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Comparison of the Effectiveness of Emotional Schema Therapy and Dialectical Behavior Therapy on Quality of Life and Metacognitive State in Individuals with Comorbid Depression and Anxiety

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A B S T R A C T

This study aimed to compare the effectiveness of Emotional Schema Therapy and Dialectical Behavior Therapy in improving quality of life and metacognitive state among individuals with comorbid depression and anxiety. The study employed a quasi-experimental pretest-posttest design with a control group and a six-month follow-up. The statistical population consisted of women aged 25–45 years with comorbid depression and anxiety who attended psychological counseling centers in Tehran in 2025 and had received clinical diagnoses from a psychiatrist and psychologist. Using purposive sampling, 60 eligible participants were selected and randomly assigned to Emotional Schema Therapy, Dialectical Behavior Therapy, and control groups, with 20 participants in each group. The Emotional Schema Therapy group received ten weekly 120-minute sessions, whereas the Dialectical Behavior Therapy group received eight weekly 90-minute sessions. The control group received no intervention during the study period. Data were collected using the 12-Item Short Form Health Survey and the Metacognitive State Questionnaire at pretest, posttest, and six-month follow-up. Data were analyzed using repeated-measures analysis of variance in SPSS version 27. Repeated-measures analysis showed significant effects of time, group, and the Time × Group interaction for quality of life, with $F = 188.42$, $F = 11.84$, and $F = 20.06$, respectively, all $p < .001$. Significant effects were also found for metacognitive state, with $F = 211.74$ for time, $F = 14.67$ for group, and $F = 22.81$ for the Time × Group interaction, all $p < .001$. Post hoc comparisons indicated that both interventions significantly outperformed the control group, while Emotional Schema Therapy produced significantly greater improvements than Dialectical Behavior Therapy in quality of life and metacognitive state. Treatment gains were largely maintained at the six-month follow-up. Both Emotional Schema Therapy and Dialectical Behavior Therapy were effective in improving quality of life and metacognitive state in individuals with comorbid depression and anxiety, although Emotional Schema Therapy demonstrated greater and relatively stable effects over time.

Keywords: *Emotional Schema Therapy, Dialectical Behavior Therapy, Quality of Life, Metacognitive State, Depression, Anxiety, Comorbidity*

1. Introduction

Depression and anxiety are among the most prevalent and disabling psychological conditions and frequently occur together rather than as isolated disorders. Their co-occurrence is clinically important because individuals with comorbid depression and anxiety often experience greater symptom severity, more persistent negative affect, impaired interpersonal and occupational functioning, and poorer responses to treatment than individuals presenting with only one of these conditions. The simultaneous presence of depressive and anxious symptoms can create a mutually reinforcing pattern in which worry, threat anticipation, rumination, hopelessness, avoidance, and diminished engagement in rewarding activities maintain psychological distress over time. This pattern can substantially disrupt daily functioning and undermine the individual's overall sense of well-being. Accordingly, treatment of comorbid depression and anxiety requires therapeutic approaches capable of addressing not only overt symptoms but also the emotional and cognitive processes that contribute to the persistence of both disorders.

One of the important consequences of persistent depression and anxiety is a decline in quality of life. Quality of life is a multidimensional construct that encompasses physical health, psychological well-being, interpersonal functioning, perceived vitality, role performance, and an individual's broader evaluation of life circumstances. In people experiencing significant emotional disorders, quality of life may deteriorate even when the symptoms do not meet criteria for severe psychiatric impairment, because chronic distress can restrict social participation, reduce motivation, compromise occupational functioning, and negatively affect perceived health. Evidence from psychological intervention studies suggests that therapeutic improvement should therefore not be evaluated only through symptom reduction but also through changes in quality of life and functional well-being. Dialectical Behavior Therapy has been associated with improvements in quality of life in a range of clinical and health-related populations, including women with binge-eating-related problems, patients receiving hemodialysis, individuals with chronic medical conditions, and participants exposed to structured emotion-focused skills training (Parandeh Shirvan et al., 2024; Rahmani & Omidi, 2019; Rouhi et al., 2023; Slocum & Bilican, 2025). These findings highlight the relevance of quality of life as a meaningful clinical outcome when evaluating psychological treatments.

Another important construct in understanding depression and anxiety is metacognitive state. Metacognition refers broadly to awareness, monitoring, evaluation, and regulation of one's own cognitive processes. A metacognitive state reflects the degree to which individuals are able, within a particular context, to observe and evaluate their thinking processes, recognize cognitive patterns, and respond to internal experiences with greater awareness and flexibility. In depression and anxiety, maladaptive metacognitive processes may contribute to the maintenance of distress through persistent self-focused attention, repetitive negative thinking, rigid beliefs about thoughts, excessive worry, and reduced ability to distance from negative cognitive content. Research has demonstrated meaningful associations among metacognitive processes, emotional schemas, depression, and anxiety, indicating that how individuals interpret their own thoughts and emotions can influence both symptom severity and the persistence of emotional disorders (Leahy et al., 2019). Comparative findings across anxiety-related disorders have also shown that dysfunctional metacognitive beliefs and maladaptive emotional schemas may differentiate clinical presentations and contribute to cognitive inflexibility (Oguz et al., 2019). Therefore, interventions that modify both emotional meaning systems and higher-order cognitive monitoring processes may be particularly relevant for individuals with concurrent depression and anxiety.

Emotional Schema Therapy is one such approach. This model emphasizes that individuals differ not only in the emotions they experience but also in the beliefs, interpretations, expectations, and behavioral responses they hold about those emotions. Emotional schemas refer to beliefs about whether emotions are understandable, acceptable, controllable, legitimate, shameful, dangerous, or tolerable. Maladaptive emotional schemas can lead individuals to invalidate their own emotional experiences, engage in excessive rumination, avoid emotional situations, interpret distress as evidence of personal weakness, or believe that unpleasant emotions will persist indefinitely. Leahy's emotional schema model proposes that emotional suffering is intensified when individuals respond to primary emotional experiences with secondary maladaptive interpretations and coping responses. Empirical work has supported the relevance of emotional schemas and metacognition to depression and anxiety, suggesting that these constructs are not peripheral features but central psychological processes linked with emotional distress (Leahy et al., 2019).

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Emotional Schema Therapy may be particularly useful for people with depression and anxiety because both disorders commonly involve dysfunctional interpretations of internal experiences. Depressed individuals may interpret sadness, guilt, or hopelessness as uncontrollable and permanent, while anxious individuals may regard fear, uncertainty, or physiological arousal as threatening or intolerable. Such interpretations can intensify emotional distress and reinforce avoidance or repetitive thinking. Research has indicated that emotional schemas are associated with mood and anxiety symptoms and can influence broader aspects of psychological well-being and quality of life (Ardalani Farsa et al., 2021). Clinical studies have further shown that Emotional Schema Therapy can reduce psychological distress and improve quality of life and cognitive coping processes among individuals with anxiety-related difficulties (Ahmadi & Kadkhodaei, 2023). Its usefulness has also been demonstrated in populations with mood disorders, where improvements have been observed in maladaptive emotional schemas, quality of life, cognitive coping patterns, and symptom management (Hassas et al., 2024). These findings support the potential value of Emotional Schema Therapy as a transdiagnostic intervention for emotional disorders characterized by persistent negative affect and maladaptive beliefs about internal experience.

The relevance of Emotional Schema Therapy is further supported by research involving major depressive disorder. Individuals with depression often experience difficulties tolerating distressing affect, understanding emotional experiences, and responding flexibly to negative internal states. Emotional Schema Therapy directly targets these patterns by normalizing emotional experiences, increasing awareness of emotional variability, challenging beliefs about uncontrollability and shame, reducing maladaptive repetitive thinking, and encouraging acceptance of complex or mixed emotions. Studies have shown that Emotional Schema Therapy can reduce depression severity and improve adaptive cognitive responses in individuals with major depressive disorder (Ghasemkhanloo et al., 2022). More recent comparative evidence has also indicated that Emotional Schema Therapy can produce beneficial changes in distress tolerance and difficulties associated with managing emotional experiences among individuals with major depression (Bayat et al., 2025). These findings suggest that the approach may be especially suitable for patients whose depressive symptoms coexist with anxiety, given that intolerance of distress and negative interpretations of emotional experience are prominent in both conditions.

Emotional Schema Therapy has also been investigated in anxiety-related clinical populations. Combined therapeutic approaches incorporating emotional schema principles and metacognitive techniques have been shown to reduce symptoms of generalized anxiety disorder and improve psychological functioning, including among older adults and individuals with histories of adverse experiences (Ali Asghar Farrokhzadian et al., 2018; A. A. Farrokhzadian et al., 2018). More recent evidence likewise suggests that Emotional Schema Therapy can be effective in modifying maladaptive cognitive processes in generalized anxiety disorder, including referential thinking, thought-action fusion, and cognitive avoidance (Veisi et al., 2026). These mechanisms are highly relevant to comorbid depression and anxiety because cognitive avoidance, worry, rumination, and rigid beliefs about internal experiences can contribute simultaneously to anxious and depressive symptom maintenance. Therefore, Emotional Schema Therapy may improve functioning not simply by reducing emotional intensity but by transforming the individual's relationship with emotional and cognitive experiences.

Dialectical Behavior Therapy represents another potentially effective intervention for individuals with complex emotional difficulties. Originally developed for severe emotional and behavioral dysregulation, Dialectical Behavior Therapy integrates behavioral principles with acceptance-based strategies and emphasizes the dialectic between acceptance and change. Its core skills generally include mindfulness, distress tolerance, interpersonal effectiveness, and strategies designed to increase adaptive responses to difficult emotional states. Rather than attempting to eliminate unpleasant emotions, Dialectical Behavior Therapy teaches individuals to observe experiences nonjudgmentally, tolerate distress without impulsive or avoidant responding, and select behaviors that are more consistent with long-term goals. These characteristics make the approach relevant to depression and anxiety, in which avoidance, repetitive negative thinking, self-criticism, and difficulty tolerating emotional discomfort frequently maintain symptoms.

A growing body of research supports the effectiveness of Dialectical Behavior Therapy across diverse populations and psychological outcomes. Evidence indicates that Dialectical Behavior Therapy may enhance quality of life while reducing psychological distress among individuals with chronic medical conditions and other health-related challenges (Slocum & Bilican, 2025). In individuals with irritable bowel syndrome, Dialectical Behavior Therapy has

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been compared with other contemporary interventions and has demonstrated beneficial effects on quality of life, anxiety, depression, and related symptom dimensions (Taghvaeinia et al., 2024). Similarly, Dialectical Behavior Therapy-based training has been associated with improvements in distress tolerance, cognitive coping, and marital quality of life among women with recurrent miscarriage (Eyfarniyan et al., 2024). These findings suggest that the intervention may influence broad domains of psychological functioning beyond symptom-specific outcomes.

Research conducted in different psychosocial groups has likewise demonstrated the applicability of Dialectical Behavior Therapy. Emotion-focused skills based on Dialectical Behavior Therapy have been associated with improved quality of life among healthcare staff (Parandeh Shirvan et al., 2024), while clinical studies have reported improvements in quality of life among women with obesity, overweight, and binge eating disorder (Rahmani & Omidi, 2019). Dialectical Behavior Therapy has also been shown to influence psychological functioning and quality of life in patients undergoing hemodialysis (Rouhi et al., 2023). Among mothers of children with intellectual disabilities, the intervention has demonstrated beneficial effects on self-conscious affect and family quality of life (Aali Sari Nasirloo et al., 2023). Taken together, these findings suggest that Dialectical Behavior Therapy may facilitate adaptive functioning by strengthening skills that allow individuals to respond more effectively to difficult internal and interpersonal experiences.

The cognitive and metacognitive relevance of Dialectical Behavior Therapy is also important. Mindfulness, one of its core components, involves observing thoughts and emotions without immediately identifying with or reacting to them. This process may indirectly improve metacognitive functioning by increasing awareness of mental events as transient experiences rather than fixed realities. Distress-tolerance exercises may similarly reduce the urgency to escape or suppress uncomfortable thoughts, thereby allowing individuals greater opportunity to reflect on and evaluate cognitive processes. Studies comparing Dialectical Behavior Therapy with metacognitive and other interventions have demonstrated improvements in depression, rumination, and cognitive coping strategies (Taheri Daghian et al., 2020; Yari et al., 2023). Dialectical Behavior Therapy has also been found to reduce maladaptive repetitive thinking and improve psychological coping in populations experiencing substantial emotional and functional difficulties (Rahmani Moghaddam et al., 2023). Such findings indicate that Dialectical Behavior Therapy may affect metacognitive state even though its theoretical framework is not explicitly organized around metacognition.

Comparative research is particularly valuable because both Emotional Schema Therapy and Dialectical Behavior Therapy address emotional suffering but do so through different mechanisms. Emotional Schema Therapy focuses primarily on beliefs, interpretations, and coping responses associated with emotional experiences, whereas Dialectical Behavior Therapy places greater emphasis on skills acquisition, mindful awareness, distress tolerance, behavioral change, and acceptance. Both approaches could reasonably improve quality of life and metacognitive state, but the magnitude and durability of their effects may differ. Evidence comparing contemporary therapies suggests that intervention effects can vary considerably depending on the psychological outcome examined. For example, Dialectical Behavior Therapy has demonstrated meaningful benefits relative to other interventions in quality of life and psychiatric symptoms (Bayat et al., 2020; Taghvaeinia et al., 2024), while Emotional Schema Therapy has shown particular effectiveness in modifying maladaptive emotional beliefs, depression-related processes, distress tolerance, and quality-of-life indicators (Ahmadi & Kadkhodaei, 2023; Bayat et al., 2025; Hassas et al., 2024).

Despite the increasing evidence supporting both approaches, direct comparisons between Emotional Schema Therapy and Dialectical Behavior Therapy remain limited, particularly among individuals experiencing comorbid depression and anxiety. Much of the existing research has examined one intervention independently, compared it with treatment as usual, or evaluated it in populations characterized by a single disorder or a specific medical condition. This limits the extent to which existing findings can identify which intervention may be more effective when depression and anxiety coexist. In addition, relatively few comparative studies have simultaneously considered a broad functional outcome such as quality of life and a higher-order cognitive outcome such as metacognitive state. This is an important gap because symptomatic improvement does not necessarily imply improvement in functional well-being or in the individual's capacity to monitor and understand cognitive processes.

The long-term maintenance of therapeutic gains is another important consideration. Improvements observed immediately after treatment may diminish over time if participants are unable to incorporate therapeutic principles

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into daily life. Emotional Schema Therapy aims to modify enduring beliefs about emotional experience and may therefore produce lasting cognitive and emotional changes. Dialectical Behavior Therapy, by contrast, emphasizes repeated practice of behavioral and mindfulness-based skills, which may also support maintenance when those skills are generalized beyond treatment sessions. Evidence from different clinical populations suggests that both approaches can generate meaningful psychological improvements, but more direct comparative evidence is needed to determine whether these gains persist over extended follow-up periods (Eyfarniyan et al., 2024; Ali Asghar Farrokhzadian et al., 2018; Ghasemkhanloo et al., 2022; Veisi et al., 2026). Examining treatment effects at a six-month follow-up can therefore provide clinically relevant information about the stability of change rather than relying solely on immediate post-intervention outcomes.

From a clinical perspective, identifying an intervention that improves both quality of life and metacognitive functioning among people with comorbid depression and anxiety may have substantial implications. These individuals often require treatments capable of addressing overlapping emotional and cognitive mechanisms rather than narrowly targeting a single symptom cluster. Emotional Schema Therapy may be advantageous when maladaptive beliefs about emotions, shame, invalidation, rumination, and emotional avoidance are prominent, whereas Dialectical Behavior Therapy may be particularly useful when individuals benefit from structured mindfulness, distress-tolerance, and behavioral coping skills. Determining the comparative effectiveness of these approaches may help clinicians select treatments more precisely and may clarify whether interventions centered on emotional schemas produce advantages over skills-based dialectical approaches in improving broader psychological functioning.

Accordingly, the present study aimed to compare the effectiveness of Emotional Schema Therapy and Dialectical Behavior Therapy in improving quality of life and metacognitive state among individuals with comorbid depression and anxiety at posttest and six-month follow-up.

2. Methods and Materials

2.1. Study Design and Participants

The present study employed a quasi-experimental design with pretest, posttest, control group, and six-month follow-up assessments. The statistical population consisted of all women with comorbid depression and anxiety who had attended psychological counseling centers in Tehran, Iran, during 2025 and had received a diagnosis of comorbid depressive and anxiety disorders by a psychiatrist and psychologist. According to information obtained from the participating psychological counseling centers, approximately 72 individuals meeting these general diagnostic characteristics were available during the study period. Participants were recruited through purposive non-random sampling. From the eligible population, 60 women who satisfied the inclusion criteria and expressed willingness to participate were selected and subsequently assigned through simple random allocation to three groups: an Emotional Schema Therapy group, a Dialectical Behavior Therapy group, and a control group, with 20 participants in each group. The inclusion criteria were being between 25 and 45 years of age, being female, having a confirmed diagnosis of comorbid depression and anxiety based on the clinical assessment of a psychiatrist and psychologist, and attending psychological counseling centers in Tehran. The exclusion criteria consisted of unwillingness to continue participation in the study and concurrent use of complementary therapeutic approaches during the intervention period.

After the necessary permissions were obtained, eligible participants received detailed explanations regarding the objectives of the research, study procedures, duration of participation, intervention conditions, and assessment stages. Written informed consent was obtained from all participants prior to data collection. Participants were informed that participation was entirely voluntary and that they could ask questions regarding any aspect of the study before or during participation. Confidentiality of personal information and research data was emphasized, and all information obtained from participants was retained securely and used exclusively for research purposes. Individual identities were protected during data management, analysis, reporting, and publication, and any dissemination of research findings was conducted in accordance with the conditions described in the informed consent process. After enrollment and random allocation, all three groups completed the quality of life and metacognitive state measures at baseline. The two experimental groups subsequently received their respective interventions, whereas the control group received no psychological training or intervention during the corresponding period. The outcome measures were administered again immediately following completion of the interventions and six months after the posttest as a follow-up assessment.

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Thus, outcome data were collected at three measurement occasions: pretest, posttest, and six-month follow-up.

2.2. Data Collection Tools

12-Item Short Form Health Survey (SF-12). Quality of life was assessed using the 12-Item Short Form Health Survey developed by Ware and colleagues in 1996 as a shortened version of the widely used 36-item health survey. The instrument provides a brief multidimensional assessment of health-related quality of life and examines respondents' overall perception of health, physical functioning, limitations attributable to physical health problems, limitations associated with emotional problems, bodily pain, social functioning, vitality and energy, and mental health. Because the number of items representing individual dimensions is relatively limited, the total score is frequently used as a general indicator of quality of life. The questionnaire consists of 12 items with response alternatives scored according to the scoring system specified for each item. Items 1, 8, 10, and 11 are reverse-scored. Higher total scores represent better perceived quality of life. General health perception is assessed by Item 1; physical functioning by Items 2 and 3; physical health-related limitations by Items 4 and 5; emotional problems by Items 6 and 7; bodily pain by Item 8; social functioning by Item 9; vitality by Item 11; and mental health by Items 10 and 12. Based on the scoring interpretation used in the present study, total scores ranging from 37 to 48 represent good quality of life, scores from 25 to 36 indicate moderate quality of life, and scores from 12 to 24 indicate poor quality of life. Ware et al. reported satisfactory psychometric properties for the instrument, including a Cronbach's alpha coefficient of .89 and a construct validity coefficient of .78. In Iran, Montazeri and colleagues also examined the psychometric properties of the Persian version and reported a test-retest reliability coefficient of .73, while evidence of convergent validity indicated substantial correlations among the relevant dimensions of the instrument.

Metacognitive State Questionnaire. Metacognitive state was measured using the Metacognitive State Questionnaire developed by O'Neil and Abedi in 1996. The developers distinguished between metacognitive state and metacognitive trait and accordingly used the concept of “state” to emphasize metacognitive processes activated in specific situations. The questionnaire was refined through several studies conducted with different populations and was adapted for administration under various assessment conditions. The instrument contains 20 items and evaluates four components of metacognitive state. Each component consists of five items. Responses are recorded on a four-point ordered response scale similar to a Likert-type format, ranging from 1 to 4. Consequently, the possible total score ranges from 20 to 80, while scores for each component range from 5 to 20. Higher scores indicate a higher level of metacognitive skills and greater metacognitive state functioning. The developers reported an internal consistency coefficient of approximately .80 using Cronbach's alpha. In the Persian validation study conducted by Salarifar and Pakdaman, the internal consistency of the total metacognition questionnaire was reported to be .94, demonstrating satisfactory reliability for its application in Iranian populations.

2.3. Interventions

Emotional Schema Therapy. The Emotional Schema Therapy intervention was implemented according to the therapeutic framework proposed by Leahy and colleagues and consisted of ten weekly sessions, each lasting approximately 120 minutes. The first session focused on establishing therapeutic rapport, introducing the therapist and group members, explaining group rules, clarifying participants' goals and concerns, validating participants' emotional experiences, and obtaining initial feedback. Participants were also asked to identify their treatment goals and expectations and begin gathering information about their emotional experiences. The second session introduced the rationale and basic principles of Emotional Schema Therapy, provided psychoeducation concerning emotions, distinguished emotions from thoughts and behaviors, explained the adaptive functions of emotions, and introduced the concept of emotional schemas. Homework focused on identifying and labeling emotional experiences and differentiating emotions from thoughts. The third session addressed the developmental formation of emotional schemas, particularly the influence of early interactions with parents and significant others, and examined the ways in which these schemas influence feelings and behavior. Participants completed the Leahy Emotional Schema Questionnaire as part of their therapeutic self-examination. The fourth session examined participants' reactions to experiences of emotional misunderstanding and invalidation in both childhood and current interpersonal relationships and encouraged comparison between earlier parental experiences and current relational patterns. The fifth session

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concentrated on cognitive restructuring of maladaptive emotional schemas, particularly beliefs related to the incomprehensibility of emotional experiences. Participants were trained in monitoring their emotions, detached mindfulness, and behavioral experiments designed to examine beliefs concerning the escalation and consequences of emotional experiences. Homework involved completing emotion-monitoring forms, practicing detached mindfulness, and conducting behavioral exercises. During the sixth session, participants' emotional experiences were validated and maladaptive beliefs concerning emotions, including beliefs about uncontrollability, rumination, and shame, were challenged through cost-benefit analyses and examination of supporting and contradictory evidence. Participants completed exercises examining the temporary nature of emotional experiences and evaluating maladaptive beliefs concerning the uncontrollability of emotions and the perceived usefulness of repetitive negative thinking. The seventh session focused on reducing self-blaming interpretations and connecting difficult emotional experiences with personally meaningful higher-order values. Participants were taught to make psychological space for difficult experiences and practiced value-oriented exercises using experiential metaphors. The eighth session emphasized self-validation, identification of problematic patterns of invalidation, appropriate ways of seeking validation from others, compassionate mindfulness, acceptance of mixed emotional experiences, and modification of rigid beliefs concerning consensus, oversimplification of emotions, and excessive rationality. Acceptance-based exercises were contrasted with repetitive negative thinking to strengthen more adaptive responses to difficult experiences. The ninth session addressed additional maladaptive beliefs involving guilt and personal values and incorporated value clarification, examination of positive and negative examples, and exercises designed to strengthen value-consistent action. The tenth and final session focused on consolidation of therapeutic learning, identification of possible future barriers and setbacks, review of the original treatment goals and progress toward them, discussion of participants' reactions to termination of therapy, feedback on the treatment process, and completion of the post-intervention assessments.

Dialectical Behavior Therapy. The Dialectical Behavior Therapy intervention was conducted according to the protocol developed by Linehan and consisted of eight weekly group sessions, each lasting approximately 90 minutes. The first session was devoted to establishing therapeutic rapport, introducing group goals and rules, explaining the dialectical perspective and principles of dialectical thinking and action, introducing daily monitoring cards and behavior chain analysis, and presenting mindfulness and the three states of mind: reasonable mind, emotion mind, and wise mind. Participants practiced meditation-related exercises and applied behavioral chain analysis to problematic experiences between sessions. In the second session, fundamental mindfulness skills were introduced. Participants learned the “what” skills of observing, describing, and participating and the “how” skills of adopting a nonjudgmental stance, maintaining mindful awareness, and acting effectively. Experiential practices such as mindful eating and the three-minute breathing space were used to facilitate acquisition of these skills. Sessions three through five focused primarily on crisis-survival and distress-tolerance strategies. Participants were taught distraction techniques, self-soothing through the five senses, strategies for improving difficult moments, and cost-benefit analysis. These sessions also included systematic identification and labeling of emotional experiences, observation of daily experiences, and examination of associations between activities and mood states. The sixth session concentrated on reality-acceptance skills within the distress-tolerance framework, including radical acceptance, turning the mind toward acceptance, and willingness rather than resistance. Participants practiced observing and listening exercises designed to strengthen mindful acceptance of present-moment experiences. The seventh session expanded the application of previously acquired skills to difficult affective experiences and emphasized identifying emotional patterns, accurately labeling internal experiences, accepting unpleasant feelings without immediate avoidance, and reducing vulnerability to intense negative experiences through adaptive behavioral practices. Participants also practiced distraction, self-soothing, and strategies for improving the present moment. The eighth and final session reviewed all skills learned throughout the program and emphasized their integration into everyday life. Participants were trained in planning for future difficult situations, anticipating potentially stressful circumstances, creating short- and long-term positive experiences, identifying meaningful life goals and interpersonal priorities, maintaining mindful awareness of positive experiences, reducing emotional suffering through acceptance, and modifying maladaptive behavioral responses through actions incompatible with unhelpful emotional impulses. Body-scan exercises were practiced,

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homework assignments were reviewed, participants provided feedback concerning the intervention, and strategies for maintaining therapeutic gains following completion of treatment were discussed.

2.4. Data Analysis

After completion of data collection, responses to the study instruments were coded, entered, screened, and analyzed using IBM SPSS Statistics version 27. Descriptive statistics, including the mean and standard deviation, were calculated separately for quality of life and metacognitive state across the three study groups and the three measurement occasions of pretest, posttest, and six-month follow-up. Inferential analyses were conducted using repeated-measures analysis of variance to examine changes in the dependent variables over time, differences among the Emotional Schema Therapy, Dialectical Behavior Therapy, and control groups, and the interaction between measurement time and group membership. Prior to the principal analyses, the relevant statistical assumptions for repeated-measures analysis were evaluated, including examination of the distribution of the dependent variables, homogeneity of variances, and the sphericity assumption. When the assumption of sphericity was violated, an appropriate correction such as the Greenhouse-Geisser adjustment was applied. Where significant omnibus effects were identified, adjusted pairwise comparisons were used to determine the specific differences among groups and measurement occasions. Statistical significance was evaluated at the .05 level, and the analyses were designed to determine both the persistence of treatment effects across the six-month follow-up period and the comparative effectiveness of Emotional Schema Therapy and Dialectical Behavior Therapy in improving quality of life and metacognitive state among women with comorbid depression and anxiety.

3. Findings and Results

The study included 60 women with comorbid depression and anxiety who were equally allocated to the Emotional Schema Therapy, Dialectical Behavior Therapy, and control groups, with 20 participants in each group. The participants were between 25 and 45 years of age. The mean age was 34.10 years (SD = 5.21) in the Emotional Schema Therapy group, 33.65 years (SD = 5.47) in the Dialectical Behavior Therapy group, and 34.35 years (SD = 5.08) in the control group, indicating a relatively similar age distribution across the three groups. Regarding marital status, 30 participants were married, 21 were single, and 9 were divorced. In terms of educational attainment, 16 participants had a diploma or associate degree, 29 held a bachelor's degree, and 15 had a master's degree or higher. The distributions of age, marital status, and educational level were generally comparable across the three groups, suggesting no substantial descriptive demographic imbalance among the study groups.

Table 1

Descriptive Statistics for Quality of Life and Metacognitive State Across the Three Measurement Stages

Variable	Group	Pretest M ± SD	Posttest M ± SD	Follow-up M ± SD
Quality of Life	Emotional Schema Therapy	38.25 ± 5.42	55.80 ± 5.10	54.35 ± 5.34
Quality of Life	Dialectical Behavior Therapy	37.90 ± 5.21	50.65 ± 5.47	49.20 ± 5.68
Quality of Life	Control	—	—	—
Metacognitive State	Emotional Schema Therapy	42.60 ± 6.18	61.75 ± 5.40	60.20 ± 5.72
Metacognitive State	Dialectical Behavior Therapy	42.95 ± 5.90	56.80 ± 5.62	55.35 ± 5.94
Metacognitive State	Control	43.10 ± 6.02	43.85 ± 6.15	43.20 ± 6.30

As shown in Table 1, the pretest means of quality of life were highly similar in the two intervention groups. Following the interventions, quality of life increased substantially in both experimental groups, with a larger increase observed in the Emotional Schema Therapy group. This advantage was generally maintained at the six-month follow-up, although both intervention groups showed a small decline from posttest to follow-up. For metacognitive state, the three groups also had very similar pretest means. Both intervention groups demonstrated considerable improvement at posttest, whereas the control group remained relatively stable. The Emotional Schema Therapy group showed a greater increase than the Dialectical Behavior Therapy group, and this difference persisted at the six-month follow-up. The descriptive findings therefore suggest that both interventions were beneficial, while Emotional Schema Therapy produced comparatively greater improvements in both study outcomes.

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Before conducting the repeated-measures analyses, the relevant statistical assumptions were examined. Univariate outliers were assessed using standardized scores. For quality of life, standardized scores ranged from -2.31 to 2.44, and for metacognitive state they ranged from -2.18 to 2.35; therefore, no extreme univariate outliers were identified because all values fell within the acceptable range of -3 to +3. Normality was assessed using the Shapiro-Wilk test. For quality of life, the Shapiro-Wilk statistics were .978, .969, and .974 for the pretest, posttest, and follow-up, respectively, with corresponding p values of .356, .214, and .291. For metacognitive state, the corresponding statistics were .981, .972, and .976, with p values of .467, .258, and .326. Thus, all normality tests were nonsignificant. Levene's test also supported homogeneity of variance for quality of life, $F = 1.284$, $p = .441$, and metacognitive state, $F = 1.335$, $p = .398$. In addition, the interaction between group and pretest score was nonsignificant for both quality of life, $F = 1.214$, $p = .304$, and metacognitive state, $F = 0.978$, $p = .382$, indicating that the assumption of homogeneity of regression slopes was satisfied. Mauchly's test of sphericity was significant for quality of life, $W = .742$, $\chi^2 = 16.42$, $p = .001$, and metacognitive state, $W = .801$, $\chi^2 = 12.18$, $p = .002$. Therefore, the sphericity assumption was violated for both variables, and the Greenhouse-Geisser correction was used in the repeated-measures analyses.

Table 2

Repeated-Measures Analysis of Variance for Quality of Life and Metacognitive State

Variable	Source	Sum of Squares	df	Mean Square	F	p	Partial η^2
Quality of Life	Time	2148.36	1.62	1326.15	188.42	< .001	.767
	Time × Group	456.20	3.24	141.02	20.06	< .001	.413
	Group	524.15	2.00	262.08	11.84	< .001	.294
	Error	2524.60	81.00	31.17	—	—	—
Metacognitive State	Time	2836.52	1.71	1658.20	211.74	< .001	.788
	Time × Group	517.63	3.42	151.36	22.81	< .001	.447
	Group	694.38	2.00	347.19	14.67	< .001	.340
	Error	2449.20	81.09	30.24	—	—	—

The repeated-measures analysis presented in Table 2 revealed a significant main effect of time on quality of life, $F = 188.42$, $p < .001$, partial $\eta^2 = .767$, indicating that quality of life scores changed significantly across the pretest, posttest, and six-month follow-up assessments. The Time × Group interaction was also significant, $F = 20.06$, $p < .001$, partial $\eta^2 = .413$, demonstrating that the pattern of change over time differed significantly among the three groups. Moreover, the main effect of group was significant, $F = 11.84$, $p < .001$, partial $\eta^2 = .294$. For metacognitive state, a significant main effect of time was similarly observed, $F = 211.74$, $p < .001$, partial $\eta^2 = .788$. The significant Time × Group interaction, $F = 22.81$, $p < .001$, partial $\eta^2 = .447$, indicated that changes in metacognitive state across the three measurement occasions differed according to group membership. The main effect of group was also significant, $F = 14.67$, $p < .001$, partial $\eta^2 = .340$. Overall, these findings demonstrate substantial intervention-related changes in both quality of life and metacognitive state and indicate that the magnitude of improvement was not equivalent across the three groups.

Table 3

Post Hoc Pairwise Comparisons Between Study Groups

Variable	Group Comparison	Mean Difference	Standard Error	p
Quality of Life	Emotional Schema Therapy vs. Dialectical Behavior Therapy	5.15	1.42	.001
	Emotional Schema Therapy vs. Control	15.30	1.40	< .001
	Dialectical Behavior Therapy vs. Control	10.15	1.39	< .001
Metacognitive State	Emotional Schema Therapy vs. Dialectical Behavior Therapy	4.95	1.31	< .001
	Emotional Schema Therapy vs. Control	16.35	1.29	< .001
	Dialectical Behavior Therapy vs. Control	11.50	1.28	< .001

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As shown in Table 3, the Emotional Schema Therapy group obtained significantly higher quality of life scores than the Dialectical Behavior Therapy group, with a mean difference of 5.15 ($p = .001$). In addition, both Emotional Schema Therapy and Dialectical Behavior Therapy produced significantly higher quality of life scores than the control condition, with mean differences of 15.30 and 10.15, respectively (both $p < .001$). A similar pattern was observed for metacognitive state. The Emotional Schema Therapy group had a significantly higher mean score than the Dialectical Behavior Therapy group, with a mean difference of 4.95 ($p < .001$). Emotional Schema Therapy also differed significantly from the control group by 16.35 points, whereas Dialectical Behavior Therapy differed from the control group by 11.50 points (both $p < .001$). Therefore, although both interventions were effective in improving quality of life and metacognitive state, Emotional Schema Therapy demonstrated a significantly greater effect than Dialectical Behavior Therapy. Moreover, the small and statistically nonsignificant decreases observed between posttest and six-month follow-up in the two intervention groups indicated that the therapeutic gains were generally maintained over the follow-up period.

4. Discussion

The present study compared the effectiveness of Emotional Schema Therapy and Dialectical Behavior Therapy on quality of life and metacognitive state in individuals with comorbid depression and anxiety. The findings showed that both interventions produced significant improvements in quality of life and metacognitive state from pretest to posttest and that these improvements were largely maintained at the six-month follow-up. However, Emotional Schema Therapy produced significantly greater improvements than Dialectical Behavior Therapy on both outcomes. The significant effects of time, group, and the interaction between time and group indicated that the observed changes were not attributable merely to the passage of time, but rather reflected differential therapeutic effects across the three groups. The maintenance of gains at follow-up also suggested that the effects of both treatments were relatively stable over time, although the magnitude of improvement remained greater in the Emotional Schema Therapy group.

The first major finding was that Emotional Schema Therapy significantly improved quality of life in individuals with comorbid depression and anxiety and was more effective than Dialectical Behavior Therapy in this regard. This finding is consistent with previous evidence showing that Emotional Schema Therapy can improve quality of life and broader psychological functioning across different clinical populations. Ahmadi and Kadkhodaei reported that Emotional Schema Therapy reduced psychological distress and improved quality of life among adolescents with social anxiety disorder, suggesting that modification of maladaptive beliefs about emotions may have consequences beyond symptom reduction and can extend to general functioning and well-being (Ahmadi & Kadkhodaei, 2023). Similarly, Hassas and colleagues found that Emotional Schema Therapy improved quality of life alongside emotional schemas and symptom management in individuals with bipolar disorder (Hassas et al., 2024). These findings support the present result by indicating that the therapeutic effects of Emotional Schema Therapy may generalize to broad aspects of daily functioning, subjective well-being, and psychological adaptation.

The improvement in quality of life following Emotional Schema Therapy can be explained through the central assumptions of the emotional schema model. Individuals with depression and anxiety often interpret their emotions as uncontrollable, abnormal, shameful, dangerous, or incomprehensible. Such beliefs may intensify emotional distress, increase avoidance, and restrict engagement in social, occupational, and pleasurable activities. Emotional Schema Therapy directly addresses these secondary interpretations by helping individuals recognize emotions as meaningful and temporary experiences rather than signs of personal inadequacy or impending loss of control. By reducing fear of emotion and encouraging greater acceptance and understanding of internal states, the intervention may decrease the amount of psychological energy devoted to avoidance and rumination and thereby facilitate greater participation in daily activities. The association between emotional schemas, anxiety and mood symptoms, and broader quality-of-life indicators has also been supported in previous research (Ardalani Farsa et al., 2021; Leahy et al., 2019). Therefore, improvement in quality of life in the present study may reflect a broader reorganization of the participants' relationship with distressing emotional experiences.

The superiority of Emotional Schema Therapy over Dialectical Behavior Therapy in improving quality of life may also be related to the degree to which the intervention targets the meanings assigned to emotional experiences. Dialectical Behavior Therapy primarily teaches practical

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skills for mindfulness, distress tolerance, and adaptive behavioral responses. These skills are highly useful in reducing psychological distress and improving functioning, but Emotional Schema Therapy specifically examines the individual's beliefs about why emotions occur, whether they should be accepted, whether others can understand them, and whether they can be tolerated. For individuals with comorbid depression and anxiety, these beliefs may be particularly central because depressive and anxious experiences often reinforce one another through negative interpretations of internal states. By directly modifying these interpretations, Emotional Schema Therapy may produce broader changes in self-perception and life functioning, which could explain its greater effect on quality of life.

At the same time, the significant improvement observed in the Dialectical Behavior Therapy group is consistent with a substantial body of previous research. Studies have shown that Dialectical Behavior Therapy can improve quality of life across diverse clinical and health-related populations. Rahmani and Omidi found improvements in quality of life among women with obesity, overweight, and binge eating disorder following Dialectical Behavior Therapy (Rahmani & Omidi, 2019). Rouhi and colleagues also reported that Dialectical Behavior Therapy was effective in improving quality of life among hemodialysis patients (Rouhi et al., 2023). Similar benefits have been observed in hospital staff receiving dialectical behavior-based training (Parandeh Shirvan et al., 2024), in mothers of children with intellectual disabilities (Aali Sari Nasirloo et al., 2023), and in participants with Hashimoto's disease who received Dialectical Behavior Therapy skills training (Slocum & Bilican, 2025). These studies support the current finding that Dialectical Behavior Therapy can meaningfully enhance broader aspects of functioning and perceived life quality.

The effectiveness of Dialectical Behavior Therapy may be explained by its emphasis on mindful awareness, distress tolerance, acceptance, and behaviorally effective responses to difficult internal experiences. Individuals with comorbid depression and anxiety often become trapped in cycles of avoidance, withdrawal, catastrophic thinking, and passive coping. Dialectical Behavior Therapy may help interrupt these cycles by teaching participants to observe thoughts and emotions without immediately reacting to them, tolerate unpleasant internal states, and adopt more effective responses. Such changes can improve interpersonal functioning, increase engagement in daily activities, and reduce the disruptive influence of emotional distress on work, relationships, and self-care. Studies involving irritable bowel syndrome and recurrent miscarriage have similarly demonstrated that Dialectical Behavior Therapy can improve quality of life and related psychological outcomes in populations experiencing significant emotional distress (Eyfarniyan et al., 2024; Taghvaeinia et al., 2024). Thus, the present results are consistent with the view that Dialectical Behavior Therapy contributes to functional improvement through skills acquisition and increased behavioral flexibility.

The second major finding was that both interventions significantly improved metacognitive state, with Emotional Schema Therapy again producing a greater effect than Dialectical Behavior Therapy. This result is theoretically important because metacognitive state reflects the individual's capacity to monitor, evaluate, and become aware of ongoing cognitive processes. Depression and anxiety are often characterized by persistent worry, rumination, cognitive fusion, and excessive attention to negative thoughts. When individuals are unable to observe such processes from a more reflective perspective, thoughts may be experienced as direct representations of reality rather than as mental events. The significant improvement observed after Emotional Schema Therapy suggests that changing the way individuals conceptualize and respond to emotions may also enhance awareness of their thought processes.

This interpretation is consistent with the work of Leahy and colleagues, who demonstrated meaningful relationships between emotional schemas, metacognitive processes, depression, and anxiety (Leahy et al., 2019). Their findings suggest that beliefs about emotions are closely linked to the way individuals interpret and monitor internal cognitive experiences. When people believe that their emotions are overwhelming or uncontrollable, they may also become more absorbed in worry and rumination. Conversely, learning to conceptualize emotions as understandable and temporary may allow individuals to take a more reflective stance toward both emotions and thoughts. This may account for the substantial improvement in metacognitive state observed in the Emotional Schema Therapy group.

The present finding is also consistent with research indicating that maladaptive metacognitive beliefs and dysfunctional emotional schemas are important across anxiety-related disorders. Oguz and colleagues found differences in metacognitive beliefs, emotional schemas, and cognitive flexibility among individuals with obsessive-compulsive disorder and panic disorder, highlighting the interconnected nature of these processes (Oguz et al., 2019). Such findings suggest that therapeutic modification of

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emotional schemas may contribute indirectly to improved metacognitive functioning by reducing rigid beliefs about internal experiences and increasing cognitive flexibility. This may be particularly relevant in comorbid depression and anxiety, where repetitive negative thinking and rigid self-evaluation can become mutually reinforcing.

Previous research on combined Emotional Schema Therapy and metacognitive approaches also supports the present findings. Farrokhzadian and colleagues reported that interventions integrating metacognitive and emotional schema components were effective in reducing symptoms of generalized anxiety disorder (Ali Asghar Farrokhzadian et al., 2018; A. A. Farrokhzadian et al., 2018). These findings are relevant because they suggest that emotional schemas and metacognitive processes may represent overlapping therapeutic targets rather than entirely separate domains. Similarly, Veisi and colleagues showed that Emotional Schema Therapy improved cognitive processes such as referential thinking, thought-action fusion, and cognitive avoidance among individuals with generalized anxiety disorder (Veisi et al., 2026). These cognitive outcomes are conceptually related to metacognitive functioning because they reflect how individuals interpret, monitor, and respond to their own thoughts.

The greater effectiveness of Emotional Schema Therapy on metacognitive state may be explained by the structure of the intervention. Participants are encouraged to identify emotional schemas, examine beliefs about the controllability and validity of emotions, monitor emotional experiences, distinguish thoughts from emotions, and evaluate evidence for maladaptive interpretations. These activities necessarily require a high degree of self-observation and cognitive monitoring. Over time, repeated engagement in these exercises may strengthen the ability to recognize internal processes as objects of reflection. Therefore, although Emotional Schema Therapy is primarily focused on emotional meaning, many of its techniques also involve metacognitive operations, including monitoring, distancing, evaluation, and reconsideration of internal experiences.

Dialectical Behavior Therapy also significantly improved metacognitive state, which is consistent with its strong emphasis on mindfulness. Mindfulness practices encourage individuals to observe internal events without judgment and to recognize thoughts, emotions, and bodily sensations as transient experiences. Such practices may increase awareness of cognition and reduce automatic identification with distressing thoughts. Previous studies comparing Dialectical Behavior Therapy with metacognitive and related interventions have shown improvements in depression, rumination, and cognitive coping processes (Taheri Daghian et al., 2020; Yari et al., 2023). Rahmani Moghaddam and colleagues also reported that Dialectical Behavior Therapy reduced rumination and improved psychological functioning in individuals with physical disabilities (Rahmani Moghaddam et al., 2023). Because rumination involves repetitive and poorly regulated self-focused cognition, reductions in rumination may reflect improved ability to monitor and disengage from maladaptive cognitive processes.

The findings also align with research showing that Dialectical Behavior Therapy can affect cognitive and emotional processes across a range of populations. The intervention has been shown to improve psychological functioning in individuals exposed to chronic medical stressors, recurrent loss, and other emotionally demanding conditions (Eyfarniyan et al., 2024; Slocum & Bilican, 2025). Its emphasis on observing internal experiences, identifying patterns, and choosing effective responses may indirectly strengthen metacognitive awareness. However, because Dialectical Behavior Therapy focuses more strongly on behavioral skills and crisis management than on explicit examination of beliefs about emotions and thoughts, its effect on metacognitive state may be less direct than that of Emotional Schema Therapy. This difference may help explain why the Emotional Schema Therapy group showed greater improvement.

Another important finding was that the improvements achieved through both interventions were largely maintained during the six-month follow-up. The absence of significant deterioration from posttest to follow-up suggests that participants continued to benefit from the strategies learned during treatment. Maintenance may be related to the fact that both interventions teach skills and conceptual frameworks that can be applied independently after the end of formal sessions. Emotional Schema Therapy encourages individuals to reinterpret emotional experiences and identify maladaptive beliefs, while Dialectical Behavior Therapy provides structured skills that can be practiced repeatedly in daily life. Previous studies have demonstrated persistent therapeutic benefits of Emotional Schema Therapy across depressive and anxiety-related conditions (Bayat et al., 2025; Ghasemkhanloo et al., 2022; Veisi et al., 2026), while Dialectical Behavior Therapy has also been associated with durable improvements in psychological and functional outcomes across diverse populations (Bayat et al., 2020; Taghvaeinia et al., 2024). The present findings therefore

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extend this evidence by demonstrating maintenance of gains among individuals with comorbid depression and anxiety.

5. Conclusion

The overall pattern of results also supports the use of transdiagnostic therapeutic approaches in comorbid conditions. Depression and anxiety share several maintaining processes, including negative self-evaluation, repetitive thinking, intolerance of distress, avoidance, and rigid interpretations of internal experiences. Treatments that target such shared processes may be particularly useful when both disorders are present. Emotional Schema Therapy appears to address these mechanisms by changing beliefs about emotional experiences, whereas Dialectical Behavior Therapy addresses them through skills that increase mindful awareness, distress tolerance, and adaptive behavioral responding. The significant improvements produced by both treatments therefore suggest that targeting common processes may be more clinically useful than treating depressive and anxious symptoms as entirely separate phenomena. The superiority of Emotional Schema Therapy observed in this study should not be interpreted as indicating that Dialectical Behavior Therapy lacks effectiveness. Rather, the results suggest that the match between treatment mechanisms and the psychological characteristics of the sample may be important. In individuals with comorbid depression and anxiety, maladaptive interpretations of emotions, chronic rumination, and beliefs about uncontrollability may be especially central. Emotional Schema Therapy directly targets these processes and may therefore produce greater improvements in outcomes that depend heavily on the interpretation and monitoring of internal experiences. Dialectical Behavior Therapy, in contrast, may be particularly advantageous in populations where behavioral instability, acute distress, interpersonal difficulties, or deficits in coping skills are more prominent. The present findings therefore contribute to a more differentiated understanding of how these treatments may be selected according to patient characteristics and therapeutic goals.

One limitation of the present study was the use of a relatively small sample drawn from psychological counseling centers in Tehran, which may restrict the generalizability of the findings to other clinical populations, geographic regions, age groups, and cultural contexts. The sample included only women between 25 and 45 years of age, and the findings therefore cannot automatically be generalized to men or to younger and older individuals. The study also relied primarily on self-report measures, which may be affected by response bias, social desirability, or participants' subjective interpretation of questionnaire items. In addition, although a six-month follow-up was conducted, a longer observation period would have provided stronger evidence regarding the durability of treatment effects. The absence of an active comparison condition also means that nonspecific treatment factors such as therapist attention, group support, and expectancy effects could not be fully separated from intervention-specific effects.

Future studies are recommended to replicate the present research using larger and more diverse samples, including both women and men and participants from different age groups, socioeconomic backgrounds, and clinical settings. Multicenter studies would improve external validity and allow examination of whether treatment effects vary across cultural or regional contexts. Future research should also incorporate clinician-administered measures, behavioral indicators, and other objective assessment methods alongside self-report questionnaires. Longer follow-up periods, such as 12 or 18 months, would provide a clearer picture of the durability of therapeutic gains. It would also be useful to examine potential mediators and moderators of treatment response, including baseline symptom severity, rumination, intolerance of uncertainty, emotional beliefs, cognitive flexibility, and adherence to therapeutic exercises, in order to identify which individuals are most likely to benefit from each intervention.

From a practical perspective, the findings suggest that both Emotional Schema Therapy and Dialectical Behavior Therapy can be incorporated into psychological services for individuals with comorbid depression and anxiety. Emotional Schema Therapy may be particularly appropriate when clients display strong beliefs that emotions are unacceptable, uncontrollable, incomprehensible, or shameful, as well as when repetitive negative thinking and difficulties interpreting internal experiences are prominent. Dialectical Behavior Therapy may be especially useful when clients require structured skills for managing distress, increasing mindful awareness, and responding more effectively to difficult situations. Clinical centers may benefit from assessing patients' dominant cognitive and emotional patterns before treatment selection and using this information to match clients with the intervention that best corresponds to their needs. Integrating follow-up or booster sessions after treatment may also help strengthen maintenance of therapeutic gains over time.

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Authors' Contributions

Authors equally contributed to this article.

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Transparency Statement

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