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The Effectiveness of Quality-of-Life–Based Skills Training on Rumination in Students with Obsessive–Compulsive Disorder

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ABSTRACT

The present study aimed to examine the effectiveness of quality-of-life–based skills training on rumination in students with obsessive–compulsive disorder (OCD). This study used a quasi-experimental design with a pretest–posttest format and a nonequivalent control group. The sample consisted of 24 students with OCD who were selected through convenience sampling. Participants were assigned to an experimental group (12 participants) and a control group (12 participants). Following the pretest, the experimental group participated in eight 90-minute training sessions, whereas the control group received no intervention. Data were collected using the Ruminative Responses Questionnaire developed by Nolen-Hoeksema and Morrow (1991). Data were analyzed using statistical methods including univariate and multivariate analysis of covariance (ANCOVA). The findings showed that quality-of-life–based skills training had a significant effect on rumination in students with OCD. These results highlight the importance of quality of life in reducing rumination, which is considered one of the most common challenges within individuals' cognitive structures.

Keywords: Quality-of-life–based skills training, rumination, obsessive–compulsive disorder

Introduction

Obsessive-Compulsive Disorder (OCD) is a common and debilitating psychiatric condition that typically onset in adolescence or early adulthood. It is characterized by obsessive thoughts, intrusive mental imagery, and repetitive compulsive behaviors. Epidemiological findings indicate that the prevalence of this disorder in the general population is substantial, chronically impairing individuals' academic, social, and emotional functioning [1]. Diagnostic manuals define OCD as a disorder where obsessions present as recurrent, persistent thoughts, impulses, or mental images that evoke marked anxiety and distress. Compulsions are repetitive behaviors executed to neutralize this distress or prevent a dreaded event; however, these actions are either not realistically connected to the intended outcome or are clearly excessive [2].

The university years represent one of the most sensitive developmental transition periods, frequently accompanied by numerous stressors and psychological challenges that can trigger various mental health disorders. Within this context, OCD, as one of the most disabling anxiety-related conditions, maintains a notable prevalence across academic communities, heavily disrupting students' academic performance, social interactions, and overall quality of life [2]. Epidemiological studies in Iran demonstrate an upward trend in OCD symptoms among the youth, particularly among university and adolescent populations. For instance, a study confirmed a high prevalence of these symptoms alongside extensive comorbidity with other psychological distresses [3]. Given the chronic and eroding trajectory of this disorder, therapeutic interventions and skills that optimize quality of life (such as Frisch's approac) emerge as crucial imperatives for this target population to prevent severe psychosocial decline.

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In explaining the maintenance and exacerbation of OCD symptoms, numerous cognitive-emotional variables have been proposed, among which rumination occupies a prominent role. Rumination is defined as the continuous, repetitive engagement of the mind with a specific topic or thought—a cyclic process that persists independently of environmental demands and rarely culminates in effective problem-solving [4]. According to Nolen-Hoeksema's response styles theory, a ruminative response style consists of a repetitive loop of thoughts and behaviors that focus an individual's attention on the symptoms, causes, and consequences of their negative affect. Consequently, this diminishes the likelihood of engaging in structured problem-solving [5]. Conversely, a distracting response style can divert attention toward neutral, adaptive activities, thereby interrupting the escalation of negative cognitive processing [6]. From this perspective, rumination is not only tied to prolonged psychological distress but may also serve as a core maintaining mechanism within obsessive disorders.

Furthermore, due to academic pressures, developmental responsibilities, and emotional demands, university students with OCD may be more vulnerable than other populations to cyclic loops of repetitive thinking, worrying, and mental preoccupation. Under these circumstances, interventions capable of restructuring cognitive patterns and mental processing styles are highly valuable. One such approach is quality-of-life skills training. Quality of life is a multidimensional construct encompassing personal interests, experiences, feelings, viewpoints, and beliefs regarding the psychological, social, cultural, spiritual, and financial dimensions of life [7]. Grounded in Frisch's paradigm, Quality of Life Therapy (QOLT) operates as a positive cognitive intervention. It targets life satisfaction, value reappraisal, attitudinal shifts, and the modification of rigid personal standards, effectively reducing negative affect and maladaptive cognitive processing [8,9].

As a maladaptive, negative self-focused coping style, rumination plays a pivotal role in maintaining and intensifying anxiety and obsessive symptoms [4]. Within student-centered research, evidence indicates that a ruminative thinking style is robustly linked to diminished mental health and lowered life satisfaction [10]. Additionally, Nofresti, Parhoon, and Momeni, observed that students with high levels of rumination exhibit more rigid cognitive inflexibility and poorer problem-solving styles when confronting academic and personal challenges [11]. Domestic research has further highlighted the predictive and mediating dynamics of this construct; Behzadpour, Motahhari, and Sohrabi demonstrated that rumination can be significantly predicted based on social and emotional adjustment profiles in patients with OCD [12]. Collectively, these findings validate that interventions targeting the reduction of mental rumination and the enhancement of quality-of-life skills can serve as vital psychological buffers against distress in university students [13,14].

Theoretically, this approach can alleviate deep cognitive preoccupation by redirecting an individual's attention away from the exhausting, repetitive cycles of rumination toward a holistic reappraisal of core life domains. Empirically, research demonstrates that quality-of-life interventions across various clinical and non-clinical cohorts, including visually impaired individuals, dialysis patients, and individuals with chronic somatic conditions, yield positive improvements in life expectancy, self-efficacy, and psychological well-being [15-17]. Nonetheless, the specific efficacy of this paradigm on rumination patterns among university students with OCD has received limited empirical attention.

Moreover, empirical evidence reveals a significant relationship between early maladaptive schemas and mental rumination, emphasizing the importance of addressing foundational cognitive structures in this population [18]. Given that existing treatments and training protocols aimed at mitigating rumination and dysfunctional beliefs have not always yielded entirely satisfactory clinical outcomes, investigating alternative or complementary interventions is highly warranted. Consequently, the primary objective of this study was to determine whether quality-of-life skills training can effectively reduce rumination in university students suffering from OCD.

Method

The present study utilized a quasi-experimental pretest-posttest control group design. The statistical population comprised all university students diagnosed with Obsessive-Compulsive Disorder (OCD) in the city of Mashhad during the 2021–2022 academic year. The sample consisted of 24 eligible students selected via convenience sampling.

Following formal administrative approvals and university recommendations, the researcher visited psychological counseling centers and private clinics across Mashhad. Once students with an official OCD diagnosis were identified and met the entry criteria, they were randomly assigned to either the experimental group (n = 12) or the control group (n = 12). Inclusion criteria required a formal diagnosis of OCD by a certified professional, active enrollment status in a university program, and informed written consent to participate in the training sessions.

Instruments

Ruminative Responses Scale (RRS): Developed by Nolen-Hoeksema and Morrow [5], this 22-item instrument measures ruminative responses on a 4-point Likert scale ranging from 1 (never) to 4 (always). Higher scores reflect elevated levels of rumination.

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Prior studies have reported a Cronbach's alpha coefficient for this scale ranging from 0.88 to 0.92, demonstrating high reliability.

Following sample selection and pretest assessments for both groups, the Quality of Life (QOL) skills training protocol based on Frisch's model was introduced to the experimental group [8]. The intervention consisted of eight 90-minute group sessions held weekly at a psychological clinic. Session content prioritized core areas such as needs recognition, goal-setting, problem-solving, and boosting satisfaction across distinct life areas. Meanwhile, the control group received no training and remained on a waiting list. Upon completion of the intervention, a posttest was administered to both groups.

Intervention Protocol Summary

Session 1: Introduction and Structuring

Core Focus & Objectives: Establishing therapeutic rapport, outlining group boundaries, and defining program objectives. Introducing basic concepts of quality of life, satisfaction, and happiness. Discussing the role of rumination and maladaptive schemas in OCD manifestations. Providing initial feedback.

Session 2: Conceptualization of Therapy

Core Focus & Objectives: Professionally defining Quality of Life Therapy (QOLT) and introducing the 16 distinct dimensions of life quality. Mapping and analyzing the "Tree of Life" to isolate problem areas for participants. Summarizing core themes and assigning homework.

Session 3: Introduction of the CASIO Model (Part1)

Core Focus & Objectives: Reviewing homework. Explaining the CASIO framework as the five pillars of satisfaction. Focusing on Strategy 1: Circumstances. Teaching methods to modify or adapt to objective life conditions to enhance quality of life.

Session 4: Introduction of the CASIO Model (Part2)

Core Focus & Objectives: Reviewing homework and navigating roadblocks. Deliberating on Strategy 2: Attitude. Training participants to restructure interpretations of events to counter cognitive biases and early maladaptive schemas.

Session 5: Completion of the CASIO Model

Core Focus & Objectives: Reviewing homework. Reviewing the final three strategies: Standards, Importance (Priorities), and Other Fields (Overall Satisfaction) to recalibrate personal metrics and optimize overall life satisfaction.

Session 6: Integration with Clinical Variables

Core Focus & Objectives: Presenting foundational pillars of quality of life. Demonstrating the practical application of these pillars in regulating and diminishing rumination, as well as mitigating distress driven by early maladaptive schemas during anxiety-inducing states.

Session 7: Focus on Interpersonal Relationships

Core Focus & Objectives: Reviewing homework assignments. Conducting an in-depth clinical discussion on social and emotional relationships. Teaching the application of the five CASIO strategies to cultivate interpersonal interactions and reduce obsessive symptoms.

Session 8: Synthesis and Generalization

Core Focus & Objectives: Comprehensive synthesis of preceding sessions. Delivering final summaries. Instruction on generalizing the CASIO matrix across all future life challenges. Posttest administration and closing remarks.

Ethical Considerations and Data Analysis

To comply with ethical mandates, participants were guaranteed complete data confidentiality. Following the study's completion, an accelerated version of the training program was conducted for the control group. Collected data were analyzed using descriptive statistics (means and standard deviations). To evaluate the research hypotheses and assess the efficacy of the intervention while controlling for pretest effects, a multivariate analysis of covariance (MANCOVA) was executed. All analyses were processed using SPSS Version 22, with statistical significance set at 0.05 alpha

Results

Demographic indices showed that 8 participants held an associate degree and were undergraduate students, 12 held a bachelor's degree and were pursuing their master's degree, and 4 held a master's degree and were active doctoral students (Table 1). The highest age frequency was observed within the 25–35 age range (n = 10, 41.66). Additionally, 8 participants (33.33%) fell under the age of 25, while 6 participants (25%) were over 35 years old.

Table 1. Descriptive Statistics of Research Variables

Variables / Components	Phase	Exp Group Mean	Exp Group SD	Control Group Mean	Control Group SD
Ruminative Style	Pretest	23.41	3.704	24.08	7.267
	Posttest	18.08	4.273	24.16	7.120
Distracting Style	Pretest	17.83	4.302	18.16	4.529
	Posttest	13.00	3.219	17.67	2.964
Rumination (Total Score)	Pretest	41.25	5.690	42.25	11.828
	Posttest	31.08	7.316	41.83	8.408

To test the primary hypothesis, it must first be demonstrated that changes in the rumination scores of students with OCD were directly caused by the QOL skills training. Utilizing pretest scores as a baseline covariate through an analysis of covariance (ANCOVA) is essential for this purpose. The results are detailed in Table 2. The ANCOVA table indicates that since the significance value for the covariate (pretest) is 0.001, which is well below 0.05 ($p < 0.05$), the baseline observations share a statistically significant relationship with the dependent variable (posttest observations), establishing the validity of this covariance analysis model (Table 2).

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Table 2. Summary of Univariate Analysis of Covariance (ANCOVA) for Total Rumination

Source of Variation	Sum of Squares	df	Mean Square	F	P-value	Partial
Intercept	151.525	1	151.525	4.033	0.058	0.161
Pretest	577.599	1	577.599	15.374	0.001	0.423
Group	619.259	1	619.259	16.482	0.001	0.440
Error	788.984	21	37.571			
Total	2059.958	23				

Looking at the intervention group row, the significance value corresponding to group differences is 0.001 ($p < 0.05$). Consequently, given that the adjusted posttest means for total rumination in the experimental and control groups were 31.370 and 41.547 respectively, the null hypothesis is confidently rejected. The primary hypothesis—stating that "Quality-of-Life skills training exerts a significant effect on reducing rumination in university students diagnosed with obsessive-compulsive disorder"—is accepted at a 95% confidence level. Overall, total rumination scores in the experimental group fell significantly below those of the control group during posttest evaluation. The adjusted means are provided below (Table 3).

Table 3. Adjusted Means and 95% Confidence Intervals for Total Rumination

Group	Adjusted Mean	Standard Error	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Control	41.547	1.771	37.864	45.229
Exp	31.370	1.771	27.687	35.053

Taking the descriptive metrics into consideration, Table 3 verifies that the mean rumination index within the experimental group diminished post-intervention. To further look at the impact of QOL training across the distinct subscales of rumination, a multivariate analysis of covariance (MANCOVA) was conducted (Table 4).
The data confirm that quality-of-life skills training demonstrates statistically significant effectiveness across both subscales of rumination.

Table 4. Summary of MANCOVA for Rumination Subscales

Source	Dependent Variable	Sum of Squares	df	Mean Square	F	P	η2
Pretest	Ruminative Style	197.067	1	197.067	14.514	0.001	0.421
	Distracting Style	48.639	1	48.639	3.582	0.043	0.152
Group	Ruminative Style	183.643	1	183.643	13.525	0.001	0.403
	Distracting Style	127.723	1	127.723	12.425	0.002	0.383
Error	Ruminative Style	271.550	20	13.578			
	Distracting Style	205.593	20	10.280			

Discussion

The purpose of this study was to determine the effectiveness of quality-of-life skills training on rumination and early maladaptive schemas among university students with obsessive-compulsive disorder. This investigation employed a quasi-experimental non-equivalent control group pretest-posttest design. The sample comprised 24 students selected via convenience sampling and distributed into an experimental group ($n = 12$) and a control group ($n = 12$). Following pretest measures, the experimental group completed 8 sessions of 90-minute QOL training while the control group received no active intervention. Data collection relied on the Ruminative Responses Scale [5] and the Young Schema Questionnaire [19]. Statistical evaluation via univariate and multivariate analysis of covariance verified that quality-of-life training significantly altered both rumination trajectories and early maladaptive schemas within this sample. These results indicate that quality-of-life intervention strategies successfully mitigate rumination patterns in university students struggling with OCD.

These findings correspond with and support previous findings [20-25].To theoretically explain these dynamics through Nolen-Hoeksema's response styles model, it can be argued that individuals experiencing OCD often present with compromised focal concentration and analytical capabilities [5]. As executive control degrades, self-worth declines, leading individuals to internalize self-perceptions of worthlessness or unlovability. Such individuals overwhelmingly fixate on negative details and experience major impairments in structured, adaptive problem-solving.

This impairment hinders social collaboration, peer interactions, and hobbies requiring sustained cognitive focus. Because OCD patients experience severe, recurring loops of rumination centered around specific themes, these intrusive thoughts break into conscious awareness involuntarily.

This mechanism continuously diverts executive attention away from goal-directed behaviors and undermines interpersonal connection. Quality of Life Therapy (QOLT) helps patients approach life with a positive perspective, encouraging them to view challenges constructively and reframe life events positively. A compromised baseline quality of life often feeds cognitive distortions, leading individuals to employ maladaptive coping strategies that elevate psychological tension. This heightened tension directly correlates with increased symptom severity.

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By elevating overall life quality across multidimensional domains, QOLT disrupts this cycle, systematically lowering cognitive distortions and reducing the chronic burden of rumination.

In conclusion, the findings of this study demonstrate that Quality-of-Life (QOL) skills training is an effective intervention for significantly reducing both total rumination and its specific subscales (ruminative and distracting response styles) among university students diagnosed with obsessive-compulsive disorder (OCD). By shifting individuals' cognitive focus away from the rigid, distressing, and repetitive cycles of obsessive thought patterns toward a holistic, structured reappraisal of multidimensional life domains through the CASIO framework, the intervention successfully interrupts the maintaining mechanisms of the disorder. Ultimately, these results underscore the vital clinical utility of positive psychological and life-satisfaction paradigms as alternative or complementary protocols to traditional treatments, offering a robust buffer that addresses foundational cognitive vulnerabilities and enhances overall psychological well-being in academic populations.

Several limitations should be taken into account when interpreting these results, which in turn provide valuable pathways for future investigation. First, the utilization of a small sample size (n = 24) and a convenience sampling method restricted to the city of Mashhad limits the generalizability of the findings to the broader population of university students or diverse clinical settings. Second, the study relied heavily on self-report measures like the Ruminative Responses Scale, which may introduce subjective reporting biases or social desirability effects. Furthermore, the lack of a long-term follow-up period restricts our understanding of the durability and sustainability of the treatment effects over time. Based on these limitations, it is suggested that future researchers replicate this design using larger, multi-center sample sizes and randomized probability sampling to ensure greater external validity. Incorporating objective clinical interviews or implicit cognitive tests alongside self-report inventories would strengthen data triangulation. Finally, longitudinal designs with 3-month, 6-month, or 12-month follow-up assessments are highly recommended to evaluate the permanent efficacy of the CASIO matrix in preventing relapse and managing chronic rumination.

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