

Comparing the Effectiveness of Emotion Regulation and Logotherapy on the Quality of Life in Adolescents with Anxiety Disorders

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ABSTRACT

Objective: The current investigation was undertaken with the objective of evaluating the comparative efficacy of emotion regulation strategies and logotherapy on the enhancement of quality of life among adolescents diagnosed with anxiety disorders.

Methods: The methodology employed in this study was a semi-experimental design comprising a pre-test and post-test framework, inclusive of a control group. To facilitate data collection, the Quality of Life Questionnaire and the Child and Adolescent Anxiety Disorders Questionnaire were utilized. Furthermore, the emotion regulation intervention was implemented using a structured emotion regulation package derived from the theoretical framework posited by Garnefski and Kraaij alongside a logotherapy package grounded in Frankl's theoretical constructs. Data analysis was executed utilizing SPSS version 22 software at a significance threshold of 0.05, employing mixed covariance analysis.

Results: The findings indicated that the quality of life metrics for the experimental groups exhibited a statistically significant enhancement from pre-test to post-test, with this improvement being sustained during the follow-up evaluation period. Additionally, the outcomes derived from the post hoc analysis revealed that the mean quality of life scores across all paired group comparisons did not demonstrate any statistically significant differences; in other words, no noteworthy distinction was identified between emotion regulation and semantic therapy concerning the quality of life variable.

Conclusions: The results obtained lend credence to the efficacy of emotion-focused therapeutic interventions as well as those employing an existential framework.

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Introduction

Anxiety disorders represent a significant issue during adolescence, resulting in considerable psychological and social repercussions ([Alves et al., 2022](#)). Anxiety constitutes a fundamental human response ([Nasiri Nasab et al., 2023](#)). In the face of stressors or perceived threats, the human brain exhibits a reaction commonly referred to as the "anxiety response" or "anxiety." Such experiences are universal, with individuals encountering them repeatedly throughout their lives and likely to continue experiencing them in the future ([Habibian et al., 2021](#)). Anxiety leads to sensations of insecurity, powerlessness, and both emotional and physiological arousal, all of which adversely influence the quality of life for adolescents experiencing anxiety ([Mohammadi et al., 2023](#)). Quality of life is characterized as a condition that facilitates a fulfilling existence, enabling individuals to engage in daily activities while maintaining a favorable mental, physical, and social condition. Numerous scholars regard quality of life as a multifaceted concept (encompassing social, emotional, cognitive, and physiological dimensions), necessitating the consideration of these various dimensions during evaluation ([Sabouri et al., 2020](#)). The World Health Organization defines quality of life as an individual's subjective assessment of their life circumstances within the framework of the cultural and value systems they inhabit, alongside their goals, standards, and concerns ([Samavi, 2022](#)). Quality of life serves as the most effective criterion and metric for assessing an individual's capacity to adapt successfully to real-world challenges. Evaluations encompass the workplace, domestic settings, and recreational contexts ([Rezaei Mirza et al., 2022](#)). A critical concern pertaining to adolescents with anxiety disorders involves the implementation of interventions aimed at alleviating their psychological distress. The ability of individuals to regulate their emotions is a vital skill that necessitates acquisition. Instruction in emotion regulation techniques can serve as a valuable resource, empowering these adolescents to navigate physical and mental challenges effectively ([Mohamadi Bolbanabad et al., 2024](#); [Vafaei et al., 2021](#)). Emotion regulation is delineated as the process through which emotional experiences are assessed, examined, and either preserved or altered, ultimately fostering adolescents' understanding of when and what emotions to experience, as well as how to express those feelings appropriately ([Clayton et al., 2023](#)). According to the theory of emotional dysregulation, certain patterns of emotional regulation, or their absence, can disrupt individual functioning and contribute to the emergence and persistence of pathological symptoms ([Hughes et al., 2012](#)). Furthermore, emotional

dysregulation manifests when individuals are unable to effectively manage the experience and expression of their emotions ([Taghvaeinia & Zarei, 2022](#)).

Another viable intervention for addressing the psychological challenges faced by adolescents with anxiety disorders is logotherapy, originally established by Viktor Frankl in 1959. The term “logotherapy” derives from the phrase “logos therapy.” This concept signifies the divine will or inherent meaning, and as articulated by Viktor Frankl, logotherapy constitutes a therapeutic approach centered on meaning or psychological healing through meaning ([Batthyány, 2016](#); [Costello, 2015](#)). The primary objective of logotherapy is to facilitate the patient’s discovery of the distinctive meaning inherent in their life, while also delineating the boundaries, capabilities, and freedoms of the patient ([Haghdoost et al., 2021](#)).

Emotion regulation encompasses the implementation of both behavioral and cognitive strategies aimed at managing emotions, particularly in relation to modifying the duration or intensity of emotional experiences that individuals encounter during stressful circumstances. Consequently, it can be posited that emotion regulation entails a repertoire of behavioral and cognitive skills and competencies that influence how individuals recognize, experience, and articulate emotions ([Aldao & Tull, 2015](#)). In light of this characterization, the failure to exhibit appropriate behaviors or flawed cognitive processes may result in ineffective emotional regulation, which manifests in phenomena such as emotional ambiguity and a deficiency in emotional awareness. Consequently, the application of interventions aimed at rectifying these cognitive distortions and behavioral patterns may enhance emotional regulation. Conversely, the concept of meaning in life is frequently construed as a comprehensive construct that encompasses cognitive elements (e.g., self-identity), motivational components (e.g., goal identification and pursuit), and emotional facets (e.g., the sensation of vitality); thus, meaning therapy partially concentrates on rectifying maladaptive cognitions, which include negative, constraining, and detrimental thoughts or attitudes in favor of empowering, affirmative, and proactive perspectives ([Renna et al., 2017](#)). This process of attitudinal transformation serves as a mechanism to facilitate attitude modification and bears resemblance to cognitive restructuring and perceptual alteration techniques that can effectively ameliorate dysfunctional thought patterns and enhance quality of life. Therefore, it can be asserted that an emphasis on attitudinal change in logotherapy is conducive to shifting the focus of clients from their problems or symptoms to the quest for meaning in life, whereby enhancements

in perspective and attitude can engender meaningful changes in individuals ([Didani et al., 2020](#)). In light of the physiological and psychological transformations experienced during this developmental stage, adolescents undergo a myriad of emotional experiences and actively seek meaning and identity formation pertaining to their self-concept. Due to their capacity for abstract reasoning, their cognitive processes also undergo transformations that render this period rife with anxiety and challenges, thereby influencing their overall quality of life. A plethora of studies has documented the beneficial effects of emotion regulation training and meaning therapy across a diverse array of variables among adolescents afflicted with anxiety disorders.

Given the significant prevalence of psychological issues attributable to anxiety disorders in this demographic, it appears imperative to focus on the variables associated with these challenges, to recognize and scrutinize them in greater depth, so that various educational methodologies employed for these adolescents can be systematically compared, thereby identifying the most appropriate and efficacious methods in accordance with the psychological attributes of these individuals. A number of scholarly investigations have explored the efficacy of emotion regulation and logotherapy training interventions concerning the psychological issues faced by adolescents diagnosed with anxiety disorders ([Kang et al., 2009](#); [Mohammadi & Mahmoud Fakhe, 2023](#); [Moltrecht et al., 2021](#); [Nesayan et al., 2017](#)). However, a comparative analysis of these interventions concerning the dependent variables addressed in the current research has not been previously undertaken, revealing significant research deficiencies in this domain that underscore the necessity for further comparative examinations. Consequently, this study was conducted with the objective of evaluating the comparative effectiveness of emotion regulation and logotherapy on the quality of life of adolescents suffering from anxiety disorders.

Material and Methods

The current research framework, taking into account its characteristics and aims, was constructed as a semi-experimental pre-test-post-test design incorporating a control group and a follow-up period of three months. The statistical population for this investigation comprised all students aged 12-14 years from Rah Danesh School, which represents the first secondary educational institution (12-14 years old) in 2023, totaling approximately 225 individuals. For the purposes of this study, a sample size of 175 individuals was selected from the statistical population, and ultimately,

following the elimination of invalid and incomplete questionnaires, 45 students exhibiting anxiety disorders were designated as the sample. These individuals were initially chosen via non-random screening and subsequently allocated randomly into two experimental groups and one control group, each consisting of 15 participants. As per the recommendations of methodological experts, the sample size in an experimental investigation should encompass a minimum of 15 individuals per group. It is noteworthy that the sample size was determined utilizing Cohen's statistical table, with a statistical power of 0.8, an effect size of 0.8, and an alpha significance level of 0.05. Following the collection of data, both descriptive and inferential statistical techniques were employed to analyze the findings derived from this research. In order to ascertain the significant differences among groups concerning the quality of life variable, attributable to the inclusion of a pre-test, the statistical methodologies of variance and covariance analysis were applied. The data analysis was conducted using SPSS version 22 software, adhering to a significance threshold of 0.05.

Instruments

Quality of Life Questionnaire: This instrument was conceptualized by [Kosinski et al. \(1999\)](#). Comprising 12 queries, this quality of life questionnaire represents a condensed version of the more extensive 36-question quality of life questionnaire that is extensively employed across diverse research endeavors. This instrument encompasses 8 distinct subscales. Given the limited number of items, the comprehensive score of the individual is frequently referenced. The current questionnaire evaluates quality of life through the lens of general health perception, physical functioning, physical health, emotional challenges, physical discomfort, social engagement, vitality, and mental well-being. It is comprised of 12 items pertaining to 9 dimensions, categorized into two subscales: physical and mental. The physical subscale comprises: physical functioning, role limitations induced by physical issues, general health perception, and physical pain, whereas the mental subscale encompasses: role limitations stemming from psychological issues, energy and vitality, mental state, and social engagement. The optimal score achievable is +17, while the minimum score is -93. The validity and reliability of the Persian adaptation of this instrument were scrutinized by [Safae and Moghim Dehkordi \(2007\)](#), revealing that the SF-12 questionnaire possesses requisite validity, with a reliability coefficient calculated through Cronbach's alpha reported at 0.92.

Child and Adolescent Anxiety Disorders Questionnaire: This assessment tool was formulated by [Birmaher et al. \(1997\)](#) to evaluate anxiety disorder symptoms in accordance with DSM-IV criteria for children aged 8 to 18, and it encompasses a general anxiety scale along with five subscales (generalized anxiety, separation anxiety, school phobia, and panic disorder/somatic form). The initial iteration of this inventory contained 38 items; however, [Birmaher et al. \(1997\)](#) subsequently incorporated three additional items into its social anxiety subscale. Thus, the contemporary iteration of this assessment tool, which is predominantly utilized in research contexts, comprises 41 items, of which 13 items pertain to the panic/somatic form subscale; 9 items relate to the generalized anxiety subscale, 8 items correspond to the separation anxiety subscale, 7 items are associated with the social anxiety subscale, and 4 items belong to the school phobia subscale ([Monga et al., 2000](#)).

Interventions

Emotion regulation intervention: The emotion regulation intervention is predicated upon the theoretical framework established by [Garnefski and Kraaij \(2007\)](#), and will be conducted over the course of 12 sessions, each lasting 60 minutes, on a weekly basis by a psychologist trained in this domain, at the counseling center affiliated with the Education and Behavior Department in Tehran.

Table 1. Summary of emotion regulation training protocol sessions

Session	Content	Description
1	<ul style="list-style-type: none"> -Conducting a pre-test on the target population -Providing a conceptualization and general description of the training course -Reasons and logic for choosing the topic of the training course -Statement of the rules of the sessions 	Introduction
2	<ul style="list-style-type: none"> -Description of emotion and training in awareness of positive emotions -Types of primary and secondary emotions and the method of influencing the individual -Practical workshop on recognizing primary and secondary emotions and -Individual assignments 	Presenting Homework: Examining Behaviors and Monitoring Primary and Secondary Presentation Emotions and Writing It on a Special Emotion Sheet and Presenting It to the Group
3	<ul style="list-style-type: none"> -Description of emotion regulation -Recognition of behavioral skills and cognitive strategies in regulating emotions -Workshop on recognizing and identifying skills and strategies 	Presenting homework: Identifying your cognitive and behavioral skills and strategies for the week and providing feedback to the group in the next meeting.
4	<ul style="list-style-type: none"> -Workshop on training in overcoming obstacles to healthy emotions -Dealing with negative strategies of self-blame and blaming others 	Homework presentation: Writing down things that the individual has blamed themselves or others for and presenting them to the group in the next meeting.
5	<ul style="list-style-type: none"> -Description of cognitive-social factors in emotional self-regulation 	Homework presentation: Examining behaviors and monitoring emotions based on catastrophizing experienced cases and presenting to the group in the next meeting.

	-Workshop on examining and dealing with the negative cognitive strategy of catastrophizing and its effects	
6	-Training on ways to reduce physical and cognitive vulnerability -Examination of the cognitive strategy of acceptance and its positive and negative dimensions and methods of dealing with its negative dimensions	Homework presentation: Review behaviors and items indicative of the acceptance strategy and its negative aspects throughout the week and provide feedback to the group in the next meeting.
7	-Training Ways to Increase Positive Emotions -Workshop to Examine and Deal with the Negative Strategy of Mental Rumination and Its Effects	Homework assignment: Perform at least one behavior daily to experience positive emotion and use techniques to deal with rumination during the week and provide feedback to the group in the next session.
8	-Training Ways to Increase Positive Emotions -Workshop to Examine and Deal with the Negative Strategy of Mental Rumination and Its Effects	Homework presentation: Reviewing behaviors and monitoring emotions without judgment and paying positive attention to experiences and behaviors again, recording it on a special sheet, and providing feedback to the group in the next meeting.
9	-Training the Skill of Facing Emotions -Acting Contrary to Emotional Tendencies -Reviewing the Cognitive Strategy of Refocusing on Planning and Its Positive Effects	Homework presentation: Practice the skill of acting contrary to emotional urges and replanning and provide feedback to the group in the next session.
10	-Training Problem-Solving Skills -Reviewing the Cognitive Strategy of Positive Reappraisal and Its Positive Effects	Homework presentation: Applying the learned skills, recording a few items, and providing feedback to the group in the next session.
11	-Training Methods to Solve Emotional Problems the Right Way -Reviewing the Positive Cognitive Strategy of Taking a Perspective and Its Positive Effects	Homework presentation: Applying the learned skills and recording the emotional problems solved and the method of solving them and providing feedback to the group in the next meeting.
12	-Presenting Final Recommendations for Continuing the Process of Behavioral and Cognitive Training to Transform It into a Thinking and Living Style	Posttest

Logotherapy Intervention: The implementation of logotherapy intervention, which is grounded in Frankl's theoretical framework, will occur over a sequence of eight sessions, each lasting 60 minutes and conducted on a weekly basis by a psychologist who has undergone professional training in this specialized area, at the counseling center associated with the Ministry of Education in Tehran.

Table 2. Summary of the Protocol for Logotherapy Training Sessions

Session	Aim	Content
1	Explaining the process of the sessions and getting to know the topic of the sessions	At the beginning of the session, the researcher will introduce himself to the subjects and ask them to provide information about themselves. After that, the rules of the sessions, their duties and the researcher's, as well as the goals of the meaning therapy training group sessions will be explained.
2	Setting the groundwork for teaching semantic therapy	The researcher will talk to the subjects about the meaning of life, clarifying the concept of meaning for them and asking them to express their own understanding of meaning. He will then discuss with them various concepts related to meaning, such as free will versus choosing a meaning, will directed towards meaning, and the meaning that exists in each person's life.
3	Explanation and definition of semantic therapy	The researcher will remind the patient that each person's meaning is unique to them and that each person must search for their own personal meaning. Then, the researcher will remind the individual of the sources of finding meaning in life (creative, experiential, attitudinal values) and will mention examples of them in life and will ask the individuals whether they have ever perceived everyday life experiences as a sense of beauty in order to tolerate everyday life and bring diversity into their lives?

4	Introducing the patient to the concept of freedom of choice, responsibility for meaning	The researcher will talk to the individuals about the feeling of being caught in a problem and its relationship with a sense of responsibility. Then, he will emphasize that we humans are responsible for even our smallest feelings.
5	Introducing the individual to existential failure, existential despair	The researcher will describe situations in which there is no meaning and individuals live in meaninglessness. Then, they will be asked to think about whether they have ever encountered this situation? And he will ask them what they have done to resolve it in their lives?
6	Discussion of love	The researcher will present the topic of love in life from the perspective of Frankl and meaning therapy. Then, he will explain to the individuals how to deal with contradictions correctly.
7	Increasing excellence and self-actualization and examining its positive impact on life	Regarding the process of increasing love in life, the researcher will explain self-actualization and examine Frankl's view of self-actualization.
8	End of sessions and general conclusion.	Post-test

Results

The research hypothesis states that there is a difference between the effectiveness of emotion regulation and logotherapy on anxiety in adolescents with anxiety disorders. Descriptive indicators of quality of life, separated by the experimental and control groups, according to the time factor, are given in Table 3.

Table 3. Descriptive indicators of quality of life

Variable	Group	Phase	Mean	SD
Quality of life	Emotion regulation	Pretest	27.2667	5.35146
		Posttest	33.9333	4.35015
		Follow-up	31.2667	4.36654
	Logotherapy	Pretest	28.7333	5.36479
		Posttest	33.2667	3.59497
		Follow-up	30.2667	3.08143
	Control	Pretest	29.7333	5.44409
		Posttest	30.6000	4.59503
		Follow-up	30.4000	4.10226

The findings of Table 3, show the mean and standard deviation of quality of life in the experimental and control groups in the pre-test, post-test and follow-up stages.

Table 4. Comparison of groups within times

Time		Mean difference	Std. error	P	CI 95 %	
					Upper bound	Lower bound
1	2	3.156	.432	.000	2.078	4.233
1	3	.844	.698	.699	-.896	2.585
2	3	-2.311	.389	.000	-3.281	-1.341

The results of the post-test show that the mean of anxiety in the pre-test and post-test has a significant difference ($p < 0.01$). Also, the mean of anxiety in the post-test and follow-up has a significant difference ($p < 0.01$). However, there was no significant difference between the mean of the pre-test and follow-up. In the following, descriptive indicators were obtained and then the results related to the three groups in the dependent variable are presented with the Bonferroni post-test.

Table 5. Between group comparison of groups

Group	Mean	Std. error	CI 95 %	
			Upper bound	Lower bound
Emotion regulation	41.244	2.088	37.031	45.458
Logotherapy	41.822	2.088	37.608	46.036
Control	46.067	2.088	41.853	50.281

As can be seen, there is not much difference between the mean scores of the two experimental groups. However, the mean of the control group differs from the experimental groups by about 5 points. In order to compare these means in different groups, the Bonferroni post hoc test was performed.

Table 6. Bonferroni post hoc test results

Comparison	Mean difference	Std. error	P	CI 95 %	
				Upper bound	Upper bound
Emotion Regulation with logotherapy	-.578	2.953	1.000	-7.941	6.786
Emotion Regulation with Control	-4.822	2.953	.330	-12.186	2.541
Logotherapy with Control	-4.244	2.953	.474	-11.608	3.119

The results of the post hoc test show that the mean anxiety in none of the pairwise group comparisons have a significant difference. In other words, there was no significant difference between emotion regulation and logotherapy in anxiety.

Discussion

The findings indicated that the quality of life metrics for the experimental cohorts exhibited a substantial enhancement from the pre-test phase to the post-test phase, and during the follow-up, this decline, albeit characterized as a downward trajectory, persisted in its increase relative to the pre-test measures. Furthermore, the outcomes from the follow-up assessment elucidated that the mean quality of life across none of the paired group comparisons demonstrated a statistically

significant difference; in other words, no discernible disparity was evident between emotion regulation and semantic therapy concerning the quality of life variable.

The results obtained align with findings from prior investigations within this domain, which are subsequently referenced. In this context, [Gholizadeh and Saadatmand \(2017\)](#), in their study entitled "Investigating the Role of Religious logotherapy in the Context of the Corona Pandemic on Reducing Marital Conflicts in Order to Enhance the Quality of Life in Neurological Patients in Gachsaran City," demonstrated that semantic therapy significantly improved the quality of life while concurrently reducing marital conflicts. [Tofighi et al. \(2018\)](#), in their research titled "Comparing the Effectiveness of Resilience and Emotion Regulation Training on the Quality of Life and Self-Efficacy of Mothers of Children with Cerebral Palsy," revealed that both resilience and emotion regulation training positively influenced the quality of life and self-efficacy of mothers with children suffering from cerebral palsy. [Panayiotou et al. \(2021\)](#), in their research entitled "Investigating the Effect of Emotion Regulation and Awareness on Quality of Life During the Covid-19 Pandemic," established that emotional regulation serves to augment the quality of life for patients. [Raji Lahiji et al. \(2022\)](#), in their study titled "The Effectiveness of Meaning Therapy and Nutrition Counseling on Psychological Status, Quality of Life, and Dietary Intake in Breast Cancer Survivors with Depressive Disorder," demonstrated that meaning therapy led to an enhancement in the quality of life among breast cancer survivors diagnosed with depressive disorder, specifically in a cohort of 30 breast cancer survivors experiencing depression.

In elucidating the efficacy of emotion regulation in the enhancement of quality of life among adolescents afflicted with anxiety disorders, it can be articulated that emotion regulation constitutes a critical component for the establishment of successful interpersonal relationships. Emotion regulation is typically conceptualized as the accessibility to a repertoire of emotion regulation strategies, along with the adaptability in the application of these strategies as necessitated. Emotion regulation fosters adaptive functionality by activating purposeful behaviors and assists individuals in managing their relational dynamics and coping adeptly with interpersonal challenges as they emerge. Emotion regulation encompasses a comprehensive array of cognitive, behavioral, emotional, and physiological responses, and is fundamental for elucidating the emotional and behavioral correlates associated with stress and adverse emotional states. Consequently, emotion regulation not only facilitates cognitive, emotional, and behavioral

transformations within the individual but also confronts negative and maladaptive emotional experiences, supplanting them with affirmative and healthy emotions, mitigating psychological distress, enhancing life satisfaction, and ultimately elevating overall quality of life ([Taghvaeinia & Zarei, 2022](#)).

In elucidating the efficacy of semantic therapy in augmenting the quality of life for adolescents afflicted with anxiety disorders, one may reference a foundational concept inherent in semantic therapy, specifically, the notion of willpower concentrated on meaning. This principal aids individuals in cultivating the capacity to modify their perspectives regarding various life circumstances, particularly in challenging and arduous situations, and encourages the pursuit of discovering and comprehending the authentic significance of their lives. Furthermore, this concept enables individuals to exhibit patience and resilience in the face of life's adversities, recognizing these experiences as integral to the human experience. The logotherapy framework also posits that when individuals are guided to recognize their volitional autonomy, they embrace life's challenges as accountable beings and arrive at the conviction that every misfortune bears intrinsic meaning. By discerning the significance of their individual lives, they acquire a renewed outlook on the tribulations and sufferings inherent to existence. This novel perspective engenders a transformation and enhancement in their psychological flexibility and decision-making capabilities when confronted with conflicts and inconsistencies in life. Therefore, the implementation of logotherapy serves to elevate quality of life by reshaping and broadening individuals' perceptions and attitudes towards themselves and their surrounding environment, elucidating the elements that imbue their present and future lives with significance, thereby equipping them with the capacity to navigate challenging circumstances ([Haghdoost et al., 2021](#)). A principal limitation of the current study lies in the evaluation of research variables through self-report methodologies employing questionnaires, which may lack requisite accuracy owing to the adverse conditions experienced by the students. Ultimately, it is recommended that analogous studies be conducted within various urban locales and diverse cultural contexts involving non-clinical student populations from different regions, thereby facilitating comparative analyses of the resultant findings.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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