

The Effectiveness of Cognitive Behavioral Therapy on Rumination and Psychological Distress Among Individuals Attending Counseling Centers

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ABSTRACT

The present study aimed to determine the effectiveness of cognitive behavioral therapy (CBT) in reducing rumination and psychological distress among individuals attending counseling centers. This study employed a quasi-experimental method with a pretest–posttest design involving an experimental group and a control group. The statistical population consisted of individuals attending counseling centers in Tehran during 2025–2026. Using convenience sampling, 30 participants were selected and subsequently assigned randomly to the experimental group (n = 15) and the control group (n = 15). Data were collected using the Rumination Questionnaire and the Psychological Distress Questionnaire. The experimental group then received eight 120-minute sessions of cognitive behavioral therapy. Following completion of the CBT sessions, posttests were administered to both the experimental and control groups. The findings indicated that the mean scores of rumination and psychological distress in the experimental group differed significantly at posttest compared with pretest. Therefore, cognitive behavioral therapy was effective in reducing rumination and psychological distress among individuals attending counseling centers.

Keywords: cognitive behavioral therapy, rumination, psychological distress.

1. Introduction

Psychological distress is a broad and clinically important construct encompassing unpleasant emotional states such as anxiety, depressive symptoms, irritability, tension, helplessness, and difficulties in psychological adjustment. Although psychological distress does not necessarily indicate the presence of a specific psychiatric disorder, persistent and elevated distress may substantially impair emotional functioning, interpersonal relationships, occupational performance, decision-making, and quality of life. Individuals who seek assistance from counseling centers commonly present with a mixture of emotional, cognitive, behavioral, and interpersonal problems rather than a single isolated symptom. For this reason, psychological distress is particularly relevant in counseling settings, where clients may experience concurrent symptoms of anxiety, low mood, maladaptive thinking, impaired coping, and reduced tolerance of negative affect. Recent evidence indicates that cognitive and behavioral interventions can be particularly useful for reducing distress across diverse clinical and nonclinical populations, highlighting the importance of identifying modifiable psychological processes that contribute to the persistence of distress (Graboyes et al., 2025; Mala et al., 2026; Tamuno-Opubo et al., 2025). Among these processes, rumination has increasingly been recognized as a central mechanism through which negative emotional states may be maintained and intensified.

Rumination refers to a repetitive and relatively passive pattern of thinking in which individuals continuously focus on the causes, meanings, consequences, and subjective experience of distress without engaging in effective problem solving. Unlike purposeful reflection, which may lead to clarification or adaptive action, maladaptive rumination is characterized by repetitive self-focused attention that often provides little new information and may prolong emotional discomfort. Individuals who ruminate tend to repeatedly revisit past events, perceived failures, interpersonal conflicts, negative self-evaluations, and distressing emotional experiences. This persistent cognitive recycling can narrow attention, interfere with behavioral engagement, reinforce negative interpretations, and reduce psychological flexibility. Consequently, rumination has been implicated in the onset, maintenance, and recurrence of various forms of emotional disturbance, particularly depression and anxiety. Contemporary research has increasingly conceptualized rumination as part of the broader construct of repetitive

negative thinking, a transdiagnostic process that cuts across diagnostic categories and includes closely related phenomena such as worry and perseverative cognition (Querstret & Cropley, 2025; Stenzel et al., 2025).

The transdiagnostic importance of rumination is particularly significant because individuals seeking psychological services frequently display overlapping symptoms rather than neatly separated diagnostic syndromes. Repetitive negative thinking can become a shared cognitive pathway through which diverse stressors are translated into prolonged psychological distress. When an individual repeatedly analyzes why an adverse event occurred, what it means about the self, and what negative consequences may follow, the original stressor can remain psychologically active long after the external situation has ended. Such repetitive processing may increase negative mood, interfere with concentration, decrease motivation for constructive activity, and promote withdrawal or avoidance. Over time, this pattern may create a self-reinforcing cycle in which distress increases rumination and rumination, in turn, magnifies distress. Meta-analytic evidence has supported the effectiveness of cognitive behavioral interventions in reducing repetitive negative thinking, including rumination and worry, suggesting that these processes are not merely correlates of emotional disorders but potentially modifiable treatment targets (Stenzel et al., 2025). Similarly, a meta-analysis specifically examining rumination-focused cognitive behavioral therapy has demonstrated that structured cognitive behavioral strategies can effectively target ruminative processes across randomized controlled trials (Querstret & Cropley, 2025).

Rumination is also closely related to depressive symptomatology. Individuals experiencing depressive affect may focus excessively on perceived inadequacies, losses, negative interpersonal experiences, and uncertainty about their future, thereby strengthening the cognitive-emotional patterns underlying depression. This relationship has led to the development of interventions that directly address rumination rather than focusing exclusively on the content of depressive thoughts. In a multicenter randomized clinical trial, rumination-focused cognitive behavioral therapy was found to reduce depression, negative emotion, and rumination among patients with recurrent major depressive disorder, providing support for the clinical value of intervening directly in repetitive negative thinking (Hasani et al., 2025). Likewise, group rumination-focused cognitive behavior therapy has shown beneficial effects on depressive symptoms among people with schizophrenia, demonstrating

that rumination-oriented cognitive behavioral strategies may also be applicable in populations experiencing complex psychiatric conditions (Chiang et al., 2025). These findings suggest that reducing maladaptive repetitive thinking can contribute to emotional improvement even when rumination occurs within different clinical contexts.

The importance of rumination is not limited to major depressive disorder or severe psychiatric conditions. It has also been examined in adolescents, individuals facing family stress, and people experiencing anxiety-related problems. For example, cognitive behavioral therapy has been reported to reduce rumination and anxiety sensitivity among adolescents with social anxiety, indicating that cognitive behavioral strategies may disrupt repetitive negative thinking during a developmental period in which self-evaluative concerns and sensitivity to social judgment are particularly salient (Nasehi et al., 2025). Similarly, cognitive behavioral therapy has been used to address rumination and cognitive emotion regulation among adolescents from divorced families, a population that may experience repetitive thinking about family disruption, perceived loss, instability, or interpersonal conflict (Noursideh & Zarei, 2024). These findings reinforce the view that rumination can emerge in response to different psychological and social stressors and that cognitive behavioral methods may provide a broadly applicable framework for modifying this process.

Interventions that integrate cognitive and mindfulness-based elements also provide evidence for the modifiability of rumination. Mindfulness-based cognitive therapy, for instance, aims to alter the individual's relationship with thoughts and emotions by promoting nonjudgmental awareness and reducing automatic engagement with maladaptive cognitive content. Among women with irritable bowel syndrome, mindfulness-based cognitive therapy was found to improve emotional outcomes, sleep quality, and rumination, suggesting that cognitive interventions can reduce repetitive thought processes even when psychological difficulties are intertwined with chronic physical symptoms (Esmaeilzadeh Torshaye, 2025). Such findings are consistent with the broader cognitive behavioral proposition that distress is influenced not only by external events but also by how individuals interpret, elaborate, and repeatedly process those events. Therefore, interventions capable of modifying maladaptive cognitive engagement may simultaneously influence multiple emotional outcomes.

Cognitive behavioral therapy is one of the most extensively studied psychological treatment approaches for emotional and behavioral problems. Its central premise is

that psychological distress is maintained partly by dysfunctional patterns of cognition and behavior that can be identified, evaluated, and modified through systematic therapeutic techniques. CBT emphasizes the reciprocal relationships among thoughts, emotions, physiological responses, and behaviors. Within this framework, negative automatic thoughts, cognitive distortions, rigid assumptions, maladaptive beliefs, behavioral avoidance, and ineffective coping strategies can contribute to persistent distress. Treatment therefore aims to help individuals recognize maladaptive patterns, test the validity and usefulness of their interpretations, develop more balanced cognitions, and engage in behaviors that promote adaptive functioning. The structured, skills-based, and relatively time-limited nature of CBT makes it particularly suitable for counseling settings in which clients may present with heterogeneous concerns requiring interventions that address common psychological mechanisms.

In relation to rumination, CBT may exert its effects through several complementary pathways. Cognitive restructuring can help individuals identify overgeneralization, catastrophizing, self-blame, selective attention to negative information, and rigid interpretations that fuel repetitive thought cycles. By learning to examine evidence and generate alternative explanations, individuals may reduce the perceived credibility and urgency of ruminative thoughts. Behavioral activation may further interrupt rumination by shifting attention from passive internal analysis toward meaningful activities, environmental reinforcement, and goal-directed behavior. Problem-solving techniques can distinguish productive reflection from repetitive thinking by directing attention toward specific, controllable actions. These mechanisms are supported by research showing reductions in rumination during behavioral and cognitive interventions. Group-based behavioral activation treatment for depression, for example, has been associated with reductions in rumination alongside changes in interpersonal and self-related cognitive processes (Shapiro et al., 2026). This finding further supports the proposition that increasing behavioral engagement and reducing passive cognitive dwelling may weaken processes that maintain emotional distress.

CBT may also improve the individual's capacity to tolerate distressing internal experiences without becoming overwhelmed by them. Distress tolerance refers to the perceived or actual ability to endure negative emotional states and continue adaptive functioning despite discomfort. Low distress tolerance may lead individuals to engage in

avoidance, reassurance seeking, withdrawal, repetitive thinking, or other strategies aimed at immediately escaping unpleasant internal experiences. These strategies can paradoxically maintain or intensify distress. Studies comparing CBT with other therapeutic approaches have demonstrated beneficial changes in constructs closely related to adaptive coping, including distress tolerance and cognitive flexibility. Research among patients with major depressive disorder has shown that CBT and acceptance and commitment therapy can influence referential thinking, cognitive flexibility, and distress tolerance, supporting the role of structured psychotherapy in improving how individuals respond to difficult thoughts and emotional states (Allahmoradi et al., 2026; Yaghoubi et al., 2026). Although these interventions differ theoretically, such findings underscore the importance of modifying rigid cognitive processes and improving individuals' capacity to respond adaptively to distress.

Evidence for the effects of CBT on distress tolerance and related emotional capacities has also emerged in other populations. A group intervention based on a cognitive-behavioral approach was found to influence ambiguity tolerance, distress tolerance, and academic outcomes among students, indicating that CBT-derived strategies may strengthen adaptive responses to uncertainty and emotionally challenging situations beyond traditional psychiatric settings (Nashtban et al., 2025). Similarly, cognitive-behavioral therapy has been shown to improve self-compassion and distress tolerance among women with anxiety disorders (Gholipour et al., 2025). These findings are relevant to individuals attending counseling centers because low tolerance of distress may contribute to the persistence of both rumination and psychological discomfort. When people perceive negative emotion as intolerable, they may attempt to mentally control, suppress, or repeatedly analyze it, thereby increasing cognitive preoccupation and prolonging psychological distress. CBT may therefore reduce symptoms not only by changing thought content but also by increasing the individual's capacity to experience and manage distress more effectively.

Direct evidence also supports the effectiveness of CBT for reducing psychological distress. Among myocardial infarction survivors, a systematic review concluded that CBT can be effective in reducing psychological distress, demonstrating that cognitive behavioral strategies may be beneficial even when distress occurs in the context of serious medical illness (Mala et al., 2026). A randomized controlled trial among individuals experiencing hypertension-related

psychological distress similarly reported beneficial effects of CBT, suggesting that psychological interventions can reduce distress associated with chronic health conditions and their emotional consequences (Tamuno-Opubo et al., 2025). Moreover, brief CBT has shown efficacy for cancer survivors experiencing body image distress, indicating that even relatively focused interventions can improve emotional outcomes when treatment is appropriately matched to the psychological concerns of the population (Graboyes et al., 2025). Collectively, this evidence suggests that CBT has broad applicability for distress arising across psychiatric, medical, and psychosocial contexts.

Research has also directly compared CBT with other structured psychotherapy approaches in populations experiencing substantial psychological distress. Among divorced women affected by marital infidelity, both schema therapy and CBT have been examined in relation to psychological distress and forgiveness, further demonstrating the relevance of cognitive behavioral methods for people facing severe interpersonal stressors (Hashemi Fesharaki & Salehi, 2026). Such findings are particularly relevant to counseling centers, where individuals often seek help following relationship problems, divorce, occupational difficulties, family conflict, adjustment problems, or other stressful life circumstances. These clients may not necessarily meet criteria for a specific psychiatric disorder, but they may nevertheless experience clinically meaningful levels of rumination and distress that interfere with daily functioning. An intervention such as CBT, which targets both cognitive and behavioral maintenance factors, may therefore be particularly suitable for heterogeneous counseling populations.

Despite substantial evidence supporting CBT for psychological symptoms, important gaps remain. Much of the available research has examined specific diagnostic groups, such as individuals with recurrent major depression, schizophrenia, social anxiety, anxiety disorders, or chronic medical conditions (Chiang et al., 2025; Gholipour et al., 2025; Hasani et al., 2025; Nasehi et al., 2025). Other studies have focused on specialized intervention variants such as rumination-focused CBT, mindfulness-based cognitive therapy, behavioral activation, or comparisons between CBT and alternative psychotherapeutic models (Allahmoradi et al., 2026; Esmaeilzadeh Torshaye, 2025; Querstret & Cropley, 2025; Shapiro et al., 2026). Although these studies provide valuable evidence, individuals presenting to general counseling centers constitute a broader and more heterogeneous population whose difficulties may not be

adequately represented by disorder-specific research. In such settings, examining common transdiagnostic outcomes such as rumination and psychological distress may offer greater practical relevance than focusing exclusively on diagnostic symptom clusters.

Another important consideration is the potential interaction between rumination and psychological distress. These variables are conceptually distinct but functionally interconnected. Psychological distress may provide the emotional trigger for repetitive negative thinking, whereas rumination may prolong and intensify that distress by maintaining attention on negative experiences and limiting engagement in effective coping. CBT is theoretically well positioned to target both components of this cycle because it addresses maladaptive cognition while simultaneously encouraging adaptive behavior, problem solving, emotional regulation, and coping. Recent findings across different populations suggest that cognitive behavioral interventions can reduce rumination, repetitive negative thinking, and psychological distress and can improve cognitive flexibility and distress tolerance (Mala et al., 2026; Stenzel et al., 2025; Yaghoubi et al., 2026). However, further intervention research is needed to determine whether a structured CBT program can simultaneously reduce rumination and psychological distress among individuals seeking services in general counseling settings.

Accordingly, the aim of the present study was to determine the effectiveness of cognitive behavioral therapy in reducing rumination and psychological distress among individuals attending counseling centers.

2. Methods and Materials

2.1. Study Design and Participants

The present study employed a quasi-experimental pretest–posttest design with an experimental group and a control group to examine the effectiveness of cognitive behavioral therapy (CBT) in reducing rumination and psychological distress among individuals attending counseling centers. The statistical population consisted of individuals who attended counseling centers in Tehran during 2025–2026. From this population, 30 eligible individuals were recruited using convenience sampling. After enrollment and completion of the baseline assessments, the participants were randomly assigned to either the experimental group ($n = 15$) or the control group ($n = 15$), thereby reducing systematic differences between the two groups before the intervention. Both groups

completed measures of rumination and psychological distress at the pretest stage. The experimental group subsequently participated in the CBT intervention, whereas the control group received no CBT intervention during the study period and continued under the routine conditions of the counseling centers. Following completion of the intervention, both groups completed the same outcome measures as posttests. Participation in the study was voluntary, participants were informed about the general purpose and procedures of the research, and the confidentiality of their personal information and responses was maintained throughout the study.

2.2. Data Collection Tools

The experimental group received a cognitive behavioral therapy intervention consisting of eight 120-minute sessions. The intervention was structured according to the fundamental principles of CBT and was designed to modify maladaptive cognitive and behavioral processes associated with rumination and psychological distress. The initial sessions focused on establishing a therapeutic framework, introducing participants to the cognitive behavioral model, providing psychoeducation regarding the relationships among thoughts, emotions, physiological responses, and behaviors, and helping participants identify situations associated with heightened psychological distress and repetitive negative thinking. Subsequent sessions emphasized the identification of automatic negative thoughts, recognition of common cognitive distortions, examination of the evidence supporting and contradicting dysfunctional beliefs, and cognitive restructuring through the development of more balanced and adaptive interpretations. Particular attention was given to increasing participants' awareness of ruminative thought cycles and distinguishing repetitive, unproductive thinking from active and goal-directed problem solving. Behavioral techniques were also incorporated, including behavioral activation, scheduling of pleasurable and mastery-oriented activities, problem-solving strategies, and the gradual replacement of passive rumination with adaptive behavioral responses. Participants practiced techniques for redirecting attention, reducing avoidance, and responding more effectively to distressing thoughts and emotions. Homework assignments were used between sessions to encourage the application of cognitive restructuring and behavioral strategies in everyday situations. The later sessions focused on consolidating acquired skills, reviewing progress, identifying high-risk

situations for the recurrence of rumination and psychological distress, strengthening adaptive coping responses, and developing a relapse-prevention plan. After completion of the eighth session, posttest assessments of rumination and psychological distress were administered to participants in both the experimental and control groups under conditions comparable to those of the pretest assessment.

2.3. Data Analysis

The collected data were analyzed using descriptive and inferential statistical procedures. Descriptive statistics, including means and standard deviations, were calculated to summarize participants' scores on rumination and psychological distress at the pretest and posttest stages. Prior to conducting inferential analyses, the relevant statistical assumptions were evaluated, including examination of the distribution of the dependent variables, homogeneity of variances, and the appropriateness of the data for parametric analysis. Because the study included two correlated psychological outcomes measured in an experimental and a control group using a pretest–posttest design, the effectiveness of CBT was evaluated by comparing posttest scores between the groups while accounting for baseline

differences in pretest scores. Accordingly, analysis of covariance procedures were used, with posttest scores as the dependent variables, group membership as the independent variable, and corresponding pretest scores entered as covariates. Where the outcomes were analyzed simultaneously, multivariate analysis of covariance was used before examining the adjusted univariate effects for rumination and psychological distress separately. Statistical significance was evaluated at an alpha level of .05, and effect-size indices were considered to determine the magnitude of the observed intervention effects in addition to statistical significance.

3. Findings and Results

The descriptive statistics were first examined to determine the pattern of changes in rumination and psychological distress across the pretest and posttest assessments in the experimental and control groups. Means and standard deviations for both study variables at each measurement occasion are presented in Table 1. Examination of these descriptive indices provides an initial indication of the direction and magnitude of changes occurring following cognitive behavioral therapy.

Table 1

Descriptive Statistics for Rumination and Psychological Distress in the Experimental and Control Groups

Variable	Assessment	Experimental Group, M	Experimental Group, SD	Control Group, M	Control Group, SD
Rumination	Pretest	57.65	7.68	56.32	7.12
	Posttest	44.78	6.14	57.78	7.68
Psychological distress	Pretest	39.53	5.38	40.76	5.48
	Posttest	28.43	4.12	37.64	5.35

As shown in Table 1, the experimental and control groups demonstrated relatively similar mean scores for rumination and psychological distress at pretest. However, noticeable changes emerged at posttest. In the experimental group, the mean rumination score decreased from 57.65 (SD = 7.68) at pretest to 44.78 (SD = 6.14) at posttest, representing a substantial reduction following the CBT intervention. In contrast, the mean rumination score in the control group changed from 56.32 (SD = 7.12) at pretest to 57.78 (SD = 7.68) at posttest, indicating no corresponding reduction. A similar pattern was observed for psychological distress. The experimental group's mean psychological distress score decreased from 39.53 (SD = 5.38) at pretest to 28.43 (SD = 4.12) at posttest, whereas the control group's mean score changed only from 40.76 (SD = 5.48) to 37.64 (SD = 5.35).

Thus, the descriptive findings indicated substantially greater reductions in both rumination and psychological distress among participants who received cognitive behavioral therapy.

Before conducting the inferential analyses, the assumption of normality was examined using the Shapiro–Wilk test separately for the experimental and control groups. For rumination, the Shapiro–Wilk test was nonsignificant in both the experimental group ($W = .652$, $df = 15$, $p = .486$) and the control group ($W = .623$, $df = 15$, $p = .471$). Similarly, the normality test for psychological distress was nonsignificant in the experimental group ($W = .586$, $df = 15$, $p = .512$) and the control group ($W = .623$, $df = 15$, $p = .457$). Because all reported significance values exceeded .05, the null hypothesis of normality was not rejected, indicating that

the distributions of rumination and psychological distress scores did not significantly deviate from normality in either group. Accordingly, the normality assumption required for

parametric analysis was considered satisfied, and the inferential analyses were subsequently conducted.

Table 2

Results of Repeated-Measures Analysis of Variance for Rumination and Psychological Distress

Variable	Source	Sum of Squares	df	Mean Square	F	p	η^2
Rumination	Time	1357.457	1	1357.457	63.536	< .001	.547
	Time $\times$ Group	741.531	2	370.765	14.712	< .001	.530
	Error	212.478	27	7.869	—	—	—
Psychological distress	Time	1126.425	1	1126.425	60.599	< .001	.532
	Time $\times$ Group	623.369	2	311.684	12.625	< .001	.521
	Error	196.961	27	7.294	—	—	—

As presented in Table 2, the main effect of time on rumination was statistically significant, $F(1, 27) = 63.536$, $p < .001$, $\eta^2 = .547$, indicating that rumination scores changed significantly across the two measurement occasions. More importantly, the time $\times$ group interaction was also statistically significant, $F(2, 27) = 14.712$, $p < .001$, $\eta^2 = .530$. This significant interaction demonstrates that the pattern of change in rumination differed between the experimental and control groups. Considered together with the descriptive findings, the results indicate that participants who received cognitive behavioral therapy experienced a substantially greater reduction in rumination than participants in the control group. The effect size for the interaction further suggests that the intervention was associated with a considerable proportion of the variance in changes in rumination.

For psychological distress, the main effect of time was likewise statistically significant, $F(1, 27) = 60.599$, $p < .001$, $\eta^2 = .532$, indicating a significant overall change in psychological distress scores from pretest to posttest. The interaction between time and group was also statistically significant, $F(2, 27) = 12.625$, $p < .001$, $\eta^2 = .521$, demonstrating that changes in psychological distress differed significantly according to group membership. The descriptive results showed that the reduction was substantially greater in the experimental group than in the control group. Therefore, the findings support the effectiveness of cognitive behavioral therapy in reducing both rumination and psychological distress among individuals attending counseling centers.

4. Discussion

The present study investigated the effectiveness of cognitive behavioral therapy (CBT) in reducing rumination

and psychological distress among individuals attending counseling centers. The findings showed that participants who received CBT demonstrated substantial reductions in both rumination and psychological distress from pretest to posttest, whereas comparable changes were not observed in the control group. The inferential results further indicated significant effects of time as well as significant time $\times$ group interactions for both outcome variables. These findings suggest that the observed improvements were not merely attributable to the passage of time, repeated measurement, or spontaneous change, but were associated with participation in the cognitive behavioral intervention. The magnitude of the reported effect sizes also indicated that CBT had a meaningful influence on both rumination and psychological distress. Overall, the results support the proposition that structured cognitive behavioral interventions can modify maladaptive repetitive thinking while simultaneously reducing broader emotional distress among individuals seeking counseling services.

The significant reduction in rumination observed in the experimental group is consistent with the theoretical foundations of CBT and with previous empirical evidence showing that repetitive negative thinking is responsive to cognitive behavioral intervention. Rumination is generally characterized by repetitive, passive, and self-focused thinking about the causes, meanings, and consequences of negative emotional states. Because CBT explicitly targets maladaptive cognitive patterns, automatic thoughts, cognitive distortions, and dysfunctional interpretations, it provides a direct mechanism through which ruminative processing can be weakened. The present findings are consistent with the transdiagnostic meta-analysis conducted by Stenzel and colleagues, which demonstrated the efficacy of CBT in reducing repetitive negative thinking, including

rumination and worry, across different psychological conditions (Stenzel et al., 2025). This alignment is important because it suggests that the beneficial effect of CBT on rumination is not restricted to a single diagnostic group but may reflect a broader transdiagnostic mechanism. Individuals attending counseling centers often experience heterogeneous emotional difficulties, and the reduction observed in the present study therefore supports the utility of CBT for targeting repetitive negative cognition across a relatively general help-seeking population.

The present result regarding rumination is also strongly supported by research specifically focused on rumination-oriented cognitive behavioral interventions. Querstret and Cropley reported in their meta-analysis of randomized controlled trials that rumination-focused cognitive behavioral therapy is effective in reducing ruminative thinking and associated emotional symptoms (Querstret & Cropley, 2025). This finding is conceptually congruent with the present study because both interventions seek to disrupt repetitive and unproductive cognitive processing. Rumination-focused approaches typically help individuals identify the triggers and functions of repetitive thinking, distinguish abstract and evaluative thinking from concrete and action-oriented processing, and develop alternative behavioral and cognitive responses. Although the present intervention was broader than a purely rumination-focused protocol, several CBT components, including cognitive restructuring, behavioral activation, problem solving, and modification of maladaptive thought patterns, likely operated through similar mechanisms. By learning to recognize and challenge automatic negative thoughts and by shifting from repetitive internal analysis toward constructive behavioral responses, participants may have become less likely to engage in prolonged rumination.

The findings are also compatible with the randomized clinical trial conducted by Hasani and colleagues, in which rumination-focused CBT significantly reduced depression, negative emotion, and rumination among patients with recurrent major depressive disorder (Hasani et al., 2025). The similarity between that study and the present findings provides further evidence that rumination is a modifiable cognitive process rather than a fixed characteristic. One possible explanation is that CBT helps individuals recognize the distinction between productive reflection and repetitive negative thinking. People who ruminate often believe that continued analysis will help them understand or resolve their difficulties, even though the process may actually intensify negative affect and interfere with problem solving. Through

cognitive restructuring and guided examination of thought patterns, participants may learn that repeated negative analysis does not necessarily produce effective solutions. This change in metacognitive awareness may reduce the tendency to remain cognitively engaged with distressing themes.

The results also correspond with findings obtained in populations with other psychological difficulties. Chiang and colleagues demonstrated that group rumination-focused CBT reduced depressive symptoms in people with schizophrenia (Chiang et al., 2025). Although individuals with schizophrenia differ clinically from the participants in the present counseling-center sample, the convergence of findings suggests that interventions aimed at modifying repetitive negative cognition may have applicability across very different psychological contexts. Similarly, Nasehi and colleagues reported that CBT reduced rumination and anxiety sensitivity among adolescents with social anxiety (Nasehi et al., 2025). Noursideh and Zarei also found evidence supporting the effectiveness of CBT on rumination and cognitive emotion regulation among adolescents from divorced families (Noursideh & Zarei, 2024). Taken together, these studies support the interpretation that CBT can reduce rumination when repetitive thinking is associated with depression, anxiety, severe mental illness, or psychosocial stress. The present study extends this evidence by showing a similar pattern among adults attending general counseling centers.

Another explanation for the reduction in rumination may involve the behavioral components of CBT. Rumination is often maintained by inactivity, withdrawal, reduced environmental reinforcement, and excessive inward attention. Behavioral activation and structured engagement in meaningful activities can reduce the amount of unstructured time available for repetitive negative thinking and increase exposure to experiences that generate mastery, pleasure, and social reinforcement. Shapiro and colleagues found reductions in rumination within group-based behavioral activation treatment for depression, suggesting that increasing adaptive behavioral engagement can reduce repetitive negative thought processes even when cognitive restructuring is not the sole treatment mechanism (Shapiro et al., 2026). In the present study, behavioral activation and problem-solving components may have helped participants shift attention away from passive internal analysis and toward concrete actions. This shift may have weakened the reciprocal cycle between low mood, inactivity, and rumination.

The present finding can also be interpreted in light of research on mindfulness-based cognitive interventions. Esmailzadeh Torshaye found that mindfulness-based cognitive therapy was effective in improving positive and negative emotions, sleep quality, and rumination among women with irritable bowel syndrome (Esmailzadeh Torshaye, 2025). Although mindfulness-based cognitive therapy differs from standard CBT, both approaches encourage individuals to alter how they respond to distressing thoughts. CBT primarily emphasizes evaluation and restructuring of maladaptive cognitions, whereas mindfulness-based approaches place greater emphasis on observing thoughts without automatically engaging with them. The convergence of these findings suggests that rumination may be reduced when individuals learn to disengage from automatic repetitive cognitive patterns, whether through restructuring, decentering, behavioral redirection, or a combination of these processes.

The second major finding of the present study was that CBT significantly reduced psychological distress among individuals in the experimental group. This result is consistent with a substantial body of research demonstrating that CBT can improve emotional functioning across clinical, medical, and psychosocial populations. Psychological distress is not limited to one discrete symptom; rather, it reflects a broad state of emotional suffering that may include anxiety, depressive affect, tension, irritability, helplessness, and reduced coping capacity. CBT may reduce such distress by helping individuals modify maladaptive interpretations of stressful events, increase perceived control, strengthen problem-solving ability, and engage in more adaptive behavioral responses. These mechanisms are particularly relevant for individuals attending counseling centers, who may experience multiple overlapping life stressors rather than a single well-defined psychiatric disorder.

The present findings are in agreement with the systematic review by Mala and colleagues, which showed that CBT is effective in reducing psychological distress among myocardial infarction survivors (Mala et al., 2026). Although medical populations face different stressors from counseling-center clients, both groups may experience persistent worry, catastrophic interpretation, helplessness, and difficulty adapting to stressful circumstances. CBT can address these processes by restructuring dysfunctional beliefs and increasing coping efficacy. The current findings therefore add to evidence that CBT can reduce psychological distress in both health-related and general psychosocial contexts.

Similarly, Tamuno-Opubo and colleagues demonstrated the effectiveness of CBT in reducing hypertension-related psychological distress in a randomized controlled trial (Tamuno-Opubo et al., 2025). Their findings support the idea that psychological distress can be modified through structured changes in cognition and behavior even when distress occurs alongside chronic physical illness. Graboyes and colleagues also found that brief CBT was effective for head and neck cancer survivors experiencing body image distress (Graboyes et al., 2025). The relevance of these studies lies in the flexibility of CBT across different stress contexts. Regardless of whether distress is associated with medical illness, body image, interpersonal difficulties, or more general emotional problems, maladaptive interpretations and avoidance patterns may contribute to its persistence. The present results suggest that these same modifiable mechanisms may operate among individuals presenting to counseling centers.

The reduction in psychological distress may also be explained through improvements in distress tolerance and cognitive flexibility. Individuals who perceive negative emotional states as intolerable are more likely to engage in avoidance, suppression, withdrawal, reassurance seeking, or repetitive thinking. Such responses may provide temporary relief but often maintain distress over time. Allahmoradi and colleagues reported that CBT and acceptance and commitment therapy were effective in improving referential thoughts, cognitive flexibility, and distress tolerance among patients with major depression (Allahmoradi et al., 2026). Yaghoubi and colleagues similarly found that CBT influenced referential thinking, cognitive flexibility, and distress tolerance in patients with major depressive disorder (Yaghoubi et al., 2026). These findings suggest that CBT may reduce distress not simply by eliminating negative thoughts, but by increasing the individual's capacity to respond to difficult thoughts and emotions more flexibly. In the present study, participants may have become better able to tolerate emotional discomfort without escalating it through catastrophic interpretation or repetitive cognitive engagement.

Evidence from other studies also supports this explanation. Nashtban and colleagues found that a group intervention based on the cognitive-behavioral approach influenced ambiguity tolerance and distress tolerance among students (Nashtban et al., 2025). Gholipour and colleagues reported that CBT improved self-compassion and distress tolerance among women with anxiety disorder (Gholipour et al., 2025). These results are relevant because poor distress

tolerance may contribute to both psychological distress and rumination. Individuals who have difficulty tolerating uncertainty or negative affect may attempt to mentally solve, suppress, or repeatedly analyze their experiences. Such cognitive efforts may paradoxically increase emotional arousal. CBT can break this cycle by increasing tolerance for uncertainty and emotional discomfort while strengthening adaptive coping strategies.

The findings are also in line with research conducted among women experiencing severe interpersonal stress. Hashemi Fesharaki and Salehi compared schema therapy and CBT in relation to psychological distress and forgiveness among divorced women affected by marital infidelity and reported beneficial effects of structured psychotherapy on psychological distress (Hashemi Fesharaki & Salehi, 2026). This comparison is particularly relevant to the present sample because clients attending counseling centers frequently seek treatment following interpersonal conflict, divorce, relationship difficulties, family stress, or other emotionally demanding events. Such experiences may produce both persistent distress and repetitive negative thinking. CBT may therefore be especially appropriate in counseling settings because it addresses both the cognitive interpretation of stressful events and the behavioral responses that maintain emotional suffering.

The simultaneous improvement in rumination and psychological distress observed in the present study may also reflect the reciprocal relationship between these two variables. Rumination can intensify distress by repeatedly directing attention toward negative emotional material, while psychological distress can increase the likelihood of ruminative thinking. This reciprocal process may produce a self-maintaining cycle. CBT likely interrupted this cycle at multiple points. Cognitive restructuring may have reduced negative interpretations, behavioral activation may have decreased withdrawal and passive thinking, problem-solving skills may have replaced repetitive analysis with action-oriented coping, and relapse-prevention strategies may have increased awareness of triggers. The simultaneous reductions in both outcomes therefore appear theoretically coherent and are consistent with the broader literature showing that interventions targeting repetitive negative thinking can also produce improvements in emotional symptoms (Querstret & Cropley, 2025; Stenzel et al., 2025).

Overall, the findings of the present study support the clinical usefulness of CBT for individuals attending counseling centers. The results are broadly consistent with

previous studies conducted across depression, anxiety, schizophrenia, chronic medical illness, interpersonal distress, and adolescent populations (Chiang et al., 2025; Hasani et al., 2025; Mala et al., 2026; Nasehi et al., 2025). This consistency suggests that the effects observed in the present study may be understood through transdiagnostic mechanisms rather than disorder-specific processes alone. In particular, modification of repetitive negative thinking, enhancement of cognitive flexibility, improvement in distress tolerance, and increased behavioral engagement appear to be plausible mechanisms through which CBT may reduce both rumination and psychological distress. Therefore, the present findings contribute to the growing body of evidence supporting the use of structured cognitive behavioral interventions in general counseling settings.

One limitation of the present study was its relatively small sample size, which restricts the statistical power of the analyses and may limit the generalizability of the findings to the broader population of individuals attending counseling centers. Participants were also recruited through convenience sampling from counseling centers in Tehran, and therefore the sample may not represent individuals from other geographical areas, socioeconomic backgrounds, or cultural contexts. The study employed only two measurement occasions, namely pretest and posttest, and no follow-up assessment was conducted; consequently, it is not possible to determine whether the observed reductions in rumination and psychological distress were maintained over longer periods. The use of self-report questionnaires may also have introduced response biases, including social desirability, inaccurate recall, or participants' awareness of their treatment condition. Moreover, the study did not assess potentially influential variables such as psychiatric diagnosis, medication use, previous psychotherapy, severity of presenting problems, life stressors, or treatment expectancy, all of which may have affected intervention outcomes.

Future research should replicate the present study using larger and more diverse samples drawn from multiple counseling centers and different geographical regions. Randomized controlled trials with larger sample sizes would provide stronger evidence regarding the causal effects of CBT on rumination and psychological distress. Researchers should also incorporate follow-up assessments at several intervals to evaluate the durability of treatment effects and determine whether improvements are maintained over time. Future studies could examine potential mediators and moderators of treatment response, including cognitive

flexibility, distress tolerance, behavioral activation, emotion regulation, metacognitive beliefs, therapeutic alliance, baseline symptom severity, and demographic characteristics. Comparisons between standard CBT and other evidence-based approaches, such as rumination-focused CBT, mindfulness-based cognitive therapy, schema therapy, acceptance and commitment therapy, or behavioral activation, would also help clarify which treatment components are most effective for specific client profiles. The inclusion of clinician-rated measures, behavioral indicators, and qualitative interviews alongside self-report instruments could provide a more comprehensive understanding of treatment-related change.

In practice, counseling centers can consider incorporating structured CBT programs into routine psychological services for clients presenting with persistent repetitive thinking and elevated psychological distress. Therapists should assess both the content and the process of clients' thinking and pay particular attention to repetitive, passive, and unproductive patterns that may maintain emotional difficulties. Treatment programs may benefit from combining cognitive restructuring with behavioral activation, problem-solving training, attention-shifting strategies, distress-tolerance skills, and relapse-prevention planning. Because rumination and psychological distress often reinforce one another, intervention should address both variables concurrently rather than treating them as independent problems. Brief and structured CBT protocols may be particularly useful in counseling settings where resources are limited and clients present with heterogeneous concerns. Training counselors in transdiagnostic CBT techniques could also facilitate the delivery of interventions that target shared psychological mechanisms across a wide range of presenting problems.

Authors' Contributions

Authors equally contributed to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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