



Original Article

The effectiveness of transdiagnostic treatment in clinical symptoms, cognitive emotion regulation, and distress tolerance of university students

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Abstract

Introduction: The present study aimed to evaluate the effectiveness of transdiagnostic treatment in clinical symptoms, cognitive emotion regulation, and students' distress tolerance.

Materials and Methods: The statistical population of this clinical trial included all students of Mashhad universities. Among them, thirty students were selected by the convenient sampling method and randomly assigned to an equal experimental group and a control group. The instruments included Simmons and Gaher Distress Tolerance Scale (DTS), Gross and John Emotion Regulation Questionnaire (ERQ), and Depression, Stress and Anxiety Scale (DASS). After performing the pretest, the experimental group received transdiagnostic treatment intervention in 10 two-hour sessions. Data analyzed using descriptive statistics and analysis of variance with repeated measures and SPSS 26 software.

Results: Based on the findings, there were significant differences between experimental and control groups in the scores of clinical symptoms, cognitive emotion regulation, and distress tolerance ($P < 0.05$).

Conclusion: It seems that transdiagnostic treatment is effective in clinical symptoms, cognitive regulation of emotions, and distress tolerance in university students.

Keywords: Clinical symptoms, Cognition, Distress tolerance, Emotion regulation, Transdiagnostic treatment.

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Introduction

The educating period in university is an exciting and challenging period for students. During this period, students, due to facing stressors and the need for proper adjustment, must have a high level of cognitive emotion regulation and tolerance to be more successful

in education and profession (1). The students need to have peace of mind in all dimensions and effective interventions in their learning environment to receive progress (2). Several studies show that mental disorders are common among Iranian students (3). Students' challenges can provide them with sources of

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clinical symptoms (anxiety, stress, and depression), endanger their health, and cause them to drop out of school (1). The clinical syndrome is a set of emotional symptoms that can cause a person to decline performance, including anxiety, depression, and stress (4). Studies have shown that anxiety, stress, and depression are closely related; which emotion you experience depends on how you feel about controlling the moment and how well you think you can cope with the threat or challenge. In other words, the emotions are continuous (5). Depression is one of the diseases that cause disability. Depression, anxiety and stress are common among students. Planning for the future, striving for good grades, being away from home and family can lead to anxiety (6). These clinical symptoms interfere with the professional role, and impair their ability to regulate emotion cognitively (7,8). It affects the adjusted emotion and perception of experienced emotion (9). The studies conducted by Malesza (10), Benfer et al. (11), and Herwig et al. (12) showed that cognitive emotion regulation can trigger, increase, maintain or decrease positive emotions. Like psychological well-being and negative emotions such as depression and anxiety, it can play a significant role. Disability to cognitively regulate emotion in students can lead to increased clinical symptoms (anxiety, stress, and depression) (8).

Distress tolerance in the field of emotion regulation is a standard instrument (13). Distress tolerance refers to the ability to experience and resist in negative psychological states (14). Samimi et al. found a significant relationship between the components of distress tolerance and students' high-risk behaviors (15). To evaluate the clinical symptoms and increase cognitive regulation of emotion and distress tolerance, it is necessary to study the effect of different treatment approaches in this field. One of the new approaches in treating psychological trauma and raising the level of psychological variables affecting a person's mental states is transdiagnostic treatment (16), which has been developed for mental disorders, especially emotional disorders, and the underlying components of psychological trauma. It targets and applies to disorders and issues that have the same underlying basis. Therefore, it helps to understand the comorbidity between mental disorders. If a transdiagnostic factor is causally related to two or more disorders, it is targeted,

thus helping to understand psychological trauma in a more economical way (17). This treatment emphasizes changing non-adaptive responses to emotional experiences (18). Numerous studies have shown the effectiveness of transdiagnostic therapies in emotional disorders (19,20). Talkovsky et al. showed that transdiagnostic treatment may lead to a significant reduction in anxiety and depression (21). Also, integrated transdiagnostic treatment helps regulate emotion and improve quality of life in cardiovascular patients. Metacognitive therapy was more effective on positive refocusing, positive reappraisal and refocus on planning and had the least effect on self-blame, rumination and catastrophizing (22). The body was deformed and the results showed the effectiveness of this treatment (23). Considering the importance of students' mental health, and the role of emotion regulation and distress tolerance in their functioning, and the lack of coherent and clinical research in the field of transdiagnostic treatment, this study aimed to evaluate the effectiveness of transdiagnostic treatment in cognitive regulation and distress tolerance.

Materials and Methods

The statistical population of the present study includes all students of Mashhad Universities of in 2019-2020 academic year. In this way, after obtaining a license and inserting advertisements in universities (Ferdowsi University of Mashhad, Islamic Azad University of Mashhad, Attar Institute of Higher Education), the volunteers present to participate in the research were provided with the necessary explanations about the objectives and how to answer the questionnaire. Also, informed consent was obtained. Inclusion criteria included being a student of Mashhad University, aged 20-35 years, the average cut-off point score on the clinical symptoms, and the tendency to participate. Exclusion criteria included alcohol or substance use disorder, any type of psychotic disorder, bipolar disorder, and personality disorder, as well as physical disability and absence from treatment for more than two sessions. The volunteer students were assessed through Depression, Anxiety, Stress Scale (DASS) (24). Sample size based on Cohen's table was determined 15 cases in each group (25). So, thirty cases were selected through convenient method and divided randomly into experimental group (n=15) and a

control group (n=15). Finally, after three dropped cases, in each group, twelve participants were evaluated. The experimental group received Barlow's transdiagnostic treatment intervention (19) in ten two-hour sessions per week, but the control group did not receive any intervention. At the end of the sessions, and three months later, the participants were assessed. Also, to strengthen the present study results, the two groups were almost identical in age, socioeconomic and cultural level.

To observe ethical considerations before participating in the research, the necessary information about the objectives, method and duration of treatment, were provided. The participants were assured that the collected information is considered confidential and the results will be kept safe. At the end of the process, two sessions were set for the control group.

The summary of the sessions is as follows:

Session 1: Motivational interview to motivate members' participation and involvement in the treatment process, provide therapeutic logic, and set therapeutic goals.

Session 2: Providing psychological education; recognizing emotions and tracking emotional experiences; and teaching the three-component model of emotional experiences. Assignment: Completing the three-component emotional sheet.

Session 3: Review the previous session's assignments, teach emotional awareness, learn to observe emotional experiences (emotions and response to emotions), primarily using mindfulness techniques. Assignment: Complete the emotion monitoring sheet and EDBs, practice mindfulness.

Session 4: Reviewing the previous session's assignments, cognitive reappraisal; creating awareness of the interrelationships of thoughts and emotions, identifying automatic maladaptive assessments and common domains of thinking, cognition, and increasing flexibility in thinking. Assignment: complete the self-assessment and self-assessment review sheet.

Session 5: Reviewing the assignments of the previous session, identifying patterns of avoiding excitement; Familiarity with different strategies for avoiding emotion and its effect on emotional experiences and awareness of the contradictory effects of avoiding emotion. Assignment: Complete the list of emotional strategies.

Session 6: Reviewing the previous session's assignments, examining emotion-induced behaviors, identifying emotion-induced behaviors and understanding their impact on emotional experiences, identifying maladaptive emotion-induced behaviors, developing alternative action tendencies by encountering behaviors, Assignment: finding emotional behaviors and alternative actions and completing the sample leaf to change emotional behaviors.

Session 7: Reviewing the assignments of the previous session, awareness, and tolerance of physical feelings; increase awareness of the role of physical feelings in emotional experiences, perform visceral exposure or confrontation exercises to be aware of physical feelings and increase tolerance for these symptoms. Assignment: practice symptom induction and complete the symptom induction sheet.

Session 8 and 9: Review the previous session's assignments, and confrontation with emotion based on the situation; understanding the logic of emotional confrontation, teaching how to prepare a hierarchy of fear and avoidance, designing emotional confrontation exercises visually and objectively, and avoiding avoidance. Overview of treatment concepts and discussion of patient therapeutic progress; prevent recurrence, and get post-test and feedback from participants (26).

Data were analyzed in two sections of descriptive statistics and inferential statistics through SPSS statistical software. In descriptive analyses, indicators such as mean and standard deviation were used, and in inferential analysis, repeated measures analysis of variance was used.

Research instruments

A) Stress Anxiety Depression Scale (DASS-21): This questionnaire was developed in 1995 by Lovibond and Lovibond. This test consists of 21 questions that measure depression, anxiety, and stress symptoms on a four-point scale from 0 to 3. Each of the subscales of anxiety, depression, and stress consists of 7 questions. The final score is obtained through the sum of the related scores. Anxiety includes questions 20, 19, 15, 9, 7, 4, and 2. Depression is measured by questions 21, 17, 16, 13, 10, 5, and 3. Stress is measured by answering questions 18, 14, 12, 11, 8, 6, and 1. Each question is from zero (not at all about me) to 3

(absolutely true for me). Since, DASS-21 is the abbreviated form of the major scale (42 questions), each of these final scores of the subscales must be doubled. This scale is a useful tool for measuring the symptoms of negative emotions, and its reliability and validity have been confirmed in various studies (24,26). Cronbach's alpha of the original version of DASS was reported for all three subscales of depression, anxiety, and stress, 0.91, 0.84, and 0.90, respectively. The validity in this study was obtained by retesting for the subscale of depression, anxiety, and stress equal to 0.80, 0.76, and 0.77, respectively (27).

B) Emotion Regulation Questionnaire (ERQ): Gross and John developed this scale in 2003. This scale consists of 10 items and has two subscales of reappraisal (6 items) and suppression (4 items). The answers are scored on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Cronbach's alpha coefficient was 0.79 for reassessment and 0.73 for suppression.

The retest method reported the validity after three months for the whole scale of 0.69 (28). The Persian version of the Gross and John Emotional Regulation Questionnaire in Iranian culture has been standardized by Ghasempour, Ilbeigi, and Hassanzadeh. The questionnaire was reported through principal component analysis or Varimax rotation, the correlation between two subscales ($r= 0.13$), and criterion validity (29).

C) Distress Tolerance Scale (DTS): This questionnaire is a distress tolerance self-assessment index developed by Simmons and

Gather in 2005. This scale has fifteen items and four subscales called tolerance, appraisal, absorption, and regulation. Options for this scale are based on the Likert scale. Moreover, they are scored in the range of 1 (complete agreement) to 5 (complete disagreement). The high scores on this scale indicate high distress tolerance. The Persian version of the questionnaire has been standardized by Azizi, Mirzaei, and Shams. Cronbach's alpha for tolerance, absorption, evaluation, and adjustment subscales is 0.75, respectively. In addition, 0.70, 0.70, and 0.75 have been reported. Cronbach's alpha coefficient of the whole scale was 0.86 (30).

Results

The mean and standard deviation of the age in experimental, control, and total participants were 21.75 ± 2.00 , 21.08 ± 1.73 , 21.42 ± 1.86 , respectively. In each group, four participants were men, and eight were female. Eleven participants in the experimental group were single, and one was married. In contrast, nine participants in the control group were single, two were married, and one was divorced. Among the experimental group, nine of them had master degree, while one participant had bachelor, and Ph.D. degrees. In contrast, two, nine, and one of the control group had postgraduate, bachelor's, and master's degrees, respectively.

There were not differences, between the two groups in age ($P= 0.39$, $t= 0.87$), education ($P= 0.72$, $\chi^2= 1.33$) and marital status ($P= 0.46$, $\chi^2= 1.53$). Table 1 presents the mean and standard deviation of the research variables.

Table 1. Descriptive indicators related to research variables by groups

Variable	Groups	Pre-test		Post-test		Follow-up	
		Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Clinical syndrome	Experimental	64.00	9.72	38.83	6.11	31.83	7.83
	Control	62.33	10.68	70.17	12.04	72.67	17.67
Distress tolerance	Experimental	33.92	6.45	46.67	5.53	49.33	5.92
	Control	36.25	7.43	34.17	6.35	35.00	5.97
Emotion regulation/ suppression	Experimental	18.83	2.91	13.00	2.44	11.83	2.32
	Control	15.08	2.74	17.17	2.32	18.17	2.65
Emotion regulation/ reappraisal	Experimental	21.83	5.06	29.58	5.50	30.92	5.99
	Control	23.58	5.35	22.92	6.18	19.67	6.27

According to the results related to the assumptions, normality of research data, equality of research groups, and the random assignment of individuals in experimental and

control groups, repeated measures analysis of variance tests were used to examine the differences between groups (Table 2).

Table 2. The results of effects related to clinical symptom variables, distress tolerance, suppression, and reappraisal

Variable	Effects	Sources of changes	Total squares	df	Average squares	F	P	Eta
Clinical syndrome	Within-subjects	Time	1594.77	1.39	1147.47	13.91	0.000	0.387
		Time * Group	5971	1.39	4296.24	52.08	0.000	0.700
		Error	2522.22	30.57	82.49			
Distress tolerance	Between-subjects	Group	9940.50	1	9940.50	37.13	0.000	0.628
		Error	5890.11	22	267.73			
		Time	653.44	2	326.72	26.48	0.000	0.546
Emotion regulation/suppression	Within-subjects	Time * Group	1002.33	2	501.16	40.62	0.000	0.649
		Error	542.89	44	12.33			
		Group	1200.50	1	1200.50	12.67	0.002	0.366
Emotion regulation/reappraisal	Between-subjects	Error	2083.27	22	94.69			
		Time	58.86	2	29.43	45.61	0.000	0.675
		Time * Group	338.08	2	169.04	261.99	0.000	0.923
Emotion regulation/reappraisal	Within-subjects	Error	28.39	44	0.64			
		Group	91.12	1	91.12	4.87	0.038	0.180
		Error	411.19	22	18.69			
Emotion regulation/reappraisal	Between-subjects	Time	161.08	1.49	107.88	21.89	0.000	0.499
		Time * Group	521.69	1.49	349.39	70.89	0.000	0.763
		Error	161.89	32.85	4.92			
	Between-subjects	Group	522.72	1	522.72	5.70	0.026	0.206

The results of Table 2 show a significant difference between the rate of clinical symptoms, distress tolerance, suppression, and reappraisal in the pretest, post-test, and follow-up times ($P < 0.05$).

These results show that 39, 55, 68, and 50% of within-subjects changes are explained by time. The interactive effect results between time and group show that this effect is significant in the variables of the clinical syndrome, distress tolerance, suppression, and reassessment ($P < 0.05$). Therefore, there is an interaction between different levels of time and different levels of groups. These results show that time and group interaction explain 70, 65, 92, and 76% of intra-group changes. The intergroup effects result also shows a significant difference between the scores of clinical symptoms, distress tolerance, suppression, and reappraisal in the experimental and control groups ($P < 0.05$). The ETA squared size for the clinical symptom, distress tolerance, suppression, and reassessment variables is 63%, 37%, 18%, and 21%, respectively.

Discussion

This study aimed to evaluate the effectiveness of transdiagnostic treatment in clinical

symptoms, cognitive emotion regulation, and distress tolerance in university students. The results showed that transdiagnostic treatment is effective in clinical symptoms. The conducted studies support this finding (21,23,31-34). Torre-Luque et al. found that the behavioral-cognitive transdiagnostic treatment program altered the ordinary course of anxiety symptoms in adolescents by significantly reducing social anxiety and generalized anxiety symptoms and significantly improving behavioral and physiological (cardiac) function in a stressful situation (33). Fernandez Martinez et al. also stated that the long-term effects of a transdiagnostic prevention program improve children's life skills and show that this is a promising preventive intervention for young children with emotional problems (35). Mohajerin et al., used transdiagnostic treatment program to eliminate emotional disorders caused by body dysmorphic disorder.

They found that transdiagnostic treatment significantly reduces depression, symptoms of dysmorphic disorder, and body-related anxiety (23). These studies emphasize the effectiveness of transdiagnostic therapy on clinical symptoms, including anxiety, stress, and depression, and confirm the theories of recent

years. Brown and Barlow argue that different disorders in the diagnostic spectrum of anxiety categories can be addressed in one system. One-dimensional classification integrated (35). Today, anxiety disorders and depression are described as emotional disorders.

There is significant overlap between them (36), and many people with an anxiety or mood disorder have one or more other disorders, or they have another disorder (37) since transdiagnostic treatment is based on emotion. The studies have shown that deficits in emotion regulation skills are a fundamental feature of mood disorders (38).

Therefore, transdiagnostic treatment emphasizes changing non-adaptive responses to emotional experiences and aims to reduce the severity and incidence (18). The maladaptive emotional experience targets the main processes that cause emotional disorders (39). The treatment protocol is designed for comorbid diseases and based on the findings of different studies, and this treatment can significantly reduce stress, anxiety, and depression (19). The present findings also showed that transdiagnostic treatment is effective in the cognitive regulation of emotion and distress tolerance in students. The results of the present study are consistent with the results of Firoozi and Biranvandi, Rahmani et al., and Talebi et al. (18,22,40).

Firoozi and Biranvandi, in a study on cardiovascular patients, found that integrated transdiagnostic treatment is effective on cognitive regulation of emotion and improves patients' quality of life (22). Talebi et al., in their study on infertile women, showed that transdiagnostic treatment has significantly increased emotion regulation strategies and social adjustment of infertile women (18). Gamura and Arsenio stated that one of the factors that affect people's academic performance and mental health is their emotional response to stressful sources and their regulation strategies (41).

Other studies also show that emotion planning and regulation are positively related to individual performance (42). Emotion regulation has been suggested as a transdiagnostic construct or mechanism of psychopathology (43). People with emotional disorders use maladaptive emotion regulation

strategies to avoid unpleasant emotion, which is reversed and retains symptoms (44).

Thus, in explaining the effect on emotion regulation and distress tolerance, it should be noted that since transdiagnostic therapy is designed to teach therapists how to deal with their unpleasant emotions and does not use avoidance strategies in the face of the situation, feel them and learn to respond more adaptively, and thus use more adaptive emotion strategies (19), it is effective in regulating emotion.

Experiencing stress has adaptive emotion regulation strategies; by changing their emotions, they can effectively manage their negative emotions.

When these negative emotions are effectively and adaptively regulated, the person's tolerance also increases (6). The present study has some limitations. It has been conducted on university students in Mashhad, so generalization of the findings to other strata and geographical areas is limited. Information and data were collected through self-report questionnaires, which may be influenced by various factors such as respondents' tendency to present a positive image.

Because participants were pretested at the beginning of the study, they may have been sensitized to the experimental variable and given different answers to the post-test questions. It is recommended to use quality tools and interviews along with self-assessment questionnaires and like research be done on other sections of society and in other cities. It is recommended that research be performed on clinical patients referred to psychological and psychiatric clinics and non-volunteer participants be used in pretest studies to reduce the pretest effect.

Conclusion

It seems that transdiagnostic treatment effectively impact clinical symptoms, cognitive regulation of emotion, and distress tolerance in university students.

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