



# Comparative Effects of Meta-diagnostic and Self-compassion-based Psychotherapies on Positive Metaemotions in Generalized Anxiety Disorder (GAD) Patients

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Received: 7 March 2025  
Accepted: 9 June 2025  
ePublished : 15 May 2025



## Abstract

**Background and Objective:** Generalized anxiety disorder (GAD) is a chronic and debilitating disorder that manifests itself in the form of excessive and uncontrollable worry. Numerous biological and psychological factors can cause and perpetuate this disorder. Therefore, this study aimed to investigate the comparative effects of meta-diagnostic and self-compassion-based psychotherapies on positive metaemotions in GAD patients.

**Materials and Methods:** The research method employed a semi-experimental design, conducted in the form of a pre-test-post-test study with two intervention groups and a control group. The target population in this study was all patients with GAD referred to counseling centers in Mashhad, Iran, in 2023. From this population, 45 patients were selected using convenience sampling and randomly divided into three groups of 15 people each. They were then randomly assigned to two intervention groups and a control group, which was reduced to 13 people during the intervention. The positive metaemotions scale of Beer and Monta (2010) was used to collect data; meta-diagnostic therapy sessions were conducted for 10 sessions, and self-compassion therapy sessions were conducted for the intervention groups. No intervention was performed for the control group. Covariance analysis and SPSS (version 25.0) software were used to analyze the data.

**Results:** No significant difference was found between metadiagnostic psychotherapy and self-compassion in the variable of positive metaemotions (confidence in silencing thoughts and emotions, confidence in interpreting one's emotions as signs, and confidence in setting goals). In other words, both interventions improved the results compared to the control group, without any significant difference between them.

**Conclusion:** Given the nature of integrated psychotherapy, which is based on meta-diagnostic principles, and psychotherapy, which is based on self-compassion, these two therapeutic methods are recommended to increase positive metaemotions.

**Keywords:** Comparative Effects of Meta-diagnostic, Generalized Anxiety Disorder (GAD), Positive metaemotions, Psychotherapy, Self-compassion

## Background

Anxiety, as a part of human life, exists in all people to a moderate degree, and this level is considered an adaptive response. However, until it becomes pathological anxiety [1], anxiety includes feelings of uncertainty, helplessness, and arousal [2] and is generally characterized by diffuse, vague, and unpleasant feelings of fear and worry [3]. One type of anxiety disorder is generalized anxiety disorder (GAD), which is defined as excessive and unreasonable worry about everyday events and activities and severely affects health-related quality of life [4]. As one of the most common psychiatric problems, this disorder can cause impairment in learning, concentration, remembering things and relating things to each other and the individual may face other problems and risks, such as psychological and emotional problems, and is associated with

increased disability, cognitive impairment, dissatisfaction with life, and low productivity in patients [5].

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM), Fifth Edition, the symptoms of this disorder can be considered as severe anxiety and worry, inability to control, impaired social functioning, and the presence of anxiety with symptoms of restlessness, fatigue, lack of concentration, irritability, muscle tension, and disturbed sleep [6]. The one-year prevalence rate of GAD in adults in the DSM, Fifth Edition is approximately 2.9% and in children and adolescents is almost 90% [6]. The lifetime prevalence of GAD in Iran has been reported to be 2.6% [7]. Women are twice as likely to suffer from this disorder as men [8], and it is more closely related to depression

than other disorders [9]. Leahy et al. [10] reported a 42% comorbidity rate of GAD and depression. A study by Knox et al. [11] demonstrated that GAD impacts the physical and mental health of individuals, incurring costs for both the individual and society due to reduced human capital, decreased productivity, and increased medical services. Evidence from studies indicates that people with anxiety disorders often feel deficient in emotional areas due to a feeling of weakness in their self-esteem, and that the feeling of vitality and energy, positive emotion, and happiness, which are theoretically called positive metaemotions in modern formulations, need help and assistance [12]. Metaemotion, by definition, means awareness of emotion and, in terms of terminology, means organizing a set of thoughts and feelings about emotions [13]. Metaemotion is considered the driving force for regulating emotions [14] and comprises two distinct parts: positive and negative [15]. Positive metaemotion (such as meta-interest or meta-compassion) refers to the awareness, recognition, and acceptance of positive emotions and how to express them appropriately. In contrast, negative metaemotion (such as meta-anger or meta-worry) involves the awareness, recognition, and acceptance of negative emotions and how to prevent their occurrence [16]. In other words, the emotional reactions of individuals to their own emotions are described as after-emotions, or the same emotion experienced after the initial experience of it. For instance, a temporary emotion, such as anxiety, may follow a primary emotion such as fear [17]. However, at other times, the primary emotion itself may cause the experience of after-emotions; for example, when a primary emotion, such as anxiety, produces its after-emotion. Therefore, emotions such as anger, anxiety, and depression can cause the experience of after-emotions if they are their own subject. The term 'after-emotion' is not used solely to describe an individual's emotions regarding their own emotions in relation to others (for example, feelings of guilt that may arise after experiencing excessive anger), but rather broadly encompasses both the emotions and the individual's thoughts about their own emotions [18]. A better understanding of the mechanisms involved in the regulation of positive emotions is important because it helps improve cognitive problems and has an effect on reducing anxiety [19]. Anxious individuals report unpleasant experiences of negative emotions such as fear, shame, anger, sadness, disgust, and helplessness [20]. Several treatments have been proposed for GAD. Given the increasing prevalence of emotion regulation problems, many researchers,

psychologists, and psychotherapists have recently become interested in this field. Therefore, if we are to intervene for clients with emotion regulation problems, it is essential to help them manage their emotions and act according to their life values. One of these treatments is third-wave psychological therapies [21]. Given the nature of the disorder and the lack of sufficient skills to control emotions, this study used integrated psychotherapy based on meta-diagnostic and psychotherapy based on self-compassion, which have different yet applicable views of GAD.

Integrated meta-diagnostic therapy is one of the interventions that has been used in recent years in the field of mood and anxiety disorders to cover the problems caused by specific treatments and has attracted the most research attention [22]. Integrated meta-diagnostic therapy is designed based on the therapeutic experiences and techniques of similar and common cognitive-behavioral therapies, with a focus on the common symptoms of anxiety disorders and depression. It focuses on emotion and maladaptive emotion regulation strategies, targeting the common causative mechanisms of emotional disorders. It teaches individuals how to confront and respond to their unpleasant emotions in an appropriate manner [23]. This therapeutic approach places a strong emphasis on the adaptive and functional nature of emotions, increasing the patient's awareness of the roles of cognitions, emotions, and physical and behavioral sensations. Instead of focusing only on a specific disorder, it attempts to address all the client's issues by providing comprehensive and effective methods and techniques, regardless of the diagnosis [24]. Meta-diagnostic therapies have numerous advantages and sound theoretical and practical support, and may offer benefits beyond effectiveness [25]; however, like other treatments, and for chronic and pervasive disorders, such as GAD, they may face limitations [26]. Meta-diagnostic therapies ignore differences between individuals and disorders and offer a single protocol for all individuals and emotional disorders (in marked contrast to the trend of greater personalization in psychotherapy) [27].

The results of the research by Osma et al. [24], O'donnell et al. [28], Carlucci et al. [29], Zareie Faskhudi et al. [30], and Ghaderi et al. [31] have examined and confirmed the effectiveness of integrated meta-diagnostic therapy on emotion regulation in individuals with anxiety disorders. Another approach that has received attention from therapists in recent years is the compassion-focused therapy approach. Self-compassion, as defined by Neff [32], is composed of three components: self-kindness versus self-judgment, community versus

isolation, and mindfulness versus over-identification [33]. The combination of these three interrelated components characterizes a self-compassionate individual. Self-compassion is a focus on understanding oneself rather than judging or criticizing one's own shortcomings and inadequacies [34]. It is a common human characteristic to acknowledge that all humans are flawed, make mistakes, and engage in unhealthy behaviors [35]. Mindfulness versus over-identification leads to a balanced and clear awareness of present-day experiences, preventing painful aspects from being ignored and overwhelming the mind [36]. While experiencing suffering and coping with life challenges, individuals may unconsciously evaluate themselves negatively, rather than consciously observing themselves and viewing their experience from a higher perspective that allows them to be realistic and comprehensive [37]. Those who score high in self-compassion score lower in neuroticism and depression and higher in satisfaction, mental health, and adjustment [38]. In addition to protecting the individual against negative psychological states, self-compassion also plays a role in enhancing positive emotional states [39]. For instance, self-compassion is associated with feelings, such as social connectedness, life satisfaction, and adjustment [40]. Self-compassion also helps to satisfy basic needs, autonomy, and the need for connection, which are essential for human well-being according to the theory of Deci and Ryan [41].

Research evidence suggests that individuals who practice self-compassion exhibit characteristics considered psychological strengths within the positive psychology movement, including happiness, optimism, curiosity, exploration, positive emotions, and innovation [42]. The results of the study by Dyrenforth et al. [43] also indicated that self-judgment, feelings of isolation, and rumination are effective in patients with anxiety disorders. In general, integrative meta-diagnostic therapy and compassion-focused therapy have been effective in helping a wide range of psychological disorders in various populations, and few studies have compared the effectiveness of these two treatment approaches. Consequently, further research and treatment efforts are still necessary to achieve the desired effects of these two treatments. On the other hand, since new treatment models for GAD require the integration of treatment techniques to investigate efficacy and introduce new treatments, especially integrated treatments related to GAD, the present study aimed to compare the effectiveness of integrated meta-diagnostic treatment and compassion-focused treatment on

positive metaemotions in patients with GAD.

### Objectives

This study was aimed to investigate the comparative effects of meta-diagnostic and self-compassion-based psychotherapies on positive metaemotions in GAD patients.

### Materials and Methods

The research method employed a semi-experimental design, specifically a pre-test-post-test design, which included two intervention groups and a control group. The target population in this study consisted of all patients with GAD who were referred to counseling centers in Mashhad (Iran) in 2023. The target sample consisted of 45 patients from the population group, selected through convenience sampling and randomly divided into three groups of 15 people each. These groups were then randomly assigned to two intervention groups and a control group. During the intervention, the integrated psychotherapy group based on meta-diagnostic and psychotherapy based on self-compassion was reduced to 13 people. According to the type of response in the control group questionnaires, two people in the control group were also excluded, and all three groups were reduced to 13 people. To collect data from the positive metaemotion scale developed by Beer and Monta (2010), two research phases were conducted, including a pre-test and a post-test. The participants in the intervention group were provided with meta-diagnostic-based therapy and self-compassion therapy in a group (in the form of education and skills). However, no training was provided to the control group, and after the completion of this study, due to ethical considerations, this group underwent a therapeutic intervention outside the research framework that was more effective in this study. The inclusion criteria for the study were: age range between 18 and 50 years, having at least a cycle of education to do homework, diagnosis of GAD according to a psychiatrist, and not receiving concurrent psychological treatment for anxiety disorder. The exclusion criteria for the study were: substance use and abuse, history of personality disorder, absence from the intervention process for two consecutive sessions, and three irregular and incomplete responses to the questionnaires.

### Research instruments

The research questionnaire included the Positive Metacognitions and Positive Meta-Emotions Questionnaire (PMCEQ): The Positive Metacognition and Metaemotion Questionnaire was designed and developed by Beer and Monta in (2010)

to assess metacognitive beliefs about cognitive and emotional processes when facing challenging situations (confidence in silencing persistent thoughts and emotions, confidence in interpreting one's emotions as a sign, preventing immediate reactions and regulating the mind to solve problems, confidence in setting a hierarchy of flexible and practical goals). This questionnaire has 18 questions and three dimensions and is based on a five-choice Likert scale with questions, such as (When I experience big problems, I try to act like this motto: "There is no problem, only a solution"). It measures positive metacognition and metaemotion [44]. Beer et al. [45] confirmed the three-factor structure of the questionnaire and reported its reliability through Cronbach's alpha for the subscale of confidence in extinguishing persistent thoughts and emotions: 0.51 to 0.81, confidence in interpreting one's emotions as a sign, preventing immediate reactions and regulating the mind for problem solving: 0.45 to 0.72, and confidence in setting a hierarchy of flexible and practical goals: 0.57 to 0.87. Rahmanian and Vaez Mousavi (2014) examined the internal standardization of this questionnaire and reported the internal consistency reliability coefficients, as measured by Cronbach's alpha, for the entire questionnaire of

positive metaemotions and metaemotions, at 0.83, and through split-half analysis [46]. In the present study, the validity was 0.72, the internal consistency was 0.92, and the reliability was 0.83, as measured by Cronbach's alpha.

### Meta-diagnostic Integrated Psychotherapy Protocol

Using the treatment plan of Barlow et al. [22], ten 60- to 90-minute sessions (two sessions per week) were held in the form of group sessions. A summary of the content of the intervention sessions is presented in Table 1.

### Self-compassion-based Psychotherapy Protocol

In this study, self-compassion-based training was conducted based on Gilbert's self-compassion therapy package [47]. This training was conducted in twelve 60- to 90-minute sessions (two sessions per week) in the form of group sessions. A summary of the content of the intervention sessions is presented in Table 2.

### Data Analysis

A multivariate analysis of covariance test was conducted using SPSS (version 25.0) software to analyze the data.

**Table 1.** Summary of integrated meta-diagnostic therapy sessions

Session	Objective	Session Description
First Session	Introduction	Introducing research subjects to each other, increasing motivation, and using motivational interviewing to promote patient participation and involvement during treatment, as well as presenting the rationale for treatment and determining treatment goals
Second Session	Identifying emotions	Providing psychological education, recognizing emotions and tracking emotional experiences, and teaching the three-component model of emotional experiences and the ARC model
Third Session	Emotional awareness training	Learning to observe emotional experiences (emotions and reactions to emotions, especially using mindfulness techniques)
Fourth Session	Cognitive appraisal and reappraisal	Creating awareness of the impact and interrelationship between thoughts and emotions, identifying automatic maladaptive evaluations and common traps of thinking, and cognitive reappraisal, and increasing flexibility in thinking
Fifth Session	Identifying patterns of emotion avoidance	Familiarizing with different emotion avoidance strategies and their impact on emotional experiences, and becoming aware of the contradictory effects of emotion avoidance
Sixth Session	Investigating emotion-induced behaviors (EDBs)	Familiarizing and identifying emotion-induced behaviors and understanding their impact on emotional experiences, identifying maladaptive EDBs, and creating alternative action tendencies by confronting behaviors
Seventh Session	Awareness and tolerance of physical sensations	Increase awareness of the role of physical sensations in emotional experiences by performing visceral confrontation exercises to become more aware of physical sensations and increase tolerance for these symptoms
Eighth and Ninth Sessions	Visceral coping and situation-based emotional coping	Become aware of the logic behind emotional confrontations, learn how to prepare a hierarchy of fear and avoidance, and design repeated and effective emotional confrontation exercises in a tangible and objective manner, thereby preventing avoidance
Tenth Session	Conclusion	Prevent relapse, review general treatment concepts, and discuss recovery and therapeutic advances



**Table 2.** Summary of compassion-based therapy sessions

Session	Title	Session Content
First Session	Introducing the group's goals	Introducing and familiarizing the group with each other and with the therapist, stating the purpose of forming the group and the importance of the problem, defining the role of positive psychological factors in the illness and psychological symptoms of individuals, introducing compassion-based therapy, determining the outline and general structure of the sessions, getting to know compassion and self-compassion
Second Session	Educating on the quality of life and happiness	Investigating the role of quality of life in mental well-being, happiness and mental health, defining hope based on the compassion-based therapy model, presenting techniques and ways to succeed in achieving hope and happiness helping to improve and reduce individuals' rumination by acting according to the standards that individuals have considered in the valuable areas of their lives and thereby achieve increased satisfaction, receiving feedback
Third Session	Educating on the role of goals and values	Review of the previous session, getting to know the role of goals, values and spiritual life in satisfaction with important areas of life, specifying the philosophy of life, implementing goal-setting exercises and getting to know the principles of compassion therapy, implementing the model for identifying areas that cause concern and a daily activity plan to produce values in the area of life, receiving feedback
Fourth Session	Changing attitudes	Review of the previous session using the attitude change step to improve satisfaction in areas where satisfaction is not enough, training in attitude change based on cognitive therapy principles, training in the technique of thinking about behavior, training in the technique of familiarizing oneself with risky behaviors, and receiving feedback
Fifth Session	Changing goals	Review of the previous session, training in using the strategy of changing goals and criteria using the technique of gaining insight and awareness, training in changing priorities and important areas using gaining insight, receiving feedback
Sixth Session	Educating on self-compassion	Review of the previous session, training in the important principles of compassion, including the principle of lifestyle, the principle of seeking peace or a sadist, the principle of people-pleasing or immersing oneself in the relationship, and receiving feedback
Seventh Session	Educating on optimism	Review of the previous session, training in the important principles of optimism, the principle of intimacy with friends, the principle of solitude, the principle of calming breathing, and feeling comfortable and forgiving, or the principle of putting aside and postponing, accepting, or forgetting.
Eighth and Ninth Session	Educating on empathy	Review of the previous session, teaching compassion-based letter writing, teaching empathy-based techniques, creating an effective empathetic relationship, and receiving feedback
Tenth Session	Educating on reducing fear	Review of the previous session and starting to use fear reduction techniques and confronting ambiguous psychological fears, providing breathing relaxation strategies, gaining effective social support, and providing necessary feedback
Eleventh Session	Educating on meditation	Review of the previous session and teaching breathing, counting meditation, teaching self-expression, facing your inner needs, self-compassion, creating self-forgiveness, and providing feedback
Twelfth Session	Educating on positive self-induction	Review of the previous session, providing strategies to increase the quality of life, self-generated training with imagery based on compassion therapy and positive self-induction, implementing effective coping responses for illness, and providing feedback

## Results

Demographic characteristics of the participants, including age and gender, were reported separately for the three groups: integrated meta-diagnostic psychotherapy (intervention group 1), self-compassion-based psychotherapy (intervention group 2), and the control group.

As Table 3 shows, the mean and standard deviation of the age of participants in integrated meta-diagnostic psychotherapy were 33.76 and 3.87, respectively, and self-compassion-based psychotherapy were 35 and 4.02, respectively, for the control group, 33.92 and 4.78, respectively. Next, to examine the age parity in the two study groups, the independent t-test statistic was examined. The statistic obtained from comparing the ages of the two experimental and waiting list groups was 0.217, which is not statistically significant ( $Sig = 0.830$ ). Therefore, the two study groups were comparable in terms of age. The gender distribution also showed that in all three groups, more women than men participated in the study.

**Table 3.** Demographic characteristics of the participants

Group	Age	Gender	
		Woman	Man
Integrative meta-diagnostic psychotherapy	33.76 ± 3.87	9 (69.23)	4 (30.77)
Self-compassionate psychotherapy	33.76 ± 3.87	9 (69.23)	4 (30.77)
Control group	33.76 ± 3.87	8 (61.53)	5 (38.47)

To investigate the effectiveness of integrated psychotherapy based on meta-diagnosis with compassion-based psychotherapy on patients' positive metaemotions, Levine's test was used to examine the assumption of equal error variance. The results of Table 5 confirm that the assumption of the same error variance related to the positive hyperemotions component is confirmed ( $P < 0.05$ ). In addition, the examination of the assumption of the homogeneity of the variance-covariance matrix showed that the value of the M-box test (1.69) is

not significant ( $P=0.98$ ,  $F=0.16$ ). In other words, the establishment of the assumption of the homogeneity of the variance-covariance matrix for the positive hyperemotions variable was confirmed. Therefore, the multivariate analysis of covariance test was used to test the hypothesis, the results of which are presented in Table 6. Table 6 indicates that there is no significant difference in any of the dimensions of positive metaemotions between the

two integrated psychotherapy groups based on meta-diagnostic and the compassion-based psychotherapy group in the post-test phase.

Table 7 demonstrates that no significant difference was found between the two treatments in the positive metaemotions variable (confidence in silencing thoughts and emotions, confidence in interpreting one's emotions as signs, and confidence in setting goals).

**Table 4.** Descriptive indices of positive emotion dimensions

Group			Integrative Meta-diagnostic Psychotherapy		Self-Compassionate Psychotherapy		Control Group	
			M	SD	M	SD	M	SD
Dimensions of positive meta-emotions	Confidence in silencing thoughts and emotions	Pre test	11.46	2.36	13.30	3.19	14.15	3.41
		Post test	15.84	2.44	15.30	2.28	12.15	2.51
	Confidence in interpreting one's emotions	Pre test	12.15	2.88	13.84	3.28	14.38	3.52
		Post test	16.15	2.11	16.38	2.36	12.84	2.38
	Confidence in setting goals	Pre test	12.76	12.76	13.07	3.09	13.76	3.08
		Post test	15.69	15.69	15.61	2.14	13.30	2.39

**Table 5.** Results of Levine's test to examine the assumption of equal error variance for the positive metaemotions variable

Variable	F	df 1	df 2	P-value
Confidence in silencing thoughts and emotions	0.049	1	24	0.826
Confidence in interpreting one's emotions as signals	0.159	1	24	0.693
Confidence in setting goals	0.071	1	24	0.792

**Table 6.** Results of the multivariate analysis of covariance test

Source of variance	Test	P-value	F	df	df error	sig	Effect Size
Group	Pillai effect	0.020	0.131	3	19	0.94	0.02
	Wilkes lambda	0.980	0.131	3	19	0.94	0.02
	Hotelling effect	0.021	0.131	3	19	0.94	0.02
	Largest root of zinc	0.021	0.131	3	19	0.94	0.02

**Table 7.** Summary of multivariate test results related to positive metaemotions

	Dependent Variable	Sum of Squares	df	Mean Squares	F	P-value	Effect Size
Group	Confidence in silencing thoughts and emotions	0.893	1	0.893	0.145	0.707	0.007
	Confidence in interpreting one's emotions as signals	0.667	1	0.667	0.119	0.733	0.006
	Confidence in setting goals	0.70	1	0.70	0.14	0.708	0.007

## Discussion

The main objective of the present study was to investigate the comparative effects of meta-diagnostic and self-compassion-based psychotherapies on positive metaemotions in GAD patients. The findings of this study indicated that meta-diagnostic-based integrated psychotherapy and self-compassion-based psychotherapy had a significant effect on

positive metaemotions, and both interventions improved the results compared to the control group, without any significant difference between them.

Integrated meta-diagnostic therapy was effective in improving the components of metaemotion, including confidence in extinguishing persistent thoughts and emotions, preventing immediate

reactions, and regulating the mind to solve problems, as well as confidence in regulating the hierarchy of flexible and practical goals. According to the findings of the study, the mean post-test scores of the intervention group of the integrated meta-diagnostic therapy were different from those of the control group. The difference was statistically significant, meaning that the integrative meta-diagnostic intervention had a significant effect on improving the components of hyperemotion. These findings are consistent with the results of Castro-Camacho et al. [48], Grossman and Ehrenreich [49], Steele et al. [50], Sakiris and Berle [51], Sherman and Ehrenreich May [52], and Varkovitzky et al. [53], which found that integrative meta-diagnostic treatment was effective in reducing symptoms of depression and anxiety, and increasing emotional regulation, experiential avoidance, and emotional tolerance.

It was also consistent with the research results of Firoozi and Biranvandi [54], Azimi et al. [55], Nasri et al. [56], and Fdaei et al. [57] on the effectiveness of integrated meta-diagnostic therapy on increasing emotional regulation and dimensions of positive metaemotions.

One of the treatments that has been developed in recent years amid new developments in the field of cognitive-behavioral therapies versus specific treatments for anxiety disorders is the meta-diagnostic treatment with an integrated approach proposed by Barlow et al. [22]. The meta-diagnostic approach targets the underlying components of psychological trauma and can be used for disorders and problems that have the same or similar underlying causes. This treatment, which is for people with emotional and cognitive disorders, especially those with anxiety and mood disorders, can be an economical and perhaps powerful option compared to currently available treatment protocols for specific clinical diagnoses.

Transexcitation affects anxiety directly and indirectly. It is accepted as a principle in psychology that the more emotional expression in behavior, the higher the anxiety and the more impaired the person's ability to make good decisions. This happens in two ways: first, emotional behavior and reaction cause the person to use logic and cognition less; second, emotions influence cognition, meaning that they cause the person to justify their wrong actions with logic and thoughts influenced by meta-emotions (especially negative meta-emotions such as anger, anxiety, and rejection) [33].

Meta-cognition causes emotions evoked by environmental stimuli to be monitored by these processes and, when they are externally manifested, to take on a more managed and organized form. In

other words, emotions are under the control of the person and are monitored, reviewed, and controlled at all times by the person's meta-cognitive knowledge [19]. Considering the function of integrative meta-diagnostic therapy within the context of the cycle of emotion's effect on cognition and behavior, as well as the identification of this process, the effectiveness of this therapy on metacognitions and metaemotions can be understood.

Moreover, in explaining the effectiveness of integrative meta-diagnostic therapy in increasing the components of metaemotion, it can be stated that healthcare professionals play an important role in increasing the survival rate among people with GAD. Research has indicated that GAD can lead to emotional instability, disruption of emotional regulation, uncertainty, and tension among family members [27]. Among the reasons that caused the scores of the components of metaemotion in mothers to improve were the nature of integrative meta-diagnostic therapy and its treatment structure. In the protocol of integrative meta-diagnostic therapy, special attention has been paid to increasing emotional-cognitive self-awareness and recognizing the relationships between emotion, cognition, and behavior [22]. In this treatment, clients are taught to recognize their basic emotions and then record their frequent emotions and their patterns, and to identify the cycle of emotion's impact on cognition and behavior. They learn to recognize and correct their unhealthy cognitions. This awareness fosters a deeper understanding of the three fundamental factors of cognition, behavior, and emotion. This treatment has a significant impact on correcting their unhealthy automatic emotions and ruminations [57].

Additionally, in explaining the findings of this study, it is worth noting that, according to research, integrative meta-diagnostic therapy is utilized for various types of emotional disorders, has its roots in the cognitive-behavioral tradition, and is a meta-diagnostic cognitive-behavioral therapy that focuses on emotion. Although it has a cognitive-behavioral tradition, it is unique in its special emphasis on how people with emotional disorders experience and respond to their emotions. This therapy emphasizes the adaptive and functional nature of emotions and primarily attempts to identify and correct maladaptive attempts to regulate emotional experiences [58]. Despite the relatively short time since its research and clinical application, the meta-diagnostic approach has attracted special attention [59] and has shown its effectiveness in the treatment of emotional and cognitive disorders [60].

Other results of this study indicated that self-

compassion-based psychotherapy has an effect on positive metaemotions in patients with GAD. The findings of this study are consistent with those of studies by Smeets et al. [61], Neff et al. [32], and Braehler et al. [62]. In explaining this finding, it can be stated that positive metaemotions are a crucial aspect of mental health, significantly related to self-compassion, and originate from the feeling of warmth and inner connection that individuals have towards themselves. Self-compassion is also an important human strength that is considered a quality of kindness, gentleness, and a sense of inner connection, helping individuals to remain hopeful when facing life's difficulties. Moreover, a compassionate mind, along with its associated adaptive coping skills, helps maintain optimistic expectations regarding the future [32].

In this regard, Smeets et al. [61] demonstrated that a positive outlook on the future is the most significant benefit of self-compassion and that compassion interventions are effective in increasing people's optimism about their abilities when facing challenging situations. This may be because this training reduces self-judgment, which can cause degradation of self-esteem. In general, it can be said that people with self-compassion are more optimistic than those who lack self-compassion, and as a result, they can better cope with their negative emotions. Moreover, training and exercises aimed at increasing self-compassion in people can be effective in improving various forms of distress. Research has demonstrated that methods focused on compassion are associated with positive outcomes [47] and can help people with mental disorders. A key aspect of compassion-focused therapy for patients with mental disorders involves helping them develop warmth, acceptance, caring, and an appropriate attitude toward difficult internal experiences [6]. In fact, the goal of compassion-based therapy is to help patients increase their sense of warmth and emotional responsiveness when they are involved in the treatment process, which ultimately leads to self-compassion in them [32].

One of the innovative aspects of this study was that the positive metaemotions questionnaire was used for the first time in Iran in people with GAD; however, it should be noted that its psychometric properties were examined by Rahmanian and Vaez Mousavi [46]. Additionally, the effectiveness of integrated meta-diagnostic therapy and self-compassion-based psychotherapy on the positive metaemotions variable has not been previously studied. In addition, until the time of this study, these two treatments have not been used for positive metaemotions in people with GAD. It is suggested that although the positive metaemotions

Questionnaire is considerably useful and includes Iranian psychometrics, it is better to use questionnaires whose questions are localized for Iranian culture. Since psychotherapy based on self-compassion and integrated meta-diagnostic treatment is not based on diagnoses and disorders and directly affects their emotions and settings, since people with GAD refer to hospitals with various disorders and psychological backgrounds, this treatment can be an efficient and effective treatment for these patients. Therefore, it is suggested that this treatment be used for people with GAD and other anxieties to positively affect their emotions, cognitions, coping methods, and acceptance as much as possible. Given that these treatments can be implemented in groups, it is suggested that this intervention be widely taught in medical centers, charities, and institutions that are in contact with these people. Among the limitations of the present study is the lack of long-term follow-up. Given that this study was conducted on patients with GAD who referred to counseling centers, the findings cannot be generalized to other populations. Additionally, there were potential uncontrolled effects of the therapist.

### Conclusions

It can be concluded that integrative psychotherapy based on meta-diagnostic and psychotherapy based on self-compassion improve positive metaemotions in people with GAD. Considering the results of the study and the effectiveness of these interventions, these therapeutic methods can be used as one of the effective and non-pharmacological treatments that play a role in regulating cognitions and emotions.

### Ethical Considerations

The study participants first read the written informed consent form and completed it if they were willing to participate in the study. Additionally, the study protocol was registered in and approved by the Research Ethics Committee. This research was derived from a doctoral dissertation in psychology, which has been registered with the ethics ID IR.IAU.SARI.REC.1401.245.

### Acknowledgments

The authors would like to thank all the participants who extensively cooperated in the research.

### Authors' Contributions

All authors participated in the initial writing of the article and its revision, and all accepted responsibility for accuracy.

### Funding/Support

This research did not receive any specific grant



from funding agencies in the public, commercial, or not-for-profit sectors.

### Conflicts of Interest

The authors declare that they have no conflict of interest.

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