduce depressive symptoms, metacognition helps patients reduce cognitive attention syndrome and develop healthy metacognitive beliefs. This enables patients to understand the negative effects and undesirable consequences of CAS without denying the content of negative thinking.[21] We have recently shown that metacognitive interpersonal therapy, an approach that targets metacognitive and interpersonal abilities, is effective in healing these psychological wounds.[25] From a metacognitive perspective, metaworry can lead to avoidance behaviors, such as situational avoidance, reassurance seeking, distraction, and attempts to control anxious thoughts. When these efforts fail, it reinforces the individual's belief that worry is uncontrollable.[27]

materials and methods

The research method was applied in terms of the research objective and in terms of the research method, it was a quasi-experimental study with a pre-test and post-test design with a control group and a two-month follow-up period. The statistical population was all women aged 25 to 45 in Isfahan, who were selected using the convenience sampling method and randomly assigned to three groups. The first group received the revised version of Wells's metacognitive therapy (1911) and the second group received cognitive-behavioral training from Nasiani and Lali (2019), and the third group did not receive any intervention. It had a two-month follow-up period. In this study, the independent variables were metacognitive therapy and cognitive-behavioral therapy. The dependent variables were the subjects' scores in the post-test and follow-up questionnaires of anxiety, stress, self-esteem, and self-management. The effect of treatment on the post-test and follow-up scores of the experimental group was examined in comparison with the control group.

DASS-21 Anxiety and Self-Esteem Questionnaire: Anthony et al. (1995) subjected the aforementioned scale to factor analysis, and their research results indicated the existence of three factors: depression, anxiety, and stress. The use of this scale is to measure the severity of the main symptoms of depression, anxiety, and stress. To complete the questionnaire, the individual must indicate the status of a symptom during the past week. Since this scale can provide a comparison of the severity of symptoms during different weeks, it can be used to assess the progress of treatment over time. Each of the DASS subscales consists of seven questions, the final score of which is obtained by summing the scores of the questions related to it. Each question is scored from zero (does not apply to me at all) to three (applies to me completely). Since the DASS-21 is a shortened form of the original forty-two-question scale, the final score of each of these subscalesshould be doubled. The validity and reliability of this questionnaire in Iran have been investigated by Samani and Jokar (2006), who reported test-retest reliability for the depression, anxiety, and stress scales as 0.70, 0.76, and 0.80, and Cronbach's alpha for the depression, anxiety, and stress scales as 0.81, 0.74, and 0.78, respectively.

Rosenberg Self-Esteem Questionnaire: The Rosenberg Self-Esteem Questionnaire (RSES) was developed by Rosenberg in 1965. This questionnaire consists of ten items that measure a person's positive and negative feelings about themselves. Given that the psychometric properties of this questionnaire have been reported to be very good in various studies, this questionnaire is very popular, especially among researchers. According to its creator, this tool is a single-factor scale, although in recent years they have emphasized two positive and negative factors in it.[11] In Iran, the second form of this questionnaire has been prepared and is scored as I agree and I disagree. The validity and reliability of the questionnaire and the correlation of the Rosenberg scale with the life satisfaction test have been reported to be 0.43 in a group of adolescents and 0.54 in a sample of students.[10] In a study by Mohammadi (2005), the reliability of this scale on a sample of Shiraz University students was reported to be 0.69 using Cronbach's alpha and 0.68 using split-half. Also, the test-retest coefficients of this scale were reported to be 0.77 after one week, 0.73 after two weeks, and 0.78 after three weeks. In another study conducted by Barkhouri et al. (2009) on 120 students in Jiroft, the Cronbach's alpha coefficient for this questionnaire was reported to be 0.71.

Hawthorne and Neck Self-Management Skills Questionnaire (2002)

This questionnaire consists of 34 questions with 9 subscales, which include determining embodied performance with 5 questions, setting personal goals with 5 questions, self-talk with 3 questions, self-encouragement with 3 questions, self-punishment with 4 questions, focusing on natural rewards with 5 questions, self-help with 3 questions, evaluating self-beliefs and assumptions with 3 questions, and introspection with 3 questions, which are closed-ended with a five-point Likert scale from strongly disagree 1 to strongly agree 5. A higher score on this scale indicates greater self-management skills of the individual. The concurrent validity of the questionnaire has been reported as 3.66 and its reliability coefficient as 3.10. In a study, Ayremelo (2015) found the reliability of the self- management skills questionnaire to be 0.782 through Cronbach's alpha coefficient, which indicates the appropriate reliability of this questionnaire. He also confirmed the validity of this questionnaire.

Table 1: Metacognitive and cognitive-behavioral therapy sessions

sessions	Content of cognitive-behavioral	Content of metacognitive
1	Getting to know the group members and explaining the sessions, defining the cognitive behavioral training method and the goals of holding the sessions, completing the pre-test questionnaires.	Getting to know the members, completing the pre- test questionnaire, explaining the meetings, defining and describing them. Metacognition method and goals of holding the meetings, completing the pre- test questionnaires.
2	Interviewing women and examining intrapersonal and extra personal relationships, identifying women's values, beliefs, motivation, goals, plans, and attitudes and thoughts towards themselves and the world Around them.	Definition of metacognition, introduction of the technique of postponing thoughts, participants should learn timing for thoughts.
3	Evaluating family dynamics and teaching life skills in relation to family and peers, and teaching the balcony technique for dealing With tensions and greater adaptation.	Ability to calm down and identify the causes of unrestan d restlessness in life, techniques of inviting the situation to fight and self-talk, preparation and creating the ground or calm
4	Teaching interpersonal skills, recognizing attitudes, core beliefs, dualistic thinking, positive and negative attitudes towards events, and the ability to communicate and strengthen intimate relationships in the family.	The joy of change technique, the reappraisal and transformation technique, the focus-joy practice, the practice of change in life and the definition, identification and description of examining the negative and positive automatic thoughts in the mind
5	Reviewing the progress of training, participants' perceptions of the programs of previous sessions, their motivation and drive to continue the sessions, and reviewing the tasks requested in the worksheets and the level of participation in the activities.	Teaching the technique of "Don't Think About the Polar Bear", a technique for managing thoughts and not allowing them to roam at any time and place.
6	Investigating activities that participants are highly motivated towards and teaching problem-solving skills in times of anxiety and stress	Practice controlling and eliminating stressors, the technique of repeating ten words while simultaneously performing a task that requires high accuracy, and managing both tasks simultaneously.
7	Cognitive-behavioral restructuring, identifying common thinking errors, monitoring thoughts using thought recording and thought monitoring, challenging these thoughts and rebuilding them, and listing your colorful abilities	Practicing thinking about the be lifs they have about their own abilities and testing their self-esteem in stressful situations, practicing positive and constructive self-talk about these abilities.
8	Teaching understanding the connection between thoughts, feelings and behavior and	Techniques for recognizing and understanding the Creator, self-worth, the worth of creatures
	challenging thoughts such as ideas, beliefs, rules, perceptions and reviewing emotions such as; happiness, anger, sadness and the ability to show a different type of behavior.	(especially other humans), practicing communication with God, practicing self-love, practicing self-kindness.
9	Understanding forgiveness and ways to achieve this ability and its effects on individual and social life, and the skill of using this category correctly. And controlling and managing reactions.	Metacognitive ability, training in ways to achieve metacognition, knowledge- enhancement techniques, experience-verification techniques, acceptance techniques, knowledge-enhancement practice, and practice accepting the thoughts and Behavior of others.
10	Review and evaluate the past sessions, participants' participation in group work, completing homework and worksheets, reviewing the training process, getting feedback from participants, and completing the post-test questionnaire.	Completing post-test questionnaires, providing summaries. Reviewing and evaluating the sessions that have passed. Participants participation in group work, completing homework and worksheets, reviewing the training process, and obtaining feedback from participants.

Findings

The mean and standard deviation of the age of the research subjects in the metacognitive therapy experimental group was 15.34 years with a standard deviation of 1.64, the cognitive-behavioral experimental group was 16.36 years with a standard deviation of 1.23, and the control group was16.63 years with a standard deviation of 1.17. Table 2 presents a comparison of anxiety, stress, self-esteem, and self-management scores in the research groups.

Table 2: Comparison of anxiety, stress, self-esteem, and self-management scores in the research groups

Type of test:		**Metacognitive therapy**		**cognitive-therapy behavioral**		**Control group**	
		Average	standard deviation	Average	standard deviation	Average	standard deviation
Anxiety	Pre-test	51.47	9.57	47.27	9.20	43.13	5.68
	Post-test	40.53	8.84	38.47	8.17	42.40	5.12
	Follow-up	41.59	9.27	40.40	8.32	42.20	5.03
Stress	Pre-test	80.13	18.32	79.06	10.67	76.93	11.87
	Post-test	69.33	17.62	65.13	9.72	75.93	11.47
	Follow-up	70.93	18.59	69	9.97	76.13	11.67
Self-esteem	Pre-test	36.80	11.39	36.46	6.47	37.93	14.76
	Post-test	49.13	9.67	44.53	8.34	36.53	15.52
	Follow-up	47.53	9.42	42.80	7.80	36.93	14.86
Self-management	Pre-test	204.80	52.54	207.33	42.55	193.40	22.54
	Post-test	219	55.44	221	43.49	192.07	22.55
	Follow-up	216.73	54.82	219.20	42.89	191.27	22.02

The results of Table 2 show that the mean scores of anxiety, stress, self-esteem, and self- management in the control group did not increase significantly in the post-test and follow-up stages compared to the pre-test stage. In the metacognitive therapy and cognitive behavioral therapy groups, the mean scores of all four variables of anxiety, stress, self-esteem, and self- management increased significantly in the post-test and follow-up stages, and this mean difference for all four variables was greater in the metacognitive group. In examining the assumptions of the repeated-measures analysis of variance test, the Shapiro-Wilk test showed that the calculated Z values at the ($P < 0.05$) level were not significant and the assumption of normal distribution of the variables under study in the sample was met. In the M-box test, the condition of homogeneity of the covariance matrix was also observed. The results of the Mauchly test also showed that the assumption of sphericity, which is one of the assumptions of the mixed analysis of variance, was met. Also, the results of Levine's test showed that the null hypothesis of equal variances of the three groups in the post-test, pre-test, and follow-up stages was confirmed with a significance level of 0.0001, respectively.

Table 3. Results of mixed variance analysis to examine the within- and between-group effects of metacognitive therapy and cognitive-behavioral therapy on anxiety, stress, self-esteem, and self- management

		Sum of squares	Degrees freedom	Mean of squares	F	Significance	Effect size	Test power
Anxiety	Time	1046.23	2	523.11	52.80	0.0001	0.55	1
	Group Membership	1223.57	2	611.78	18.44	0.0001	0.46	1
	Time and Group Interaction	859.67	4	214.91	21.69	0.0001	0.50	1
	Error	832.08	84	9.90				
Stress	Time	1995.24	2	997.62	49.75	0.0001	0.54	1
	Group Membership	1522.13	2	7610.06	15.36	0.0001	0.42	1
	Time and Group Interaction	1439.68	4	359.92	17.94	0.0001	0.46	1
	Error	1684.40	84	20.05				
Self-Esteem	Time	606.99	2	303.49	88.01	0.0001	0.67	1
	Group Membership	4809.34	2	2404.67	22.11	0.0001	0.49	1
	Time and Group Interaction	462.03	4	115.50	33.49	0.0001	0.61	1
	Error	289.64	84	3.44				
Self-Management	Time	1229.64	2	614.82	55.59	0.0001	0.57	1
	Group Membership	3171.73	2	1585.76	17.13	0.0001	0.45	1
	Time and Group Interaction	848.08	4	212.02	19.17	0.0001	0.47	1
	Error	928.93	84	11.050				

The results of Table 3 show that, based on the calculated F coefficients, the time factor and the interaction of time and group had a significant effect on anxiety, stress, self-esteem, and self- management scores ($P<0.001$), and this significance indicates that there is a significant difference between the three research groups in the variables of anxiety, stress, self-esteem, and self-management at least in one of the two post-test and follow-up stages. Table 4 presents the results of the pairwise comparison of the mean anxiety, stress, self-esteem, and self-management scores of the subjects according to the research groups.

Table 4. Examining pairwise differences to compare the effects of the experimental groups

	Baseline group (average)		Difference in means	Standard deviation error	significance
Self-Esteem	Metacognitive Experimental Group	Metacognitive experimental group	3.22	4.04	0.11
		Control group	7.35	4.04	0.001
	Cognitive- Behavioral Experimental Group	Cognitive-behavioral experimental group	-3.22	4.04	0.11
		Control group	4.13	4.04	0.01
Self- Management	Metacognitive Experimental Group	Metacognitive experimental group	-2.33	15.28	0.47
		Control group	21.26	15.28	0.001
	Cognitive- Behavioral Experimental Group	Cognitive-behavioral experimental group	2.33	15.28	0.47
		Control group	23.60	15.28	0.001
Anxiety	Metacognitive Experimental Group	Metacognitive experimental group	6.08	3.20	0.01
		Control group	14.55	3.20	0.001
	Cognitive- Behavioral Experimental Group	Cognitive-behavioral experimental group	-6.08	3.20	0.01
		Control group	8.46	3.20	0.002
strees	Metacognitive Experimental Group	Metacognitive experimental group	3.06	5.65	0.21
		Control group	11.46	5.65	0.001
	Cognitive- Behavioral Experimental Group	Cognitive-behavioral experimental group	-3.06	5.65	0.21
		Control group	8.40	5.65	0.001

The results of Table 4 show that the difference between the mean scores of anxiety, stress, self- esteem, and self-management variables of metacognitive therapy and cognitive-behavioral therapy was not significant, and this finding means that there is no significant difference between the effectiveness of metacognitive therapy and cognitive-behavioral therapy on the anxiety, stress, self-esteem, and self-management variables of women aged 25 to 45 with generalized anxiety.

Discussion and Conclusions

The present study aimed to compare the effectiveness of metacognitive therapy and cognitive- behavioral therapy on anxiety, stress, self-esteem, and self-management in women aged 25 to 45 with generalized anxiety. The first result of the study showed that there is a significant difference between the effectiveness of metacognitive therapy and cognitive-behavioral therapy on anxiety and stress in women aged 25 to 45 with generalized anxiety. This means that metacognitive therapy and cognitive-behavioral therapy were able to significantly reduce the mean anxiety scores in the post-test phase, and this effect has maintained its stability in the follow-up phase. Also, the difference between the mean anxiety variable scores in the metacognitive group and the cognitive- behavioral experimental group was not significant, and this finding means that there is no significant difference between the effectiveness of metacognitive therapy and cognitive-behavioral therapy on the anxiety and stress variables. These findings were consistent with the research of Elahi, Najafi, Mahmoud, and Mohammadifar (2023), Barkhuri, Refahi, and Farahbakhsh (2009), Soltani, Akbarzadeh, and Bagherzadeh Golmakani (2025), Mohammadipour, Montajabian, and Mohammadipour. (2024), Lichtserning, Heimi, and Steinert (2025), and Hammermark, Hejmdal, Honisdal, Landingfermi, Howden, and Johnson (2024). In explaining this hypothesis, it can be stated that given that women face challenges and difficulties in their lives such as anxiety, stress, daily tensions, etc., they become confused and worried. Accordingly, it is necessary to use a program to reduce anxiety and daily stressors to deal with the pressures and challenges. Metacognitive therapy and cognitive-behavioral therapy, which by teaching skills to control negative automatic thoughts, balancing over- or under-estimated interpretations of events, and a conscious and rational understanding of the situation, were able to reduce anxiety and stress among these women who suffered from generalized anxiety. Both metacognitive therapy and metacognitive therapy are effective in reducing the skills to control anxious and stressful situationsamong this group of women, and they are trained in problem-solving skills and rationally confronting daily tensions and issues.

Other results of this study showed that there was a significant difference between the effectiveness of metacognitive therapy and cognitive therapy on self-esteem of women aged 25 to 45 with generalized anxiety. This means that metacognitive therapy and cognitive-behavioral therapy were able to significantly increase the mean scores of self-esteem in the post-test phase and this effect has maintained its stability in the follow-up phase. Also, the difference between the mean scores of the self- esteem in the post-test phase and this effect has maintained its stability in the follow-up phase. Also, the difference between the mean scores of the self-esteem variable between the metacognitive group and the cognitive-behavioral group was not significant, and this finding means that there is no significant difference between the effectiveness of the two treatments in the self-esteem variable. These findings were consistent with the studies of Mohammadipour, Montajabian, and Mohammadipour (2024), Babaei-Miyardan, Hosseini-Nasab, and Aghdasi (2024), Solhemi, Pokstad, Anyan, Strand, and Nordala (2024), and Feroli, Esposito, Lache, and Cresillo-Verich (2024). In explaining these findings, it can be stated that the treatment and training of metacognitive techniques to the participants, as well as effective measures and strategies to increase self-esteem in order to reduce the pervasive anxiety among them, was able to change their attitude towards issues, problems and daily concerns towards the family, and they were able to take charge of their thoughts and not allow negative thoughts to occupy them for a long time and not stay in this situation. Also, the metacognitive technique helps women to set a schedule and plan for thoughts that cause their performance level to decrease and damage their self-esteem because they feel that they are not performing well. Also, cognitive- behavioral therapy, along with metacognitive therapy, was able to change the beliefs, attitudes and awareness of these women in the face of anxiety, stress and tensions that they deal with daily and try to revise their way of thinking about the process of married life and make their self-esteem sustainable and resilient in order to improve this self-esteem with effective behaviors.

Other results obtained in this study include the effects of metacognitive therapy and cognitive- behavioral therapy on self-management in women aged 25 to 45 with generalized anxiety. These two treatments were successful in reporting a significant effect. By using metacognitive therapy and cognitive-behavioral therapy on the self-management variable, women with generalized anxiety were able to significantly manage their emotions, feelings, and emotions, become aware of their strengths and weaknesses, and improve their ability to manage their thoughts when facing life's difficulties. Increasing the level of self- management among women can make them stronger in the face of anxiety and stress, and can make the right decision in difficult and stressful situations in the family, and minimize the control of negative emotions and feelings that harm the children of the family, and be a strength for their husbands. All women with self-management skills achieve a level of growth and maturity that allows them to make informed decisions and act on them when facing life's problems and challenges, and to accept responsibility for their actions, thereby feeling in control and effective in life. In this regard, managing thoughts and emotions can be effective as the main components of self-management

and similar concepts on self-management. Teaching methods for dealing with anger, teaching anxiety control using diaphragmatic breathing and relaxation techniques, controlling anxiety by teaching positive self-talk, teaching how to deal with fear by challenging thoughts, teaching problem-solving skills by brainstorming, and practicing coping with stress with the four-step technique of avoidance, change, adaptation, and acceptance of problems are among the self-management strategies that metacognitive therapy and cognitive- behavioral therapy, with their comprehensive and complete training in this field, as well as teaching techniques for controlling anger and anxiety, were able to help women have greater self-efficacy and control over their fleeting emotions, and as a result, be able to create self-management within themselves. Also, in explaining the hypothesis that there is no significant difference between the effectiveness of metacognitive and cognitive-behavioral therapy on the self-management variable in women aged 25 to 45 with generalized anxiety, it can be concluded thatboth treatments improved women's self-management ability to the same extent and that both treatments were equally effective in their effectiveness. The limitations of the present study include the multiplicity of treatment methods and sessions (metacognitive and cognitive-behavioral) and the control of intervening variables. Also, the use of a questionnaire in the form of self-report was another limitation of this study, which may, in addition to reducing the validity of the data, be affected by social desirability bias. This study was conducted on women aged 25 to 45 from a non-clinical community; therefore, caution should be exercised in generalizing the results to clinical populations or populations of men without generalized anxiety. It is suggested that researchers consider variables such as education level, income level, relationships with spouse, children, parents, etc. in their studies.

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Conflict of interest

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