



Integration of Chronotherapy with Rational Emotive Behavior Therapy for Generalized Anxiety Disorder: A Pilot Study

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ABSTRACT

This study explored the efficacy of chronotherapy combined with the Rational Emotive Behavior Therapy (REBT) for Generalized Anxiety Disorder. An experimental design was applied with the sample size of N=30 participants. The participants were selected from the province of Khyber Pakhtunkhwa (KPK) province. Generalized anxiety disorder-7 scale Urdu and DSM-5-TR was used to assess the participant's symptoms of Generalized Anxiety disorder. Firstly, the pre and post-test was tested for the C-REBT (chronotherapy and REBT) and REBT. The results showed that both were significant difference in reducing the anxiety symptoms in pre and post assessment. Findings suggested that C-REBT (chronotherapy and REBT) therapy has significant effect in alleviating the anxiety symptoms as compared to using REBT alone. The study endorsed the multifaceted psychological intervention strategies. Moreover, the study promoted the ideology of better management of mental health issues disorders tailored as per the needs of individuals and promote better mental health services in the under-represented areas of Pakistan.



Introduction

Generalized Anxiety Disorder (GAD) is a chronic and persistent condition characterized by excessive worry about various issues, including health, finances, relationships, work, and future events, which can interfere with concentration and lead to "catastrophizing" and heightened anxiety levels. (American Psychological Association, 2022). The overall prevalence of GAD was 3.7% across all surveys, with lifetime estimates varying significantly by country. Low-income countries had the lowest lifetime estimates (1.6%), middle-income countries had the average (2.8%), and high-income countries had the highest (5%) (Preti et al., 2019). The anxiety of the general anxiety disorder (GAD), a condition that affects approximately 4-6 United States citizens

that are typically between the ages of 45-59, is a common issue in wellness treatment. Only about 40%-60% of patients receive effective treatment for this disorder, which has led to increasing support and access for this type of issue (Schenk et al., 2020). According to a study conducted by Bano et al. (2021), there were approximately 12.9% of males and 16.5% of females that were found to have anxiety; with their highest prevalence occurring at approximately 50-60 years of age, and 17.5% of anxiety occurring between the ages of 20-29 years old.

Rational Emotive Behavior Therapy (REBT) uses cognitive behavioral therapy approaches to help clients disrupt self-defeating belief systems with cognitive, emotional, and behavioral strategies with the goal of motivating clients to think and behave more productively. (Terlizzi, 2020). REBT believes that it is our thoughts and thought patterns and not the events of our lives that are causing our cognitive, emotional, and behavioral challenges. (Ellis, 2019). REBT has three main techniques: problem-solving techniques, cognitive restructuring techniques, and coping techniques. In addition to these three main techniques, there are many other techniques available to clients to assist them in developing skills. (Dryden, 2019).

According to Manka and Martin (2019) chronotherapy refers to a way of managing sleep/wake cycles and how much light we experience in a day to adjust circadian patterns through natural means only no medications. It has emerged as a therapeutic approach that optimizes treatments by adjusting a patient's sleep-wake cycle to treat mental disorders. It involves adjusting the patient's circadian rhythms, improving time management skills, studying shift work effects on mental health, and understanding procrastination factors. Chronotherapy, including bright light and wake therapy, has shown effectiveness in anxiety treatment (Cardinali et al., 2021).

In Pakistan, studies have been conducted to find the effectiveness of REBT in alleviating the symptoms of psychological distress and social anxiety (Aurooj et al., 2023; Aurooj & Tazvin, 2018). However, there is a need to explore the neurotic quotient of the GAD and devise a therapy plan that not only caters to the psychological, behavioral, and emotional aspects, but also underpins the associated biological symptomology. The current study aims to find the effectiveness of combining the elements of Chronotherapy with Rational Emotive Behavior Therapy on the symptoms of Generalized Anxiety Disorder with the C-REBT (chronotherapy and REBT).

Method

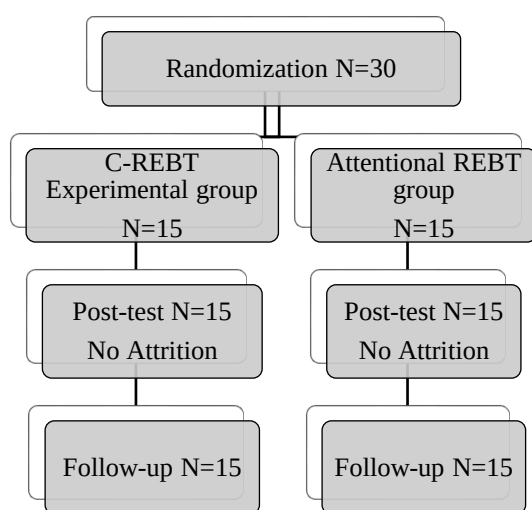


Figure 1: Flow Chart of the Study following CONSORT guidelines

Participants

The participants were selected through purposive sampling technique. The sample population for this research study were businessmen in the car selling business from Swat (northern area of Pakistan). A sample of 30 participants with 15 for attentional REBT group and 15 for the experimental group.

Measures

Demographic questionnaire was used to acquire the information of the participants regarding age, occupation, education, family system etc. An Urdu translated version of Generalized Anxiety Disorder 7-item (Ahmad et al., 2017) was used to assess the presence and severity of GAD symptoms among the participants before and after the application of both interventions' technique.

Procedure

The research involved permission from the Institute review board, Lahore School of Behavioral Sciences at The University of Lahore, and the appropriate authors for the Generalized Anxiety Disorder-7 Item Scale. Participants with generalized anxiety disorder were selected using purposive sampling techniques, and informed consent was obtained. Participants were approved for therapeutic sessions, and psychoeducation about generalized anxiety disorder was conducted. A total of 30 participants were assessed for eligibility from various clinics. The participants were divided into two groups: an attentional control group, which received only REBT, and an experimental group, which received both Chronotherapy and REBT. Randomization was conducted using a computer software to minimize potential biases. Post-test assessment was conducted after the application of pertinent interventions. The results were interpreted in the context of the initial question and hypothesis. Follo-up sessions were conducted one-month after the rumination of the therapy.

Results

Table 1: Frequency and percentage of demographic characteristic of participants (N=30)

Variables	F	%
Age		
31-35 Years old	8	27
36-40 Years old	12	40
41-45 Years old	10	33
Education		
BA	10	33
MS	11	37
BS	9	30
Marital Status		
Single	6	20
Married	21	70
Divorced	3	10
Family System		
Joint	19	63
Nuclear	11	37
Ownership		
Owner	13	43
Rented	4	14

Partnership

13

43

Note. F= Frequency, %=Percentage, M=Mean, SD=Standard Deviation.

Table 1 showed the descriptives of the study. In this study there are only male participants. The participants were divided into two groups of REBT therapy was the control group and C-REBT therapy was the experimental group, both were same population of 50% each. The age categories were divided into 3, in which the age range between the 31-35 years were 27%, 36-40 years were 40% and 41-45 years were 33%. The education category consists of the education the participants have which BA 33%, MS 37%, and BS 30%. Marital status category consists of the participant's marital status who were Single 20%, Married 70% and Divorced 10%. The Family system category was divided into joint family 63% while nuclear family 37%. The ownership category was divided into Owner 43%, renter 14% while Partnership 43%.

Table 2: Comparison of C-REBT Experimental and REBT attentional group

Variables	M	SD	t	p	95% of CI	
					LL	UL
REBT Therapy	6.7	.48	43.86	.00	6.35	7.04
C-REBT Therapy	8.3	.48	54.33	.00	7.95	8.64

Note. GAD7= Generalized Anxiety Disorder-7 REBT= Rational Emotive Behavior Therapy, M= Means, SD= Standard Deviation, N= number of participants, t= difference between the mean, p= Significant, LL= Lower Confidence interval, UL= Upper Confidence interval

Table 2 showed the means, standard deviation, t-value of REBT therapy group and C-REBT therapy group on Pre-test and Post-test of paired sample t-test. A paired sample t-test was conducted to determine the effect of therapy on participant before and after an intervention is applied. The results indicate significant difference REBT therapy M = 6.7, $p < .01$. And C-REBT therapy group M = 8.3, $p < .01$.

Table 3: Pretest and Posttest Comparison

Variables	REBT Therapy (n=15)		C-REBT Therapy (n=15)		t (18)	p	95% of CI		Cohen's d
	M	SD	M	SD			LL	UL	
Pre-Test	11.0	1.49	12.70	.82	3.15	.04	.56	2.83	1.20
Post-Test	4.40	1.41	4.30	.84	1.19	.03	.96	1.19	1.15

Note. GAD7= Generalized Anxiety Disorder-7 REBT= Rational Emotive Behavior Therapy M= Means, SD= Standard Deviation, N= no of participants, t= difference between the mean, p= Significant, LL= Confidence interval Lower, UL= Confidence interval Upper.

Table 3 showed the mean, standard deviation, and t-values of REBT Therapy and C-REBT Therapy on Pre-test and Post-test of independent sample t-test. The results indicate significant mean difference on Pre-test with $t(18) = 3.15$, $p < .05$. The finding shows C-REBT therapy group significantly scored high on Pre-test (M = 12.70, $p < .05$) compared to REBT therapy group (M = 11.0, $p < .05$). The results indicate significant mean difference on Post-test $t(18) = 1.19$, $p < .05$. The finding shows C-REBT therapy group scored high on post-test (M = 4.40, $p < .05$) compared to REBT therapy group (M = 4.30, $p < .05$). According to the results of the study, both REBT and C-REBT therapies were very efficacious in reducing anxiety symptoms as measured on the GAD-7 Scale. However, C-REBT was found to provide greater reductions in anxiety symptoms than REBT when comparing mean scores on the GAD-7 Scale.

Discussion

The findings of this research about how effective Chronotherapy in combination with Rational Emotive Behavior Therapy (REBT) is at reducing anxiety symptoms among men who have been diagnosed with Generalized Anxiety Disorder (GAD). This study was conducted with men in two groups of 15 male participants: A control group of 15 men receiving only REBT Therapy and an experimental group of 15 men receiving C-REBT Therapy (Chronotherapy and REBT combined). The promising findings of this study suggested that C-REBT Therapy (Chronotherapy and REBT combined) provided GAD reduction effects for male participants in both groups. In our analysis, we found statistically significant differences between pre- and post-test scores within groups, indicating both interventions have been effective. This sample possessed a variety of demographic characteristics such as age, educational level, marital status, and socioeconomic level; thus, providing an opportunity to examine the impact on patients from multiple backgrounds. In their investigation regarding how GAD is affected by light therapy and CBT, Bais et al. (2021) utilized CBT and light therapy together; however, their methods of implementation differed. However, both studies used the same general principles of combining both psychological methods and physical interventions when treating patients. Together, each study suggests that multifaceted approaches will have more impact on individuals suffering from anxiety than a single or limited method. Finally, Bogucki et al. (2021), performed a comprehensive meta-analysis of the literature regarding psychotherapy to treat anxiety disorders. They found that CBT, as well as REBT, had the most consistent results in lowering anxiety symptoms among all the therapies studied.

The results of our research coincide with the results of the meta-analysis and support the efficacy of cognitive behavioral interventions for anxiety disorders. The favorable findings for this study have significant implications for clinical practice. Integrating chronotherapy with Rational Emotive Behavior Therapy (REBT) offers a new approach and could provide GAD practitioners with important new tools. In integrating physiological and psychological aspects together, there is the potential for this combined treatment approach to produce more lasting and comprehensive therapeutic effects than traditional approaches. It should be noted that this study is only the first step toward understanding these questions. Longer-term follow-up assessments could be used to investigate how long the symptoms are reduced and measure the durability of the effects observed in this study. Additionally, examining age, sex, and baseline severity of the anxiety condition as potential moderating influences would help to identify why some individuals have different therapy response patterns. The overall combination of the different studies adds to our understanding of treating anxiety disorders and ultimately creates a more extensive therapeutic model for GAD. C-REBT therapy demonstrated slightly greater efficacy than traditional REBT therapy for this purpose.

Limitation and suggestions

There was clearly a limitation of having only male subjects in the study which demonstrates that future studies need to represent a broader scope of gender to ensure that the sample population accurately reflects the general population. The study focused on car retailers businessmen; other cultural values may influence the outcome of the screening test as well. There is an insufficient amount of indigenous research and literature with a small sample size and population from the SWAT and KPK regions. Future studies need to investigate the use of various psychological intervention modalities in the under-represented populations in Pakistan.

Conclusion

This research study on the effectiveness of combining chronotherapy and Rational Emotive Behavior Therapy (REBT) for Generalized Anxiety Disorder shows significant results. Both the REBT therapy group and C-REBT therapy group had a substantial reduction in Generalized Anxiety Disorder symptoms and support other studies showing that cognitive based behavioral interventions (including REBT) relieve anxiety symptoms. The GAD-7 Scale has provided insight into the severity of anxiety symptoms in each therapy group. Further analysis of the GAD-7 Scale data has also provided insight into possible differing levels of anxiety between therapy groups based on differences in the various components of the therapy process and population demographics. These positive results have significant implications for clinical practice; adding the chronotherapy component to REBT provides an innovative approach to potentially producing more extensive and long-term reduction of Generalized Anxiety Disorder symptoms. Nonetheless, more research is needed to determine the long-term effectiveness of the symptom reduction and the relationship between possible moderating variables on patients' response to the various therapies. By combining these results with other studies, we can improve our overall understanding of treating anxiety disorders and developing a more sophisticated treatment model for Generalized Anxiety Disorder. This research study has attempted to open doors to future research that will assist us in improving and optimizing ways to positively impact the welfare of individuals suffering from Generalized Anxiety Disorder.

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