Research Paper

Comparing the Effectiveness of Schema Therapy With Acceptance and Commitment Therapy on Cognitive Avoidance in Patients With Generalized Anxiety Disorder

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ABSTRACT

Objective: This study aimed to compare the effectiveness of schema therapy with acceptance and commitment therapy (ACT) using exposure techniques on cognitive avoidance in female patients with generalized anxiety disorder.

Methods: A total of 10 women with generalized anxiety disorder were selected through purposeful sampling with Structured Clinical Interview for DSM Disorders (SCID-5). To determine the absence of personality disorder, Millon's clinical multiaxial inventory (MCMI-III) (Millon and Groosman, 2005) was used. Schema therapy was conducted for 20 weekly sessions and ACT with exposure techniques for 12 weeks and follow-up for 6 weeks. The cognitive avoidance questionnaire (CAQ) (Sexton and Douglas, 2004) was used as a pretest and posttest to follow up on the results. Analysis of variance with repeated measures was used to test the research hypotheses.

Results: The results showed that schema therapy is more effective than ACT in the subscales of thought suppression (F=12.80, P=0.037) and avoidance of threatening (F=25.61, P=0.015), but they have no significant statistical difference in other subscales and total score. Both treatments significantly reduced the total score of cognitive avoidance, but they lacked a statistically significant difference.

Conclusion: Schema therapy and ACT with exposure techniques are effective in reducing the severity of symptoms and improving cognitive avoidance in females with generalized anxiety disorder.

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Highlights

● Although schema therapy and exposure techniques in acceptance and commitment therapy can reduce symptoms of anxiety due to reducing cognitive avoidance and recovering processes of the emotions, schema therapy is more effective in some components.

● Learning exposure techniques based on encouraging individuals to focus on repeated exercises with anxious stimuli and consciousness can help the individual abandon cognitive avoidance due to concern about the future.

Plain Language Summary

GAD is an anxiety disorder that greatly affects the quality of life and is associated with the health of the affected population. This disorder is one of the most common disorders. Few studies have compared the effectiveness of schema therapy and acceptance and commitment therapy on cognitive avoidance in GAD female patients. Therefore, the present study aimed to compare these two methods in reducing cognitive avoidance in these patients. Based on the study findings, schema therapy and acceptance and commitment therapy with exposure techniques are effective in reducing the severity of symptoms and improving cognitive avoidance in females with GAD, but schema therapy is more effective in some components.

1. Introduction

According to the Diagnostic and Statistical Manual of Mental Disorders (the Fifth Edition), Generalized Anxiety Disorder (GAD) is extreme anxiety about several events and activities for at least six months that has led to the disruption of essential areas of the individual function. In this disorder, it is difficult to control anxiety (Johnson, Ulvenes, Øktedalen, & Hoffart, 2019; Luo et al., 2019). This disorder is prevalent among women, with approximately two-thirds of the affected people being women (Luo et al., 2019). The disorder's prevalence rate is 5.1%–11.9% (Goldfinger, Green, Furtado, & McCabe, 2020), and lifetime prevalence is about 6% of common psychiatric disorders (Hantsoo & Epperson, 2017). Also, the results of some epidemiological studies in Iran indicate that GAD is the most common anxiety disorder in the country (Hajebi et al., 2018). Several factors contribute to the emergence, exacerbation, and persistence of the symptoms of this disorder (Zainal & Newman, 2018).

Based on the cognitive-behavioral theories, individuals with GAD have certain emotional schemas that come in the form of negative thoughts, ruminations, cognitive avoidance of negative emotions, and the continuation of worry experiences (Besharat, Atari, & Mirjalili, 2019). Cognitive-behavioral avoidance is one of the important factors in the onset and continuation of the symptoms of GAD, which is the automatic process of avoiding threatening thoughts and concerns (Mahoney, Hobbs, Newby, Williams, & Andrews, 2018). Avoidance is one of the coping strategies that reflect the cognitive, emotional, and behavioral efforts of a person to manage specific internal and external situations (Wahl et al., 2019).

Avoiding emotions leads to maladaptive behaviors, and GAD patients try to prevent these responses, which lead to more distress and reduce the quality of life of people with this disorder (Malivoire, 2020). Also, according to recent studies, avoiding the emotions intensifies the symptoms and increases anxiety levels and the incidence of maladaptive responses and GAD symptoms. Therefore, a defective cycle is formed, in which avoidance increases anxiety and vice versa (Fayazbakhsh & Mansouri, 2019).

Safran (1990) believed that interpersonal schemas create cognitive-interpersonal cycles and are barriers to the effect of classical cognitive-behavioral techniques for GAD patients. Schema Therapy (ST) is a treatment that has been designed and developed to overcome such problems that are not well-suited to classic cognitive-behavioral therapy (Rezaee, Sepahvandi, & Mirzaee Haabili, 2017). The emergence of postmodern theories is more pragmatic and conceivable assumptions, while the traditional coping skills to control thoughts are incompatible or for physiologically disordered targets. There are newer approaches based on acceptance or inclination experiences and are more accepted (Barlow, 2004).

Acceptance and Commitment Therapy (ACT) is an alternative to classical cognitive behavioral therapy and has been developed from a variety of psychological

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interventions with a new framework for the relational frame theory (RFT) (Hayes, Levin, Plumb-Vilardaga, Villatte, & Pistorello, 2013). This intervention is based on experiencing life, and unlike the classical approach of cognitive behavioral therapy, this treatment does not deform or abandon annoying thoughts and emotions but reinforces psychological flexibility. In this approach, mindfulness and psychological flexibility are important factors in contacting the moments of life, and appropriate behavior parallels individual values (Bond, Hayes, & Barnes-Holmes, 2006). In other words, this treatment aims to reduce the experimental avoidance with increased psychological flexibility.

A flexible person does not try to change and control unwanted thoughts. So instead of avoiding unwanted events, energy is spent on values and quality of life (Hayes, Strosahl, Bunting, Twohig, & Wilson, 2004). Reduction in experiential avoidance is a mediator of change in symptom outcome and quality of life in acceptance-based behavior therapy for GAD (Eustis, Hayes-Skelton, Roemer, & Orsillo, 2016). In this regard, trying to avoid or control annoying mental experiences is ineffective or reversible and causes patients to escalate, so they should try to accept these experiences fully. The next step is emphasizing awareness, and the individuals become psychologically and physically aware of their thoughts, feelings, and behaviors at the moment. In the third step, one learns about mental experiences. Then, in the fourth step, the focus is conducted on the life story so that the person would have a new vision in life. The last step is helping to recognize the person's values, which can be used for specific behavioral purposes (enlightening values), and finally, doing an act of commitment and focusing on specific goals (Narimani, Alamdari, & Abolghasemi, 2014). On the other hand, in this treatment with exposure techniques, patients were taught to think about the worrying events for a long time (Mahoney, Hobbs, Newby, Williams, Sunderland, & Andrews, 2016). Exposure is to remember a picture of a frightening expectation and focus on this image. It is done in many studies of high impact (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Several researchers have reported high levels of reducing GAD symptoms in exposure techniques (Weisman & Rodebaugh, 2018). Most researchers examined the effectiveness of ACT and exposure techniques on treating anxiety disorders, especially GAD, separately, but few studies have suggested the combined effects of these two therapies (Twohig et al., 2018).

Many studies have sought to refine further and develop GAD's theoretical cognitive and behavioral models to enhance our understanding of the underlying mecha-

nisms of the disorder and to take steps to develop evaluation and treatment (Krafft, Ong, Davis, Petersen, Levin, & Twohig, 2021). Although ACT-based therapies have shown promising early results, it is still unclear that the mechanisms identified in the theoretical model target the important components highlighted in GAD. In addition, the proposed goals in this treatment emphasize the problems of emotion intolerance and avoidance of emotions and thus increase their intensity. This avoidance of emotions also leads to avoidant behaviors (Mokhtarinejad, Mirzaian, & Hassanzadeh, 2020). The emphasis of ACT is on accepting emotions and not avoiding them so that it can be a good treatment for GAD. On the other hand, the use of exposure techniques increases the effectiveness of this treatment (Mahmoud, Hashemi, & Sohrabi, 2016). Therefore, one of the therapies used in this study was ACT with exposure techniques.

On the other hand, in ST, which is considered one of the third wave therapies like the ACT, emotion processing and negative interpretations of emotions lead to the use of anxiety as a strategy for coping with emotional situations, suggesting that correcting beliefs about emotions may eliminate reliance on worry as a strategy for avoiding emotions (Khaleghi, Mohammadkhani, & Hasani, 2016). This treatment emphasizes changing the content of thoughts, unlike ACT, which emphasizes the process and acceptance of thoughts and feelings (Fathi, Khodarahimi, & Rasti, 2017). Therefore, these two treatments were selected from the third wave therapies to compare their results with each other.

Even though ACT is a strong alternative to classic treatments, which increases the acceptability and participation in behavioral changes, therapeutic exposure by creating responsiveness of flexibility and learning new manners to confront anxiety stimuli reduces the anxiety greatly. ST is also effective on GAD. Nevertheless, there has been little research comparing the effectiveness of ST and ACT with exposure techniques on cognitive avoidance in GAD patients. Therefore, in the present study, we attempted to compare the effects of the two above-mentioned therapeutic methods in reducing cognitive avoidance in female patients with GAD.

2. Materials and Methods

Study procedure and participants

This research was a cross-sectional and quasi-experimental study with a pretest-posttest design without a control group. It consists of the following steps: 1) random substitution of subjects; 2) pretest and data collection;

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3) run the independent variable on the test group; and 4) posttest implementation and data collection. The statistical population of this study consisted of all female clients with GAD living in Zanjan City, Iran, who were referred to the private counseling centers of this city in 2017. The samples were recruited by purposeful sampling.

The sample size was estimated at 22 based on an alpha of 5%, frequency of 77%, and a small effect size with G. power. In this process, 11 individuals were randomly assigned to each group. In the ACT group, three people did not participate in the third session because they thought this treatment style was inappropriate. In the fourth session, one person left the treatment due to changing her residence and moving away from the treatment site. Two people in the fifth and sixth sessions stopped treatment for unknown reasons. In the ST group, 4 women left the therapy until session 5 because the protocol did not meet their needs. Two other women left therapy in sessions 6 and 7 for unknown reasons.

People who met the inclusion criteria of the research were selected and then randomly assigned into two experimental groups. To qualify for the GAD sample, a Structured Clinical Interview for DSM Disorders (SCID-5) was initially performed by a clinical psychologist for diagnosis. It is necessary to mention that clients should not have consumed anti-anxiety and antidepressant drugs for at least four months before this study. The patients who took medication were excluded from the research. To prevent possible biases, the diagnosis was left to someone other than the researcher. After the diagnosis of GAD in the candidates, the eligible samples were selected with the following criteria: not receiving psychological treatment, having a minimum of 10 years of education, lacking severe personality disorder, and being 18 to 30 years old. To identify people with severe personality disorders, Millon's clinical multiaxial inventory (MCMI-III) was implemented. Severe personality disorder, according to Millon is a borderline, schizotypal, and paranoid personality disorder. Furthermore, those were excluded from research who got more than 84 (Base Rate [BR]) of the baseline score MCMI-III. The cognitive avoidance questionnaire (CAQ) (Sexton and Douglas, 2008) was used as a pretest and posttest and followed up on the results. The demographic characteristics questionnaire included gender, age, education, marital status, job status, and disease duration.

To observe ethical issues, the consent of the clients was obtained. Since obtaining a code of ethics was not required at the time of the study, the present study lacks a code of ethics, but all the ethical principles governing the

research have been observed. The samples were assured that the research results were reported without mentioning the name. It should be noted that the participants had complete authority to sign this consent. At first, a pretest was performed, and then ST was applied for 20 weeks. For the other group, ACT with exposure techniques was done for 12 weeks. Each case was followed up for 6 weeks after terminating the therapy.

Study Measures

Structured clinical interview for DSM disorders (SCID-5)

Structured Clinical Interview for DSM Disorders (SCID-5) is a semi-structured interview for the main diagnoses of DSM-5 (previously given on Axis One). This tool is performed by a trained clinician or mental health professional familiar with the diagnostic and classification criteria for disorders in DSM-5. The target population for an interview includes psychiatric patients or those with a general medical condition, or people who do not identify themselves as patients (such as the general population survey or relatives of the patient). The diagnostic and language coverage used in SCID-5 makes it suitable for people over 18 years old; however, with a slight change in the words of the questions, it may also be used for adolescents. An ordinary person can understand the SCID-5 language. People with severe cognitive impairment, restlessness, or severe psychotic symptoms may not be able to have a SCID interview. These people are often identified in the first 10 minutes of the interview. In such cases, the SCID can be used as a diagnostic checklist for interviewing other informed sources (Osório et al., 2019).

The structured clinical interview for Axis I disorders is a flexible interview conducted by Spitters, Gibbon, and Williams. Tran and Smith reported a 60% kappa coefficient as the inter-reliability for SCID-5 (Osório et al., 2019). Sharifi et al. (2004), after translating the questionnaire into Persian, conducted this interview on a sample of 299 people. The diagnostic agreement was moderate or suitable for most general and specific diagnoses (kappa above 60%). The overall agreement (52% of the total current diagnoses and 55% of the total lifespan diagnoses) was also good (Sharifi et al., 2004).

Millon Clinical Multiaxial Inventory (MCMI-III)

The MCMI-III was published in 1994 and reflected revisions made in the DSM-IV. This version removed specific personality scales and added scales for depres-

Table 1. Summary of ACT intervention plan

Sessions	Descriptions
1	Review the history of the problem and evaluate it Present the goals of the treatment and that the change is possible An explanation of the treatment philosophy based on the approach Visualization training A consultation contract included timely attendance and homework.
2	Investigate the interaction of thoughts and feelings, and actions Creating frustration with previous ways that a person has been doing Teaching that any action to avoid or control unwanted mental experiences is ineffective Reach references to creative frustration Transparent references values
3	Exercises for clarifying values, identifying ineffective control strategies, and trying to accept painful events instead of avoiding them Identifying and confronting worries and awareness of the consequences of avoiding confrontation with painful events
4	Continuing exposure exercises and visual encounters Continue clarity of values, acceptance training, and change the concepts of language using allegory
5	Exercises to deal with concerns Awareness of mental and physical emotions and focus on activities (such as walking) and emotions Discussing barriers and practice, explore the feasibility of value-related activities, non-judgmental processing Exercises for satisfaction and dissatisfaction with the suffering of life
6	Providing an introduction to setting effective goals related to values, to focus on thoughts and feelings without sticking to their content Giving assignments and getting feedback Continuing exercises to deal with emotions related to their concerns and their discussion.
7	Continuing to set effective goals related to values
8	Exposure exercises
9	Discussion of the stages of the activity and the cycle of activity and focusing exercises
10	Doing exercises while walking
11	Exercises for clarifying values and emphasizing empowerment
12	Motivation means "committed action" and acceptance of mental experiences.

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sion and PTSD, bringing the total number of scales to 14 personality scales, 10 clinical syndrome scales, and 5 correction scales. The previous 3-point item-weighting scale was modified to a 2-point scale. Additional content was added to include child abuse, anorexia, and bulimia. The Grossman facet scales are also new to this version. The MCMI-III comprises 175 true-false questions that reportedly takes 25–30 minutes to complete. The ability of the MCMI items to give reliable indications of the domains of interest was examined using internal consistency and test-retest reliability. Internal consistency is the extent to which the items on a scale generally measure the same thing.

The Cronbach alpha values (an estimate of internal consistency) and median (average) values were 0.84 for the personality pattern scales, 0.83 for the clinical syndrome scales, and 0.80 for the Grossman facet scales.

The patients' raw scores are converted to Base Rate (BR) scores to allow comparison between the personality indices. BR scores are indexed on a scale of 0-115, with 0 representing a raw score of 0, a score of 60 representing the median of a clinical distribution, 75 serving as the cut-off score for the presence of disorder, 85 serving as the cut-off score for the prominence of disorder, and 115 corresponding to the maximum raw score. BR scores falling in the 60-74 range represent normal functioning, and 75-84 correspond to abnormal personality patterns, but average functioning and BR scores above 85 are considered clinically significant (i.e., representing a diagnosis and functional impairment) (Choca & Grossman, 2015). According to the results of data analysis in Iran, using operating characteristics (prevalence, sensitivity, and specificity) of MCMI-III scales, the predictive powers (positive, negative, and overall) of the 24 scales were calculated. The results showed excellent diagnos-

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Table 2. Summary of schema therapy intervention plan

Sessions	Topics	Announcements of Sessions
1	Alliance with the patient	Understanding, empathy with the patient, and examining the problem Formation and diagnosis of the problem
2	Education	Train the therapist's expectation of treatment and cognitive-behavioral training, and create an agreement
3	Review thoughts, pre-income, and consequences of behavior	Identification of avoidance and fundamental beliefs
4	Identify distorted thoughts	Evaluating the cycle of thoughts and behavior of references and training on cognitive distortions Identifying cognitive distortions
5	Encounter	Facing avoidance and correcting cognitive distortions
6	Correction of automatic thoughts	Changing and correcting cognitive distortions
7	Schema-based pattern education	Schema therapy modeling and conceptualization of the patient's problem in the form of schemas
8-10	Correct maladaptive schemas	The early maladaptive schemas Identify schema modes, processes, and maladaptive behaviors.
11-13	Schema (using emotional techniques modification)	Discussing the past experiences, discussing imaginary parenting schemas, discussing current events, mental imagery, and emotional evacuation
14-16	Modify schemas (use of behavioral techniques)	Removal of schema continuity behaviors, elimination of avoidance, and increased coping behavior
17-20	Correct maladaptive schemas (using cognitive techniques)	Critical review of schema supporting evidence Reviewing inconsistent evidence with schemas, counter-stance techniques, providing illustrative educational cards that are contradictory with schemas, and analyzing earnings and losses of schemes

tic validity for all MCM-III scales. Findings suggest that MCMI-III scales have high PPPs, NPPs, and OPPs. The PPPs ranged from 0.92 to 0.98; the NPPs ranged from 0.93 to 0.99; also, OPPs ranged from 0.58 to 0.83 for all scales (Sharifi, Moulavi, & Namdari, 2008).

Cognitive Avoidance Questionnaire (CAQ)

The cognitive avoidance questionnaire (CAQ) (Sexton & Douglas, 2004) is a cognitive avoidance measure and consists of 25 items and 5 factors: thought substitution, thought suppression, distraction, avoidance of threatening stimuli, and transformation of images into thoughts. Statements describing the use of these strategies are rated on a 5-point Likert scale (ranging from 1=not at all to 5=completely agree). Higher scores indicate a greater tendency to cognitively avoid threatening internal events. Psychometric properties of cognitive avoidance inventory, including internal consistency (The Cronbach alpha coefficient 0.71 to 0.95) and its re-testing credentials (0.70 to 0.85), have been confirmed in foreign studies (Sexton & Dugas, 2008). In the preliminary study, the psychometric properties of this questionnaire in a sample of 238 student population (127 girls, 111 males), including the Cronbach alpha coefficients for the inner sub-scales and cognitive avoidance scores of 0.73 to 0.92, were calculated. The correlation coefficients between the scores of participants in the research (54 girls, 43 boys) for re-test validity in two rounds with a two to four weeks interval for sub-scales and a cognitive avoidance score of 0.68 to 0.80 was calculated (Besharat et al., 2019). ACT with exposure techniques (Table 1) was conducted for 12 weeks and ST for 20 weekly sessions (Table 2).

3. Results

This study was performed on 10 women with GAD (5 people in each treatment group). Their age range was between 24 and 42 years (the mean age of the ACT group= 34.4 years, and the mean age of the ST group= 31.3 years). Of these 10 people, 2 had a diploma, 5 had a Bachelor's degree, 2 had a Master's degree, and 1 had a PhD. Two individuals in the ACT group and 3 individuals in the ST group were married, and the rest were single. Three individuals were employed, and 7 were unemployed.

Table 3. Descriptive statistics in two groups

CAQ	Levels	Mean±SD	
		Group 1 (Schema Therapy)	Group 2 (Acceptance and Commitment Therapy)
Thought substitution	Pre-test	12.80±2.58	13.40±1.14
	Post-test	11.40±1.67	12±2.12
	Follow-up	11.20±1.30	12.20±1.92
Thought suppression	Pre-test	15.60±5.41	15.60±4.72
	Post-test	10.40±0.54	12.60±2.40
	Follow-up	10.60±0.54	12.60±2.40
Distraction	Pre-test	19.60±5.68	20.40±4.15
	Post-test	13.40±1.14	9.20±1.64
	Follow-up	13.60±1.34	9.40±1.34
Avoidance of threatening stimuli	Pre-test	18±5.04	18.40±5.59
	Post-test	8.40±1.14	13.80±1.30
	Follow-up	8.60±1.14	13.60±1.51
Transformation of images into thoughts	Pre-test	18±5.04	18.20±5.80
	Post-test	13.40±1.51	9.60±2.07
	Follow-up	13.20±1.30	9.80±1.78
Total score	Pre-test	82±10.83	86±7.07
	Post-test	57±2.12	57.20±6.26
	Follow-up	57.20±1.92	57.60±5.68

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Analysis of variance with repeated measures was used to test the research hypotheses. Before using this test, its assumptions were tested. The assumption of normal distribution was verified by the Kolmogorov-Smirnov test (K–S test) ($P > 0.05$). Also, the results of Levene's test showed the equality of variances ($P > 0.05$).

Table 3 shows that the mean total score in cognitive avoidance with ST in the pretest was (M=82) and reduced in the post-test (M=57). It also shows that the mean total score in cognitive avoidance with ACT and exposure techniques in the pretest was (M=86) and reduced in the post-test (M=57.20).

As seen in Table 4, the two groups have significant statistical differences in thought suppression (F=12.80, $P < 0.05$) and avoidance of threatening (F=25.61, $P < 0.05$), but they have no significant statistical differ-ence in thought substitution, distraction, the transformation of images into thoughts and total score. According to Table 3, ST is more effective in thought suppression and avoidance of threatening than ACT. Table 5 shows that ST ($P < 0.05$) and ACT can significantly reduce cognitive avoidance.

4. Discussion

As discussed, both treatments can significantly reduce cognitive avoidance. Mirzahosseini, Pourabdol, Sobhi Gharamaleki, & Saravani (2016) showed that since ACT can significantly impact the acceptance of emotions and confrontation with them, this treatment can play an eminent role in decreasing cognitive avoidance in patients (Mirza-hosseini, Pourabdol, and Sobhi Gharamaleki, 2016). Other studies also showed that ST reduces cognitive avoidance (Ghadampour, Hosseini Ramaghani, Moradi, Rod, & Ali-

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Table 4. Tests of between-subjects effects

Groups	Sources	Type III Sum of Squares	df	MS	F	Sig.
Intercept	Thought substitution	2.351	1	2.351	0.618	0.489
	Thought suppression	5.005	1	5.005	3.527	0.157
	Distraction	5.684	1	5.684	1.619	0.293
	Avoidance of threatening	3.150	1	3.150	1.326	0.333
	Transformation of images into thoughts	0.589	1	0.589	0.148	0.726
	Total score	75.635	1	75.635	3.273	0.168
Group	Thought substitution	.415	1	0.415	0.109	0.763
	Thought suppression	18.170	1	18.170	12.803	0.037
	Distraction	33.776	1	33.776	9.620	0.053
	Avoidance of threatening	60.835	1	60.835	25.611	0.015
	Transformation of images into thoughts	30.952	1	30.952	7.781	0.068
	Total score	1.772	1	1.772	0.077	0.800

Table 5. Tests of between-subjects effects

Groups	Sources	Type III Sum of Squares	df	MS	F	Sig.
Schema therapy	Corrected Model	13.960a	1	13.960	10.365	0.049
	Intercept	126.680	1	126.680	94.060	0.002
	Total score	13.960	1	13.960	10.365	0.049
	Error	4.040	3	1.347		
	Total	16263.000	5			
	Corrected Total	18.000	4			
The cognitive avoidance questionnaire	Corrected Model	92.480b	1	92.480	4.313	0.129
	Intercept	359.921	1	359.921	16.787	0.026
	Total score	92.480	1	92.480	4.313	0.129
	Error	64.320	3	21.440		
	Total	16516.000	5			
	Corrected Total	156.800	4			

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pour, 2018; Mohammadian, Asgari, Makvandi, & Naderi, 2021; Rezaee et al., 2017). The reason for the effectiveness of ST in reducing cognitive avoidance is due to the mechanisms in this treatment. In this treatment, complete identification of the patient's emotions and their adjustment, identification of incompatible emotional strategies, and replacing them with more compatible emotional strategies, paying attention to the patient's emotions and using them to deepen the treatment and the importance of therapeutic relationship are performed.

Other findings showed ST is more effective in thought suppression and avoidance of threatening than ACT. Other research studies have suggested that GAD patients report active attempts at suppressing thoughts relating to worry triggers (Gústavsson, Salkovskis, & Sigurðsson, 2021). Thought suppression refers to attempts and behaviors related to eliminating unwanted or distressing thoughts from one's current awareness (Brereton & McGlinchey, 2020). Identifying and improving the causes of the problem can help resolve the problem. The active suppression of depressive thoughts may mask an underlying maladaptive schema in individuals (Najmi & Wegner, 2009). Considering that in the ST, sessions were focused on the fundamental beliefs for avoidance and facing it, correcting cognitive distortions, the conceptualization of the patient's problem in the form of schemas, removal of schema continuity behaviors, increasing coping behavior, correcting maladaptive schemas (by using cognitive techniques), can somehow explain the results of the research.

According to the findings, the present study was unique for the combination of ACT and exposure techniques for cognitive avoidance in GAD, but integrative treatments are used vastly worldwide (Apolinário-Hagen, Drüge, & Fritsche, 2020). It seems one of the reasons for integrating the exposure techniques and ACT that leads to reduced symptoms of anxiety is that along with making profound changes, cognitive therapy through ACT with exposure techniques leads to recovering processes the emotions. Learning techniques based on encouraging individuals to focus on repeated exercises with anxious stimuli and consciousness can help the individual abandon concern cognitive avoidance due to concern about the future. Considering the techniques used to create the effective setting of goals related to values, expression of differences in values, goals, and needs, focusing on thoughts and feelings without sticking to their content, giving assignments and getting feedback, continuing exercises to deal with emotions related to their concerns, exposure exercises can somewhat explain the results of the effectiveness of ACT with exposure techniques in this research.

5. Conclusion

The present study showed that ST is more effective than the combination of ACT with exposure techniques, but both of them have high efficiency in reducing cognitive avoidance in GAD. Since ST is more effective than ACT on the components of GAD, the results of the protocol used in this study for this treatment can be used in all clinical settings by psychiatrists and psychologists for patients with GAD. The short-term protocol of these treatments can be a roadmap to reducing cognitive avoidance and anxiety in these patients. Considering the limitations of this research, like the small sample size and the subject's homogeneity, it is recommended to check more in future research. Another limitation was the absence of the control group due to the small sample size. Therefore, it is suggested that this study be done with a larger number of samples and the control group. Also, the therapy can be done on men as well as women.

Ethical Considerations

Compliance with ethical guidelines

Participants were explained the general purpose of the research and the confidentiality of the information, and after informed consent, they completed the questionnaires. In addition, the subjects were free to discontinue the intervention sessions at any time.

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