Research Paper

Investigating the Effectiveness of Transdiagnostic Treatment on Maladaptive Personality Traits and Mentalized Affectivity of Patients With Generalized Anxiety Disorder Comorbid With Depression: A Case Study

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ABSTRACT

Objective: This study aims to investigate the effectiveness of transdiagnostic treatment on maladaptive personality traits and mentalized affectivity of patients with generalized anxiety disorder comorbid with depression.

Methods: This was a quasi-experimental study with a single case method. The statistical population included people with generalized anxiety disorder comorbid with depression who were referred to counseling centers in Isfahan City, Iran in 2020. From this population, 5 people were selected via purposive sampling and they were intervened with transdiagnostic treatment through weekly sessions held individually. The subjects were assessed at the baseline, third, fifth, eighth, and tenth sessions, and during a 1-month follow-up period using the short version of the adult version of the diagnostic and statistical manual of mental disorders, fifth edition, personality questionnaire, and the mentalized affectivity scale. To report the data, we used visual analysis, reliable change index, improvement percentage, and statistical and clinical significance.

Results: The visual analysis, percentage of improvement, and reliable change index (RCI≥1/96), showed that transdiagnostic treatment created statistically significant changes and improvement in mentalized affectivity components, negative affectivity, and detachment; however, it did not have a significant effect on other personality traits (antagonism, disinhibition, and psychoticism).

Conclusion: Transdiagnostic treatment is an effective treatment to modulate the mentalized affectivity, negative affectivity, and detachment of people with generalized anxiety disorder comorbid with depression.

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Highlights

• Comorbidity between generalized anxiety disorder and depression is a common clinical diagnosis.

• Comorbidity shows that these disorders may be due to common risk factors. Emotion regulation and Personality Traits have been suggested as common factors in the psychopathology of generalized anxiety disorder (GAD) comorbid with depression.

• Transdiagnostic treatment is an effective treatment to modulate the mentalized affectivity and maladaptive personality traits of people with GAD comorbid with depression.

Plain Language Summary

Generalized anxiety disorder often confers vulnerability to other mental disorders such as depression. It is believed that the comorbidity of mental disorders can be caused by common factors such as components related to emotional regulation and personality traits that are common in the etiology of these disorders. Because comorbidity between mental disorders is common, identifying effective treatments for these patients is useful and can help both patients and therapists. In this research, the effectiveness of transdiagnostic therapy as a treatment designed to improve comorbid emotional disorders on mentalizd affectivity and maladaptive personality traits in 5 patients with generalized anxiety disorder comorbid with depression was investigated. The results showed that this treatment can help to modulate the identifying, processing and expression of emotion as well as reduce the level of negative affect and detachment in these patients.

1. Introduction

People with generalized anxiety disorder (GAD) are constantly worried about the possible occurrence of a wide range of negative events (APA, 2020). They expect unfortunate events to occur and become irritable while experiencing a lot of muscle contractions and may have trouble sleeping and concentrating. Their psychosocial function is likely to be severely impaired as well (Koenigsberg, 2021). GAD is associated with increased disability, cognitive impairment, life dissatisfaction, and low productivity in patients (Bower et al., 2016). The mean 12-month prevalence for the disorder is 1.3% worldwide, with a range of 0.2% to 4.3% (APA, 2022). A recent study in Iran reported a 2.6% lifetime prevalence of GAD (Mohammadiet al., 2020).

A total of 90% of people with GAD experience at least one form of psychological disorder (Blanco et al., 2014). This disorder has high comorbidity with other anxiety disorders and depression (Sadock et al., 2015; Shihata et al., 2017). Leahy et al. (2011) reported a 42% comorbidity rate of GAD and depression. Recent meta-analytic findings regarding the comorbidity between anxiety disorders and depression show that regardless of changes in the type of diagnosis, study timeframe, and chronological order of occurrence, mood disorders, and anxiety are strongly comorbid (Saha et al., 2021). Comorbidity reduces the accurate diagnosis, thereby reducing the effectiveness of treatment methods. It also increases treatment costs (Sharpley et al., 2010). As a result, therapists should pay attention to the quick identification and treatment of this common type of comorbid disorder (Saha et al., 2021). Regardless that which of the two disorders occurs first, the risk of subsequently developing the other disorder increases (Saha et al., 2021). This reciprocal relationship in comorbid disorders shows that these disorders may be due to common risk factors (Levey et al., 2020; Purves et al., 2020, Saha et al., 2021).

Emotion regulation has been suggested as a common factor in the psychopathology of GAD comorbid with depression (Kennedy & Barlow, 2018). Emotion regulation is a wide-ranging term that describes explicit and implicit processes which involve monitoring, evaluating, altering, and modulating emotions. The process of emotion regulation involves being aware, understanding, and identifying one's thoughts and feelings (i.e.mentalization), before, during, and after refining and modulating the emotion (Greenberg et al., 2017). People with GAD experience intense emotions, tend to catastrophize, may not be able to correctly recognize and understand their emotions, and have problems suppressing their negative emotions (Mennin & Fresco, 2010; Tryon, 2014).

Jurist (2018) proposed a novel perspective on emotion regulation, called the theory of mentalized affectivity, which considers mentalization in the regulatory process. This theory argues that effectively regulating (managing, altering, or changing) an emotion relies on the capacity for mentalization. It argues that emotions are not just adjusted in a regulatory process, but they are also revalued in meaning. This more sophisticated aspect of emotion regulation requires the ability to reflect on one's thoughts and feelings and to mentalize the factors that may influence the emotion, such as childhood experiences or the present situation, or the context in which a person is. This in turn helps to inform a person's understanding of their emotions and how to anticipate future situations. Mentalized affectivity, as one of the new models and new assessment of emotion regulation, divides emotional regulation into 3 components: identifying emotions (the ability to identify emotions and to reflect on the factors that influence them); processing emotions (the ability to modulate and distinguish complex emotions); and expressing emotions (the tendency to express emotions outwardly or inwardly) (Greenberg et al., 2017). According to the mental affectivity model, emotional regulation is influenced by personality style, values, culture, personal history, and most importantly, mentalities (Jurist, 2018). According to the research results of Greenberg et al. (2017), individuals with anxiety, mood, and personality disorders show a profile of high identifying and low processing when compared to the control group.

Also, personality structures, such as neuroticism, negative affectivity, behavioral inhibition, positive affect, and extroversion are inherited traits that have a significant relationship with anxiety and related disorders. Maladaptive personality traits, especially neuroticism and negative affectivity are risk factors for divorce, unemployment, and disability-related retirement. They are influential in the prevalence, course, and occurrence of mental disorders. They cause functional impairment, act as an obstacle to improving symptoms and improvement in common mental disorders, and cause resistance to treatment, lack of response to treatment, and poor treatment outcomes (Hergatner, 2015). The clinical importance of the relationship between anxiety disorders and personality disorders can be assessed through its effects on the severity of anxiety disorders, the risk of suicide, and the process of anxiety disorders, as well as treatment outcomes (Latas & Milovanovic, 2014). Studies have shown that the lowest level of personality functioning among anxiety patients is related to patients with GAD (Doering, 2018). A significant part of the factor structure of the diagnostic classification of mental disorders is negative affectivity. This factor overlaps considerably with the main components of GAD. High levels of negative affectivity and low levels of positive affectivity are the basis for both anxiety disorders and depression (Farzaneh et al., 2014). Various traits, such as nervousness, depression, low tolerance for disappointment, and the feeling of being held back increase the likelihood of having GAD (Bienvenu & Brandes, 2005). For instance, the results of studies show that neuroticism is an important and fundamental factor in anxiety, depression (Capello & Markus, 2014; Michikyan et al., 2014), and their comorbidity (Barnhofer & Chittka, 2010). ACcoringdgly, the evaluation of personality function should be the central part of a comprehensive diagnostic process in patients with anxiety disorders (Gruber et al., 2020). This is clinically important because the response rate to treatment in these patients is low (Doering, 2018); for instance, this rate is 48% in GAD (Hunot, 2007).

Cognitive-behavioral therapy (CBT) is the first psychotherapy option for GAD and its effectiveness is supported by several meta-analytic studies (Carpenter et al., 2018). Although CBT has demonstrated its effectiveness as the treatment of choice for GAD, the results of some studies show that only 50% of people with GAD achieve positive results from this method of treatment (Robichaud, 2013) while 50% of people have high symptoms and recurrence rate at the end of the treatment process (Rapgay et al., 2011) and fail to achieve the optimal results (Fresco et al., 2013). CBT is less effective in the improvement of people with GAD compared to other anxiety disorders (Hoyer et al., 2009). Research conducted in Iran also confirms this finding (Edrissi et al., 2015). On the other hand, the very high comorbidity of this disorder with other disorders, especially depression, has faced specific CBT with serious problems, at the economic, practical, and clinical levels. Specific CBT interventions are typically effective in treating 40% of such cases (Norton & Barrera, 2013) and the other 60% remain anxious, depressed, or demonstrate related diagnoses despite receiving a full course of evidence-based CBT. (Norton, 2017). Therefore, the use of specific cognitive-behavioral protocols is not cost-effective, considering the challenges arising from the problem of comorbidity from various dimensions (Akbari et al., 2014).

Since CBT is a flexible approach and subject to scientific data in the field of psychotherapy, it has always started to change and adapt when faced with defects and limitations. The transdiagnostic approach in the field of CBT has been the pioneer solution (Clark & Taylor, 2009; Dozois et al., 2009). Among the transdiagnostic approaches, the transdiagnostic treatment designed by Barlow (2011) is one of the interventions that has recent-

Table 1. Clinical history of the research subjects

Subjects	Age (y)	Gender	Education	Marital State	Occupation	Duration of the Disorder (y)	Treatment History
1	30	Male	Undergraduate	Single	Student	4	_
2	55	Female	Middle school	Married	Housewife	35	_
3	34	Female	Diploma	Married	Housewife	5	Medication
4	22	Female	Undergraduate	Single	Student	3	_
5	24	Female	Undergraduate	Married	Student	6	_

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ly been used in the field of comorbid mood and anxiety disorders to solve the problems caused by specific treatments for comorbid problems. Barlow's transdiagnostic treatment is an emotion-focused CBT that can be used for a wide range of emotional disorders by using emotion regulation skills (Farchione et al., 2012).

Recent meta-analytic studies have shown the effectiveness of transdiagnostic CBT among patients with anxiety and depression disorders with moderate to large effect sizes (Osma et al., 2021; Dalgleish et al., 2020; Sakiris, Berle, 2019; Pearl & Norton, 2017; Anderson et al., 2016). Also, research results indicate the effectiveness of Barlow's transdiagnostic treatment (2011) in treating GAD comorbid with emotional disorders (Ghaderi et al., 2021; Riccardi et al., 2017; Dear et al., 2015; Norton and Brara, 2013). When Barlow's integrated transdiagnostic protocol was compared with disorder-specific protocols for the treatment of GAD, it was found that transdiagnostic treatment was effective as specific treatments for this disorder and those with GAD were less likely to drop out of treatment, compared to specific treatments (Barlow et al., 2017; Kennedy & Barlow, 2018). In addition, the higher effectiveness of Barlow's transdiagnostic treatment compared to standard CBT for GAD has been shown in some studies (Newby et al., 2017). Accordingly, the present study aims to investigate the effectiveness of transdiagnostic treatment on maladaptive personality traits and mentalized affectivity of people with GAD comorbid with depression.

2. Materials and Methods

This is a single-case quasi-experimental study. The study population consists of all people with GAD comorbid with depression who were referred to counseling centers in Isfahan City, Iran in 2019-2020. From this population, 5 subjects were selected using the purposive sampling method.

Inclusion and exclusion criteria

The inclusion criteria were as follows: a) having a minimum of middle school education and being in the age range of 20 to 55 years; b) being diagnosed with GAD based on a diagnostic interview and generalized anxiety questionnaire; c) having sub-symptoms of depression based on a diagnostic interview and the Beck depression inventory; d) not having a psychiatric diagnosis other than GAD and depression; d) not receiving any intervention or medication other than the research interventions; e) participation in treatment sessions and completing questionnaires.

The exclusion criterion was absence from more than 2 treatment sessions. Table 1 shows the clinical history of the research subjects.

Subsequently, the questionnaires were distributed among the participants at the baseline. Then, the interventions were performed individually. The transdiagnostic treatment was based on the Barlow protocol presented weekly in 1-h sessions. The subjects were re-evaluated at the third, fourth, eighth, and tenth session (end of treatment), and 1 month after the treatment using PID-5-BF and mentalized affectivity scale (MAS).

The mentalized affectivity scale

MAS is a new tool that measures the emotional domain and is developed by Greenberg et al. in 2017. This scale includes 60 questions and 3 subscales: identifying, processing, and expressing emotions. The creators of this scale reported high reliability and validity and suggest that it can be used for clinical and non-clinical populations and in the fields of psychology, psychiatry, and neuroscience. The Persian version of this questionnaire has been standardized in Iran by Sayarfard et al. (2021). The Cronbach α coefficient for the whole scale was obtained at 0.93. The composite reliability of the factors

Table 2. Structure and content of transdiagnostic treatment (Barlow et al., 2011)

Session	Session Purpose	Session Content
1	Motivation for change	Decisional balance techniques in which the advantages and disadvantages of a change in the patient's lives through psychotherapy were discussed to concrete the therapeutic goals and increase commitment to treatment.
2	Emotional psychoeducation	The adaptive function of emotions was explained and the patients learned to differentiate between thoughts, physical sensations, and the behaviors related to those emotions. Afterward, the concept of "emotion-driven behaviors" was introduced.
3	Training in emotional awareness	Emotional awareness centered on the present without judging was taught and practiced. This consisted of recognizing emotional reactions and not automatically classifying them as good or bad.
4, 5	Cognitive restructuring	Typical cognitive biases and irrational beliefs related to anxiety and depressive symptoms were taught and different techniques were used to detect and modify the maladaptive ways of thinking.
6	Correct avoidant behaviors	The role of avoidant behaviors in the development and maintenance of eating disorder symptoms was explained. Afterward, alternative and more functional behaviors were discussed.
7	Increase tolerance to physical sensations	Several exercises were performed and discussed, such as breathing through a straw. The aim for the patient was to get used to the typical physical sensations of the cause of the emotional reaction.
8, 9	Emotional exposure	Emotional habituation was developed by encouraging patients to face external and internal symptoms and triggers once they were explored. This session also aimed to decrease avoidance behaviors.
10	Relapse prevention	Learned skills were reviewed and instructions to face future situations were offered. In addition, patients were introduced to the skills that needed more practice.

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was in the range of 0.82 to 0.89, and the coefficient θ of the scale was reported at 0.98.

The personality inventory for DSM-5 brief form

The short form of the adult version of the personality questionnaire is developed by Krueger et al. (2012) and includes 25 items regarding self-assessment for measuring abnormal personality traits in subjects with 18 years of age or higher (Krueger et al., 2012). The scale measures 5 personality traits, including negative affectivity, detachment, antagonism, disinhibition, and psychoticism. Items are rated based on a 4-point Likert scale (0= very false or often false to 3=very true or often true). High scores in each subscale indicate the significant areas and the source of harm in the individual. Krueger et al. (2012) examined its psychometric properties in the sample of the general population and patients and reported the internal consistency of its scales ranging from moderate to high (0.73 to 0.95) with a mean of 0.86. Abdi and Chalabianlou (2017) reported the reliability of this questionnaire via the Cronbach α internal consistency method in the range of 0.83 to 0.89 and the retest coefficient of 0.77 to 0.87 for the subscales.

Program description

To report the data and evaluate the effectiveness of the treatment, visual analysis or graphic diagram analysis methods, reliable change index, clinical significance, improvement percentage, and the effect size were used. The reliable change index was used to evaluate the statistical significance. In this index, the post-test score is subtracted from the pre-test score and the result are divided by the standard error of the difference between the two scores. For the reliable change index to be statistically significant, the absolute value of the result must be equal to or greater than 1.96, which indicates that the results are more because of active factors and manipulation of the experimenter than measurement error. The percentage of recovery formula was used to objectify the rate of improvement in therapeutic targets as well as clinical significance. In this formula, the pre-test score is subtracted from the post-test score and the result is divided by the pre-test score. Then, the result is multiplied by 100 (Hamidpour et al., 2011).

Table 3. The process of alterations in the scores of maladaptive personality traits of research subjects

Maladaptive Personality Traits	Subjects	Baseline	The Third Session	The Fifth Session	The Eighth Session	The Last Session	Percentage of Improvement	Reliable Change Index	Total Percentage of Improvement	Effect-size	Follow-up	Follow-up Percentage of Improvement	Reliable Change Index	Total Percentage of Improvement	Effect-size
Negative affectivity	1	13	13	10	10	8	38%	3.08		0.93	8	38%	3.08		0.93
	2	13	13	12	8	7	46%	3.70		0.94	9	30%	2.46		0.89
	3	16	16	13	12	10	37%	3.70	39.2	0.94	9	43%	4.32	36.8	0.96
	4	20	18	17	14	10	35%	4.32		0.96	12	40%	4.93		0.95
	5	15	14	11	11	9	40%	3.70		0.94	10	33%	3.08		0.92
Detachment	1	12	12	12	10	10	16%	1.49		0.70	9	25%	2.23		0.83
	2	10	10	8	8	8	20%	1.49		0.70	7	30%	2.23		0.83
	3	15	15	13	13	12	20%	2.23	21.4	0.83	12	20%	2.23	26.6	0.83
	4	16	16	16	14	11	33%	4.10		0.92	11	33%	4.10		0.92
	5	16	16	16	13	13	18%	2.23		0.83	12	25%	2.98		0.89
Antagonism	1	5	5	5	5	4	20%	0.46		0.44	4	20%	0.46		0.44
	2	5	5	4	5	4	20%	0.46		0.44	4	20%	0.46		0.44
	3	6	6	6	6	4	33%	0.93	23.2	0.70	4	33%	0.93	21.2	0.70
	4	10	10	10	11	8	20%	0.93		0.70	9	10%	0.46		0.44
	5	11	12	12	12	10	23%	1.39		0.83	10	23%	1.39		0.83
Disinhibition	1	6	6	5	6	5	16%	0.48		0.44	5	16%	0.48		0.44
	2	10	10	8	8	8	20%	0.97		0.70	8	20%	0.97		0.70
	3	8	8	6	8	6	25%	0.97	30	0.70	6	25%	0.97	26.8	0.70
	4	14	13	14	12	9	35%	2.43		0.92	10	28%	1.95		0.89
	5	11	11	11	8	5	54%	2.92		0.94	6	45%	2.43		0.94
Psychoticism	1	5	5	5	5	5	0	0		0	5	0	0		0
	2	8	8	7	7	7	12%	0.92		0.44	7	12%	0.92		0.44
	3	6	6	7	6	6	0	0	11.2	0	6	0	0	11.2	0
	4	6	6	5	5	5	16%	0.92		0.44	5	16%	0.92		0.44
	5	7	7	7	6	5	28%	1.85		0.70	5	28%	1.85		0.70

3. Results

Table 2 shows the structure and content of transdiagnostic treatment. Scores of repeated measures of maladaptive personality traits of research subjects during baseline, intervention, and follow-up sessions and improvement percentage indices are provided in Table 3.

According to the results and based on the values of the reliable change index (RCI≥1.96), the transdiagnostic treatment intervention for the negative affectivity component was statistically significant for all 5 subjects in the intervention and follow-up stages. In addition, the percentage of improvement after treatment for subjects 1 to 5 was equal to 38%, 46%, 37%, 35%, and 40%, respectively. The overall improvement percentage for the subjects is also 39.2%. In the follow-up stage, This rate reached 38%, 30%, 43%, 40%, and 33%, respectively, with a total improvement percentage of 36.8% for the subjects.

In the detachment component, the intervention of transdiagnostic treatment was statistically significant for subjects 3, 4, and 5 in the intervention phase and all 5 subjects in the follow-up phase (RCI≥1.96). According to the results, the intervention of transdiagnostic treatment was significant for subjects 4 and 5 in the intervention stage (RCI≥1.96), while it was not significant for the other subjects (RCI≤1.96). In the follow-up phase, the intervention was statistically significant only for subject 5. In the antagonism component, the intervention of transdiagnostic treatment was significant for subjects 4 and 5 in the intervention stage (RCI≥1.96) and not significant for other subjects (RCI≤1.96). In the follow-up phase, the intervention was statistically significant only for the fifth subject. In the component of disinhibition and psychoticism, the intervention of transdiagnostic treatment was not statistically and clinically significant for any of the subjects in the intervention and follow-up

Table 4. The process of alterations in scores of mentalized affectivity of research subjects

Mentallized Affectivity	Subjects	Baseline	The 3rd Session	The 5th Session	The 8th Session	The Last Session	Percentage of Improvement	Reliable Change Index	Total Percentage of Improvement	Effect-size	Follow-up	Follow-up Percentage of Improvement	Reliable Change Index	Total Percentage of Improvement	Effect-size
Identifying emotions	1	107	114	124	133	137	28%	4.87		0.99	140	30%	5.35		0.99
	2	92	123	126	143	140	52%	7.92		0.99	135	46%	6.98		0.99
	3	102	102	119	125	139	36%	6.10	35%	0.99	141	38%	6.33	33%	0.99
	4	113	115	126	140	140	23%	4.38		0.99	137	21%	3.89		0.99
	5	98	124	133	129	132	40%	5.51		0.99	130	32%	5.19		0.99
Processing emotions	1	105	114	111	114	123	17%	3.20		0.99	117	11%	2.13		0.99
	2	75	77	85	97	113	50%	6.77		0.99	110	46%	6.23		0.99
	3	78	83	96	114	115	47%	6.59	37%	0.99	109	39%	5.52	35%	0.99
	4	91	104	111	115	121	32%	5.34		0.99	127	39%	6.41		0.99
	5	83	83	90	90	117	40%	6.06		0.99	120	44%	6.60		0.99
Expressing emotions	1	49	50	48	51	63	28%	2.50		0.99	61	24%	4		0.99
	2	35	41	48	51	55	57%	6.66		0.99	55	57%	6.66		0.99
	3	43	41	54	57	65	51%	7.33	44%	0.99	63	46%	6.66	39%	0.99
	4	54	54	47	69	75	38%	7		0.99	69	27%	5		0.99
	5	42	45	57	61	63	50%	7		0.99	61	45%	7		0.99

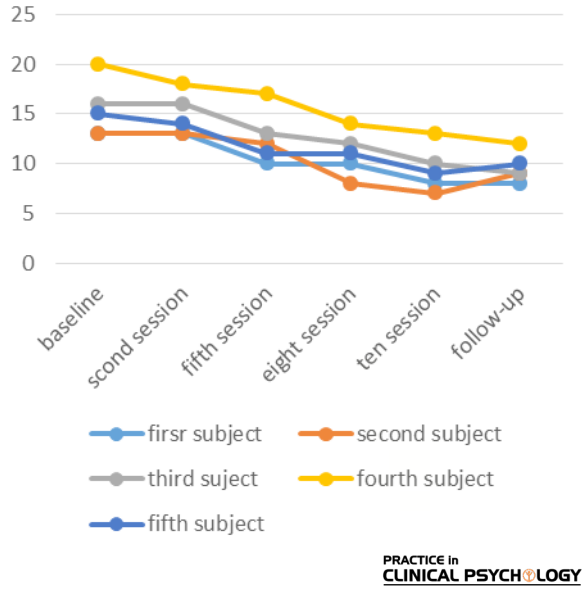

Figure 1. The prossec of changing scores of negative affectivity

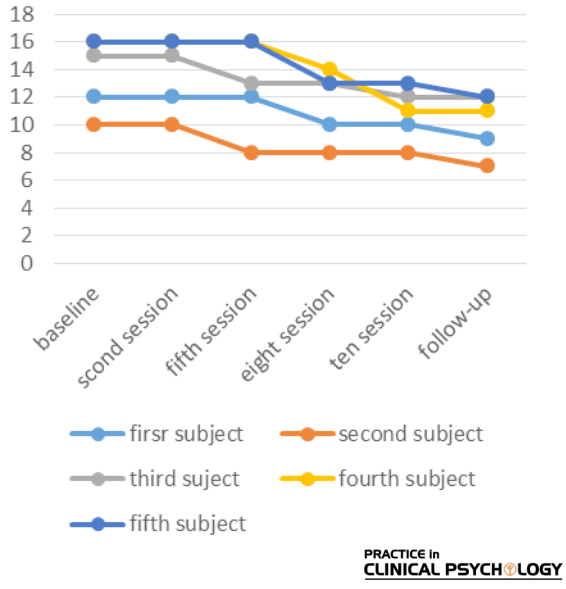

Figure 2. The prossec of changing scores of detachment

phase (RCI≤1.96). The graphs below show the change in scores of maladaptive personality traits in different stages of treatment.

According to the results, the intervention of transdiagnostic treatment for the component of identifying emotion for all 5 subjects in the intervention and follow-up phases was statistically significant (RCI≥1.96). The percentage of improvement after treatment for subjects 1 to 5 were equal to 28%, 52%, 36%, 23%, and 40%, respectively, in the post-treatment phase and 30%, 46%, 38%, 21%, and 22%, respectively, in the follow-up phase. The overall improvement percentage for the subjects was 35% in the post-treatment phase, which reached up to 33% in the follow-up phase. In addition, because of the improvement percentage of over 50%, the intervention for the second subject was also clinically significant.

Regarding the processing emotions component, the transdiagnostic treatment intervention was statistically significant for all 5 subjects in the intervention and follow-up phase (RCI≥1.96). The percentage of changes after treatment for subjects 1 to 5 in the processing emotion component was equal to 17%, 50%, 47%, 32%, and 40% respectively, with an overall improvement percentage of 37%. In the follow-up phase, this rate was 11%,

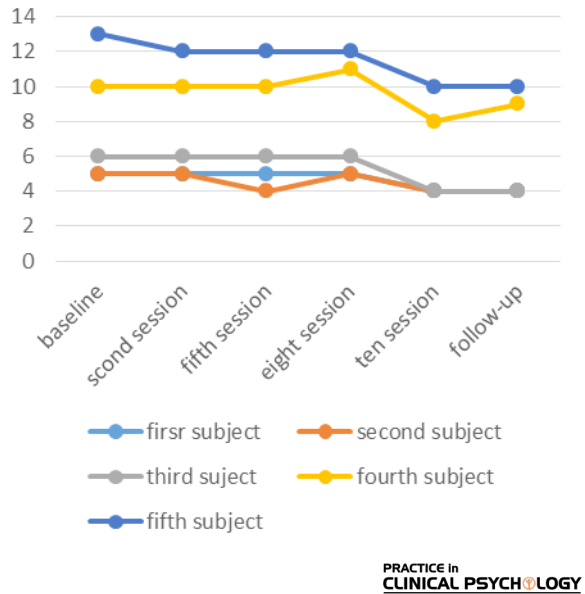

Figure 3. The prossec of changing scores of antagonism.

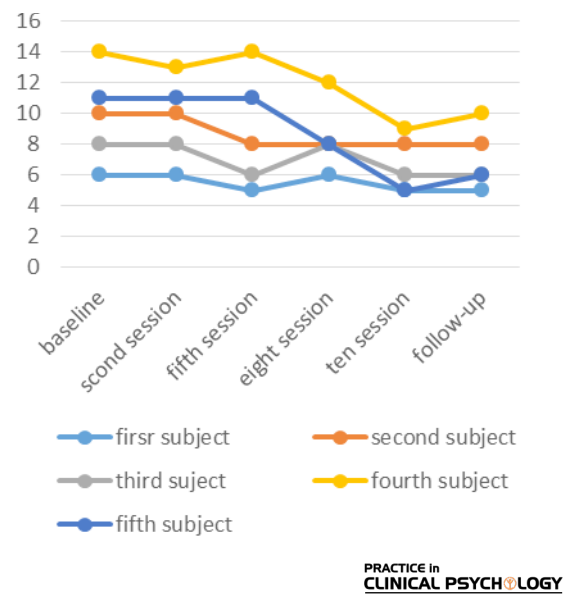

Figure 4. The prossec of changing scores of disinhibition

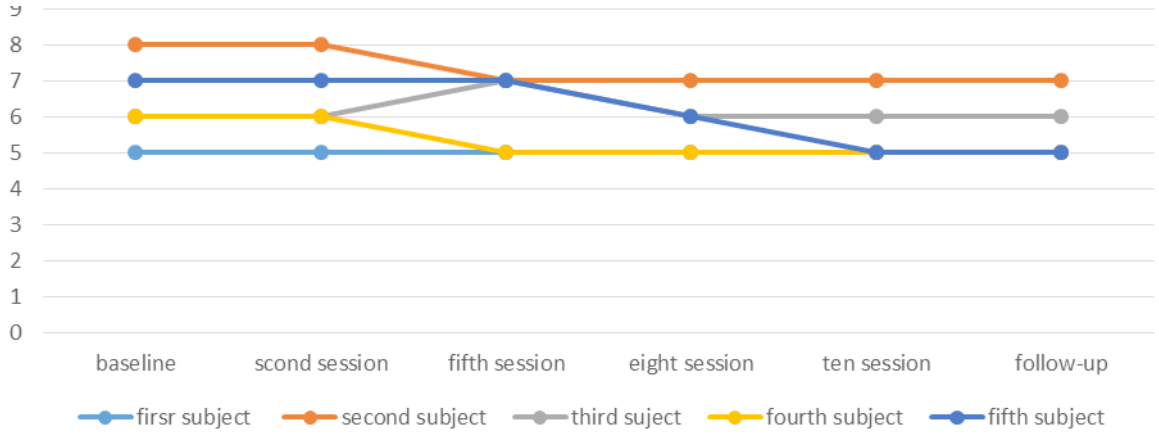

Figure 5. The prossec of changing scores of psychoticism

46%, 39%, 39%, and 44%, respectively, for the subjects, with an overall improvement percentage of 35%. Also, because of the improvement percentage of over 50%, the intervention for the second subject was clinically significant (Table 4).

In terms of the expressing emotions component, the intervention of transdiagnostic treatment was statistically significant for all 5 subjects in the intervention and follow-up stages (RCI≥1.96). The percentage of changes after the treatment for subjects 1 to 5 in the expressing emotions component was equal to 28%, 57%, 51%, 38%, and 50%, respectively, with an overall improvement percentage of 44%. In the follow-up phase, these rates were 24%, 5%, 46%, 27%, and 45%, respectively for the subjects, with an overall improvement percentage of 39%. Also, considering the improvement percentage of over 50%, the intervention in the expressing emotions component was cli n ically significant for the second, third, and fifth subjects. The Figures 1-8 show the trend of changes in the scores of subjective mentalized affectivity dimensions.

Discussion

The results showed that transdiagnostic treatment is effective in all three dimensions of mentalized affectivity (identifying, processing, and expressing emotion), negative affectivity, and detachment. These findings are indirectly consistent with the results of the studies by Ellard et al. (2010), Farchione et al. (2012), and Corpas et al. (2022). They have shown the effectiveness of transdiagnostic treatment in reducing the symptoms of GAD.

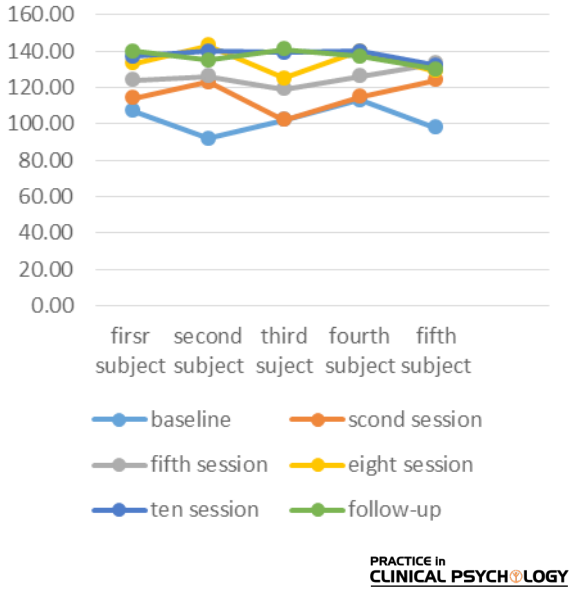

Figure 6. The prossec of changing scores of identifying emotion

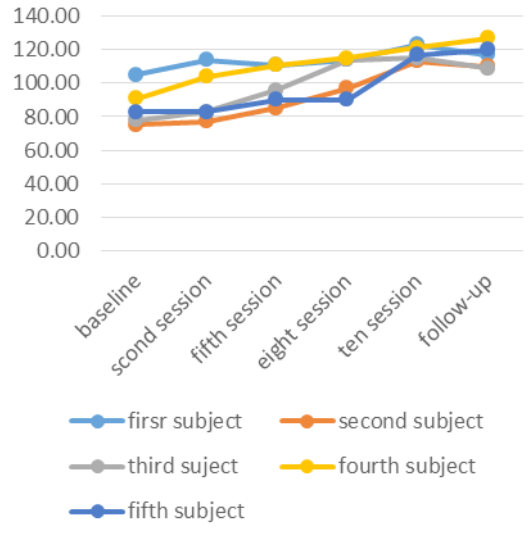

Figure 7. The prossec of changing in prossecing emotion score

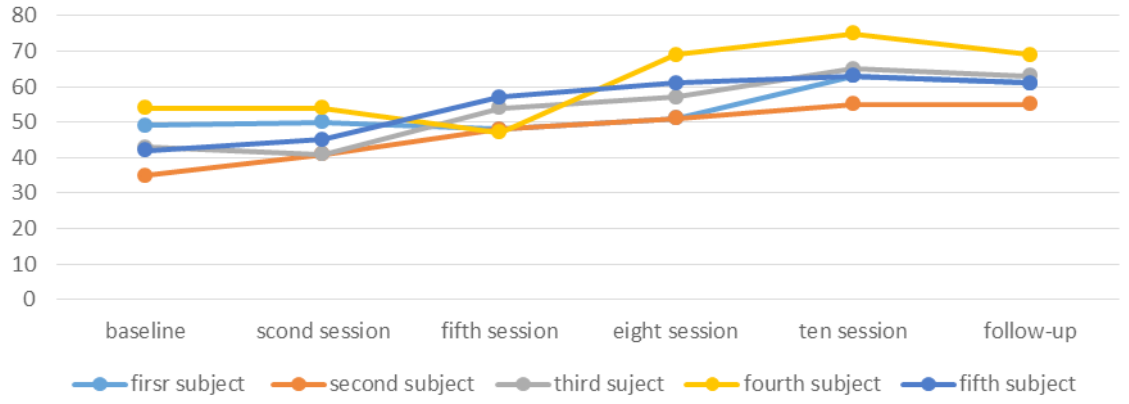

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Figure 8. The prossec of changing in expressing emotion scores

The findings of the present study showed that transdiagnostic therapy is effective in modulating identifying, processing, and expressing emotion components. One of the possible causes and explanations of the effect of transdiagnostic treatment on psychological variables in the present study is the attention of the transdiagnostic approach to the basic and common factors underlying emotional disorders. According to Barlow's transdiagnostic treatment, mental disorders are more similar than different, and their main commonality is the negative response or reaction of people to intense and disturbing emotional experiences (Kennedy & Barlow, 2018). This protocol focuses on emotion and maladaptive emotion regulation strategies and targets the common causative mechanisms of emotional disorders. In addition, treatment with Barlow's transdiagnostic protocol emphasizes the adaptive and functional nature of emotions, increasing the patient's awareness of the role of cognitions and emotions, physical sensations, and behaviors (Farchione et al., 2012).

Being aware of emotions, facing emotions, accepting emotions, and not suppressing them are among the effective strategies in emotion regulation that are frequently used in the transdiagnostic approach. One of the important parts of transdiagnostic treatment is understanding the adaptive nature of emotions and increasing emotional awareness. Therapy sessions teach clients that all emotions, both positive and negative, are important and necessary and the goal is not to eliminate but to identify, tolerate, and cope with negative emotions (Barlow, 2011). As a result of this awareness and the mentioned emotional skills training, the improvement of the emotional skills of clients is not far from expected.

Considering the change in mentalized affectivity scores as well as patients' negative affectivity as a result of providing transdiagnostic intervention, this factor is always one of the main goals of transdiagnostic treatment. Barlow's transdiagnostic protocol aims to achieve improvement with some techniques and skills and efforts to reduce the severity of this factor by modulating the intensity of the patient's negative reaction to negative emotions. The reduction of negative emotion scores as one of the central and transdiagnostic factors is not because of the direct targeting of these emotions; however, this treatment method, in addition to acknowledging negative emotional experiences and not seeing the need to reduce them, values them. It is adaptive and functional and emphasizes reducing emotional reactions to these negative emotions rather than reducing negative emotions. Accordingly, the changes in negative emotions are mostly because of the reduction of avoidance and negative reaction to these emotions, not intending to reduce or increase the emotions. This method helps the patient to reduce the intensity and occurrence of negative emotional habits, reduce the amount of damage, and increase individual and interpersonal functions by adjusting emotional regulation habits (Abdi, Bakhshi & Mahmoud., 2013).

Psychoeducational strategies, self-control of thoughts, exposure, prevention, and response management have shown good results in previous studies and are part of the techniques used in the treatment. These techniques facilitate the identification of thoughts that influence emotions and behaviors that cause anxiety and depression. Such knowledge gives patients the necessary security to face the situations and decisions needed in life (Post, 2014). Improving emotional regulation and management skills and the strategies that people use to regu-

late their emotions can improve their health in various biological, psychological, social, and moral dimensions. As a result, by improving emotional regulation skills as a basic and central factor in personality, people experience fewer personality and interpersonal problems and thus have a higher quality of life. Also, knowing the nature of thoughts and emotions and identifying and practicing the right ways to manage these dimensions will help to adjust the maladaptive personality traits in people. Transdiagnostic treatments have several advantages. A transdiagnostic approach may reduce the length and overall cost of treatment, increase clinical capability and simplify clinical training, shorten the gap between research and practice, facilitate the dissemination of evidence-based treatments, and help therapists broaden their perspectives (Barlow et al., 2016; Leichsenring & Steinert, 2018). Transdiagnostic treatments may also offer benefits beyond efficacy. Their increasing popularity reflects the general need for clarity, simplicity, and an emphasis on commonality (Schaeuffele et al., 2021).

Study limitations

The generalizability of the present findings is limited by considering the limitations of single-case designs, such as the small sample size. Given the limitations, further research is needed to confirm the efficacy and applicability of these intervention methods in people with GAD comorbid with depression in the form of randomized controlled trials with larger sample sizes.

5.Conclusion

Considering the effectiveness of transdiagnostic treatment on mentalized affectivity, dimensions of negative affect, and detachment, transdiagnostic treatment can be used by therapists, according to the conditions and needs of patients, along with other treatment models for people with GAD.

Ethical Considerations

Compliance with ethical guidelines

The study was apprived by Department of Psychology, University of Isfahan (Code: REC.1398.013), and was registered with the following code in the Iranian clinical trial site: IRCT20200918048749N1. Ethical principles included full awareness of the participants about the research process and the confidentiality of their information.

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Authors' contributions

All authors contributed equally to preparing all parts of the research.

Conflict of interest

The authors declared no conflict of interest.

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