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RESEARCH ARTICLE

The Efficacy of Rational Emotive Behavior Therapy Intervention in Generalized Anxiety Disorder

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Background: Generalized Anxiety Disorder is one of the anxiety disorders which presents excessive anxiety and worries as central elements that are difficult to control in many situations or activities. Rational Emotive Behavior Therapy is one of the most important orientations among psychological intervention in the psychotherapy field. This approach is based on a transdiagnostic perspective. Additionally, this therapy has a strong research foundation especially in the treatment of anxiety disorders and depression. **Objective**: The present study aims to establish the efficacy of Rational Emotive Behaviour Therapy in medical students who are suffering from generalized anxiety disorder. **Method**: The sample of this study consisted of N = 40 first-year medical students (33 women and 7 men) and the average age for the entire group was Mage= 19.22, SD= 1.04. Each student participated at eight therapy sessions. The level of anxiety and irrational beliefs were measured at pre-intervention and post-intervention using psychological questionnaires. **Results**: Our findings indicate a statistically significant difference between the pre-intervention and post-intervention phase for the level of anxiety with a value of $t = 20.31$, $df = 78$, $P < 0.001$, for irrational cognitions with $t = 2.44$, $df = 78$, $P < 0.05$, for irrational beliefs with $t = 3.45$, $df = 77$, $P < 0.01$, as well as low frustration tolerance with $t = 2.57$, $df = 77$, $P < 0.05$ and awfulizing specifically. **Conclusion**: The Rational Emotive Behavior Therapy intervention is an extremely efficient psychological treatment for improving emotional functioning in medical students.

Keywords: Cognitive-Behavioral Therapy (CBT), Rational Emotive Behavior Therapy (REBT), Irrational Beliefs (IB), Rational Beliefs, Generalized Anxiety Disorder (GAD)

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Introduction

Generalized Anxiety Disorder (GAD) is one of the anxiety disorders that has as its central element excessive anxiety or excessive worries, which are difficult to control in many situations or activities. According to the DSM-5, the intensity, frequency and duration of concerns are disproportionate to the likelihood of the event occurring or the impact of the anticipated event [1]. Adults diagnosed with GAD are often worried about their daily activities, work tasks, the health of others, financial issues and claim that once the worry process has begun it is very difficult for them to stop it. Hoffman et al. [2] identified a significant deterioration of the quality of life index with impairment of social and occupational functionality in people with GAD, as compared to that observed in major depressive disorder and chronic diseases. The average age of onset of GAD is 30 years, but it can often be diagnosed in children and adolescents where the content of concerns refers to to school performance, academic performance, sports performance but also the elderly who may express concerns about medical conditions. In 2015, according to the World Health Organization, 264 million people were diagnosed with anxiety, the female population being much more affected than the male (4.6% globally compared to 2.6%) [3]. GAD is a chronic disorder that generates direct costs because of the frequent access to health services for consulting various medical specialties, and by drug use but also indirect costs related to low productivity, repeated sick leave, job loss, financial instability [4]. One of the most common comorbidities of GAD is depression but there are other anxiety disorders (panic disorder, social phobia, health anxiety). Cognitive behavioral therapy (CBT) approaches are empirically validated treatments, especially for depressive and anxiety disorders [5-7]. Rational Emotive Behavior Therapy (REBT), developed by Albert Ellis in 1955 is the first of the cognitive behavioral theories [8] that considers a person's rational beliefs to be of significant importance in developing and maintaining the psychological health and / or mental health disorders [9]. Inspired by the philosophy of Epictetus, Marcus Aurelius, and Bertrand Russell, who emphasized the importance of thoughts in understanding people's attitudes as well as the work of behavioral therapists such as John B. Watson and Mary Cover Jones, Ellis was able to overcome his own anxiety about public speaking ant to approach to women, while laying the foundations for REBT. The central theory of REBT is the ABC model, which states that an activation event (A) determines emotional, behavioral and cognitive consequences (C), a process that is mediated by the rational or irrational beliefs of the person (B). Rational beliefs are distinguished from irrational beliefs by the fact that they generate functional emotions and behaviors. Ir-

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rational beliefs are non-pragmatic, rigid, inconsistent with reality, and lead to emotional disturbances [10]. Ellis [11] talks about four types of irrational beliefs: rigid demands ("I have to be approved"), awfulizing beliefs ("If I'm disapproved, it's awful"), low-frustration tolerance beliefs ("I can't tolerate being rejected"), and depreciation beliefs ("I am useless if I'm disapproved"). According to the REBT theory, demandingness lead to the second level of irrational beliefs, which are evaluative in nature. REBT distinguishes between two levels of irrational beliefs, the primary level where demandingness represents central irrational beliefs, and the secondary level of irrational evaluative beliefs, awfulizing beliefs (AWF), low-frustration tolerance beliefs (LFT), and overall depreciation beliefs (GE / SD) [10-14] as mediators between demandingness and distress [10]. REBT therapists implement an active-directive therapeutic style, using Socratic and didactic methods supporting clients to dispute irrational beliefs and to develop effective, adaptive rational beliefs with a positive impact on their emotions, behaviors and thoughts.

Rationale of the present study

The effectiveness of REBT has been investigated in a number of studies for a variety of conditions such as obsessive-compulsive disorder [15], anxiety [16], social phobia [17], depression [18], adverse reactions of breast cancer treatment [19], psychotic symptoms [20]. This study aims to test the effectiveness of REBT in reducing the symptoms of generalized anxiety in first-year of general medicine by replacing irrational beliefs with rational beliefs about intolerance to uncertainty and danger, especially as previous research has shown that students with high levels of irrational beliefs are at risk of developing depression and anxiety [21,22].

Objective: The present study is intended to establish if the REBT psychological intervention is an efficient therapeutic approach for medical students who suffer from generalized anxiety disorder.

Method

Participants

The sample of this study consisted of N = 40 first-year medical students (33 women and 7 men) from GE Palade University of Medicine, Pharmacy, Sciences and Technology from Tirgu-Mures. The average age for the entire group was M_{age}= 19,22, SD= 1,04.

Compliance with Ethical Standards

The study is elaborated and conducted in concordance with the principles of American Psychological Association (APA), regarding the ethical standards in psychological research. Participants completed and signed the informed consents related to the participation in the study. Participants' privacy was protected by replacing their names with identification numbers on all research documents and analyses.

Procedure

The present study consisted in four phases. In the first phase, participants completed and signed the informed consents related to the participation in the study and they were selected from a number of 450 of medical students. Those included in the current study had a score of 15 or higher on the Hamilton Anxiety Rating Scale (HARS), which is considered a cut-off point for moderate clinical anxiety [23]. In the second phase, the Structured Clinical Interview for DSM-5 Disorders - Clinician Version (SCID-5-CV) was used for establish the diagnosis of GAD, and The Attitudes and Belief Scale 2 (ABS-2) was applied for students who presented specific GAD symptoms. This two phases were namely pre-intervention phase. The third phase consisted in conducting eight sessions of REBT interventions with students who presented GAD. In the fourth phase, Hamilton Anxiety Rating Scale (HARS) and The Attitudes and Belief Scale 2 (ABS-2) were applied again with the purpose of measuring the therapeutic effectiveness. The last phases were namely post-intervention phase. The specific therapeutic intervention was based on the REBT transdiagnostic approach as it was described by the Ellis (2005) [24] and David, Lynn & Ellis (2009) [25]. This intervention was focused on the A-B-C cognitive conceptualization model, debating irrational belief and behavioural techniques. Each student followed eight sessions of REBT plus two sessions for the primary and final psychological assessment. Five licensed therapists trained in Cognitive-Behaviour Therapy participated in the study, the average experience in the field of the therapists is 9,45 years'.

Measures

The Hamilton Anxiety Rating Scale (HARS), developed by Hamilton (1959), is used to assess the severity of anxiety symptoms in children and adults. The scale includes 14 elements for the cognitive, emotional and mainly somatic components assessment, which is based on the current health status of patients. The scale follows a semi-structured interview that includes questions about the presence of anxiety symptoms and answers are given on a scale in 5 steps (0: no anxiety, 4: severe anxiety) [26].

The Attitudes and Belief Scale 2 (ABS-2) is a scale that measures irrational and rational beliefs that was designed by DiGiusepe, Leaf, Exner and Robin in 1988 as a valid measure of the central constructs in REBT. The scale allows the calculation of separate scores on different types of irrational beliefs, as well as the evaluation of global values of rationality / irrationality. The scale contains a number of 72 items and three factors: cognitive processes (demandingness, global evaluation/self-downing, low frustration tolerance and awfulizing), content areas (approval, achievement and comfort) and phrasing (irrational and rational). The scale is administered in pencil-paper version, individually or in groups [27].

Structured Clinical Interview for DSM-5 Disorders - Clinician Version (SCID-5-CV) developed in 2016 by First et

al. is an updated version of SCID assessing various psychiatric conditions, including depressive disorders, anxiety disorders, somatic symptom disorders, substance-related disorders, psychotic disorders, eating disorders, The interview takes 45-90 minutes to administer and the questions are provided along each corresponding DSM-5 criterion, which aids in rating each of them present or absent. SCID-5-CV presents excellent reliability and high specificity. The percentage of positive agreement between the interview and clinical diagnoses ranged between 73% and 97% and the diagnostic sensitivity/specificity were >0.70. [28]

Results

As shown in the table I, our scores distribution reveals that the level of anxiety decreased after the REBT intervention from a very high level in pre-intervention, when M = 88.98, SD = 25.84, to a subclinical level in post-intervention, when M = 5.27, SD = 3.43, which is observable on the Hamilton's anxiety scale. The irrational cognitions, which were measured with the ABS-2, presented an average level in pre-intervention, when M=89.43, SD=44.46, while their level significantly decreased in post-intervention, when M=68.7, SD=30.0. In addition, the level of irrational beliefs (IB) was high in pre-intervention with M = 53.56, SD = 26.79, but it was very low after intervention, when M = 36.45, SD = 16.01. The irrational belief of low frustration tolerance (LFT) changed in particular after the REBT intervention, meaning that although the scores reached a moderate level in the pre-intervention phase with M = 26.13, SD = 13.40, we noticed that their level decreased in the post-intervention phase REBT, when M = 19.4, SD = 9.52. Besides, AWF scores were also moderate in pre-intervention, when M=24.44, SD=10.64, and their level decreased in post-intervention, when M=17.6, 7.83.

Our results (Table II) indicate a statistically significant difference between the pre-intervention and post-intervention phase for the level of anxiety (HARS) with a value of t = 20.31, df =78, P < 0.001, for irrational cognitions (ABS -2) with t = 2.44, df =78, P < 0.05, for irrational beliefs (IB) with t = 3.45, df =77, P < 0.01, and for low frustration tolerance (LFT) with t = 2.57, df =77, P < 0.05 and awfulizing (AWF) specifically. The totality of these results emphasize that the REBT intervention was extremely efficient for improving emotional functioning in medical students.

Table I. The distribution of scores of HARS, ABS -2, IB, LFT, AWF in the pre-intervention phase vs post-intervention phase, regarding REBT intervention.

	Pre-intervention		Post-intervention	
	M	SD	M	SD
HARS	88.98	25.84	5.27	3.43
ABS -2	89.43	44.46	68.7	30.04
IB	53.56	26.79	36.45	16.01
LFT	26.13	13.40	19.4	9.52
AWF	24.44	10.64	17.6	7.83

Table II. The intragroup statistical differences between the pre-intervention phase vs post-intervention phase regarding the REBT intervention.

	T	P	df.
HARS	20.31	<0.0001****	78
ABS -2	2.44	<0.05*	78
IB	3.45	<0.01***	78
LFT	2.57	<0.05*	78
AWF	3.25	<0.01**	78

Note. * p < .05, two-tailed. ** p < .01, two-tailed. *** p < .001, two-tailed, ****p < .0001, two-tailed.

Discussions

Our results showed that the REBT is a very effective psychological intervention for medical students with GAD. Also, another important observation is that generalized anxiety symptoms are directly proportional to the intensity of irrational beliefs, to the secondary ones, namely: low frustration tolerance (LFT) and awfulizing (AWF). Similar results were obtained by Buchmann in his study, that claims that LFT contributes to anxiety and depressive disorders presenting a unique variation, without the mediation of automatic thoughts [14]. Popa and Predatu emphasize the role of LFT in relation to emotional stability, demonstrating that the increase in emotional stability during CBT / REBT can be largely attributed to LFT reduction [16]. The association of irrational beliefs with anxiety has also been highlighted in other studies [21, 22, 29-32]. David and colleagues examined the relationship between irrational beliefs and emotions and found that low frustration tolerance and awfulizing were associated with emotion-focused coping potential in the case of depressed, anxious, angry, and guilty feelings [33,34]. The results of the meta-analysis conducted by David et al. [35] generated a significant effect of REBT for anxiety and quality of life. Another result of the present study was that the replacement of irrational beliefs with rational beliefs using beliefs disputation led to a reduction of anxiety symptoms recorded in the post-intervention evaluation phase. These results strengthen the observations of other studies concerning on the protective role of rational beliefs [36, 37].

Limits of the study

Our study presents some limitations. One of this limit is represented by the lack of follow-up with the purpose to establish if the effect of well-being, after the REBT intervention, is stable in time. Also, other limitation is the absence of control group composed by the individuals from waiting list or with placebo medication administrated.

Conclusion

Rational Emotional-Behavior Therapy is an efficient psychological treatment for medical students who suffer of Generalized Anxiety Disorders.

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Authors' contributions

AS (Conceptualization; Data curation; Methodology; Investigation; Writing – original draft)
COP (Conceptualization; Data curation; Methodology; Investigation; Formal analysis; Writing –review & editing; Supervision)
PO (Methodology; Formal analysis; Project administration)
NS (Methodology; Project administration)
CC (Conceptualization; Data curation; Writing – original draft)

Conflict of interest

None to declare.

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