

The Effectiveness of Cognitive-Behavioral Therapy in Alleviating Symptoms of Love Trauma Syndrome in Female University Students

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ABSTRACT

Objective: Love Trauma Syndrome encompasses a range of severe symptoms that emerge after the end of a romantic relationship and are sometimes accompanied by a spectrum of clinical conditions such as severe anxiety, depression, and substance use. Therefore, the present study aims to investigate the effectiveness of cognitive-behavioral therapy (CBT) on self-esteem, anxiety, and depression in female university students with a history of emotional breakup.

Methods and Materials: This quasi-experimental research employed a pre-test, post-test, and follow-up design with a control group. The statistical population included all female students at Sari University who visited the counseling center in 2023. A purposive and convenience sampling method was used, selecting students who had a history of emotional breakup and were willing to participate voluntarily. A total of 30 eligible participants were randomly assigned to either the intervention or control group. Research instruments included the Love Trauma Inventory (LTI), Beck Depression Inventory-II (BDI-II), Rosenberg Self-Esteem Scale, and Beck Anxiety Inventory, all of which were completed by both groups in the pre-test, post-test, and follow-up stages. Data were analyzed using SPSS.22 software, and multivariate and univariate covariance analyses were conducted.

Findings: The results indicated that cognitive-behavioral therapy was effective in improving symptoms of Love Trauma Syndrome ($F = 230.28, P < 0.001$), self-esteem ($F = 134.18, P < 0.001$), anxiety ($F = 136.51, P < 0.001$), and depression ($F = 715.32, P < 0.001$) in female university students, with these results being sustained through the follow-up period.

Conclusion: It can be concluded that cognitive-behavioral therapy is effective in reducing the symptoms of Love Trauma Syndrome, decreasing anxiety and depression, and increasing self-esteem.

Keywords: Cognitive-Behavioral Therapy, Love Trauma Syndrome, Students.

1. Introduction

Young adulthood extends longer than previous stages, continuing from the end of adolescence to approximately 35 years of age. During this period, individuals separate from their parents, act more autonomously, and begin intimate and emotional relationships. They can integrate their identity with another person's identity without losing their own. This stage is distinguished from other age periods by the crisis of intimacy versus isolation. Individuals in this age range often seek relationships with the opposite sex (Beyers & Seiffge-Krenke, 2010). Self-esteem also plays a role (Sailor, 2013), and conversely, the end of a relationship can be a highly stressful and somewhat traumatic event (Field, 2011).

When a person communicates with another through language, a unique relationship is formed that cannot be found elsewhere in nature (Ertezaee et al., 2023; Mosayebi dorche et al., 2022; Rajabi & Alimoradi 2018). At every stage of life, individuals engage in specific relationships with others that can either enhance their mental health or cause harm (Mousavi, 2007). Love can be easily experienced, akin to enjoying a favorite meal or watching an interesting film, full of pleasure and requiring no effort. However, staying in love is a real challenge (Sailor, 2013; Sbarra, 2006). Ross first introduced the concept of Love Trauma Syndrome. The main characteristic of Love Trauma Syndrome is the emergence of symptoms following a traumatic romantic event. Initially, individuals experience this trauma as a shock, as it disrupts their expectations, desires, hopes, and sense of security from the relationship (Akbari et al., 2012).

This shock is often accompanied by feelings of fear, panic, anxiety, helplessness, and sadness, similar to those experienced during traumatic events such as the threat of death. In this syndrome, the traumatic romantic event is experienced as intense stress and is somewhat damaging. Immediately after perceiving the trauma, individuals suffer emotional, psychological, and physiological distress, such as increased heart rate, tremors, and gastrointestinal discomfort. In such events, the individual's ability to process mentally is disrupted, leading to feelings of anxiety, hopelessness, depression, and emptiness. This creates a sense of inability to control and prevent future events, impairing academic, social, and occupational functioning. Love trauma results from a perceived threat to the ideal romantic relationship. The more in love a person is, or the stronger their desire to continue the relationship, the greater

the intensity of the trauma, leading to depression, anger, hopelessness, restlessness, and pessimism (Sbarra, 2006). The following are some symptoms and signs of Love Trauma Syndrome, although sometimes only a few of these symptoms may be present in an individual.

Love Trauma Syndrome not only leads to avoidance of romantic relationships but sometimes to social isolation. Victims of love trauma often withdraw from essential attachments and distance themselves from loved ones. The shame, embarrassment, and humiliation resulting from love trauma exacerbate social isolation, as individuals avoid friends and family to escape feelings of shame and humiliation (Rahimi et al., 2022; Sailor, 2013). The emotional stages one goes through during and after a breakup are similar to those experienced after losing a loved one. Initially, the person denies the event, followed by a desire to isolate themselves from all situations. Next is the stage of anger, where they blame the other person for their unfortunate situation. The third stage is bargaining, where the individual reviews accounts to ensure everything is equally and fairly divided. This is followed by the stage of depression, characterized by self-hatred, self-blame, and feelings of failure. Finally, after all these occurrences, the person begins to accept the situation and themselves (Rahimi et al., 2022).

All humans strive to satisfy the need for love, rooted in our genes. A good emotional relationship may be the best way to fulfill the need for love and belonging. However, loving someone dearly does not necessarily encourage that person to reciprocate the same feelings. Women, perhaps due to their maternal role, feel a greater need for love and belonging than men. Often, this means women are more inclined to express affection. Based on this genetic difference, women frequently find themselves in relationships with men who do not show love and affection to the extent of their expectations, leading to frustration (Davis et al., 2003).

One therapeutic approach that can help individuals with emotional breakups is cognitive-behavioral therapy (CBT). This approach, which integrates behavior therapy with cognitive therapy, emphasizing behavior and experiential learning, began in the 1970s (Badeleh et al., 2013; Baumeister & Leary, 1995). Cognitive therapists believe that thoughts underpin feelings and that these thoughts are often incorrect and distort reality, causing individuals to feel unhappy. The meaning individuals assign to events determines their feelings and behaviors. Psychological problems such as anxiety, depression, and dissatisfaction

with interpersonal relationships arise from maladaptive cognitive responses to life situations (Rosner et al., 2014; Spirito et al., 2011; Waite et al., 2012).

Cognitive distortions form from the interaction between irrational beliefs and activating events. Some cognitive distortions, such as catastrophizing, personalization, magnification, labeling, mental filtering, and should statements, lead to feelings of inadequacy, depression, and helplessness. These distortions poison an individual's thinking, reducing performance, hope, and optimism. They cause individuals to have the worst feelings about themselves, lowering self-esteem and reinforcing passive and isolating behaviors, as well as causing physiological and emotional distress. Cognitive therapists assign homework at the end of each session, believing that logical thinking is a skill that requires practice to become a daily habit, leading to complete recovery (Akbari et al., 2012).

Identifying irrational thoughts is a skill that clients must learn both during and between therapy sessions. To recognize irrational thoughts, clients must imagine a specific event that made them feel bad and identify their thoughts as soon as they experience unpleasant feelings. Cognitive therapists use various techniques to challenge these thoughts, helping clients find evidence of the irrationality of their thoughts and develop alternative explanations, and assess the realistic impact of the event on their lives. The goal of CBT is to replace irrational responses with more appropriate and logical emotional responses. One of the skills individuals with Love Trauma Syndrome need to develop is the ability to identify and replace irrational thoughts with more logical responses. One method for identifying irrational thoughts is the vertical arrow technique, which helps uncover underlying cognitive distortions and beliefs related to unpleasant and unhealthy emotions. This technique maps the path to the primary belief and the individual's conscious and subconscious thoughts. Therefore, the present study aims to investigate the effectiveness of CBT on self-esteem, anxiety, and depression in female university students with a history of emotional breakup.

Ethical considerations included voluntary participation, informing participants about the study's details and regulations, respecting participants' attitudes and beliefs, allowing participants to withdraw at any stage, and providing the control group with similar treatment after the study if interested. Confidentiality of documents and questionnaires was maintained, with informed consent obtained from all volunteers.

2. Methods and Materials

2.1. Study Design and Participants

This research is a quasi-experimental study using a pre-test, post-test, and three-month follow-up design with a control group. The statistical population consisted of all female students at Sari University who visited the counseling center in 2023. For sample selection, purposive and convenience sampling methods were used, selecting students with a history of emotional breakup who were willing to participate voluntarily. A total of 30 eligible participants were randomly assigned to either the intervention or control group. During the baseline stage, participants completed questionnaires on love trauma, anxiety, depression, and self-esteem. The treatment was conducted over nine weekly sessions in a group format. After the treatment (follow-up session), participants completed the questionnaires again. Inclusion criteria were: female students at Sari University aged 18-25 years, a history of Love Trauma Syndrome, a romantic relationship lasting at least six months, at least three months since the end of the relationship, no participation in other therapeutic interventions, no medication use, and no psychiatrist visits in the past month; the relationship termination was not mutual or desired by the individual.

2.2. Measures

2.2.1. Love Trauma

Developed by Ross to assess the degree of emotional pain from love trauma, this 10-item, 4-point scale questionnaire evaluates physical, emotional, cognitive, and behavioral disturbances. The cut-off score is 20. The internal consistency of this questionnaire is 0.81, and its validity in Iran, measured by test-retest over one week, is 0.83 (Akbari et al., 2012).

2.2.2. Depression

Beck Depression Inventory-II (BDI-II), a 21-item scale, is a revised version of the Beck Depression Inventory (BDI), with a cut-off score of 17, assessing physical, behavioral, and cognitive symptoms of depression. Each item is scored from 0 to 3. Internal consistency for foreign samples ranges from 0.73 to 0.92, with an alpha coefficient of 0.86 for patients and 0.81 for non-patients. In Iranian samples, the alpha coefficient is 0.92 for outpatients, with test-retest

reliability of 0.93 and validity ranging from 0.70 to 0.90 (Abdolmohamadi & Ghadiri, 2023; Ziapour et al., 2023).

2.2.3. *Self-Esteem*

Designed by Rosenberg in 1965, this 10-item scale uses a four-point Likert scale (strongly agree to strongly disagree). In a sample of 185 Shiraz University students, its reliability was 0.69 (Cronbach's alpha), 0.78 (test-retest), and 0.68 (split-half). Concurrent validity with the Coopersmith Self-Esteem Inventory was 0.61. In another study, Cronbach's alpha ranged from 0.80 to 0.87 (Sadat Mousavi & Ebrahimi, 2024).

2.2.4. *Anxiety*

Beck Anxiety Inventory is a 21-item, 4-point scale (not at all, mildly, moderately, severely) questionnaire assesses common anxiety symptoms (mental, physical, phobia). Total scores range from 0 to 63. The reliability and validity of this questionnaire have been confirmed in various Iranian studies on different populations (Esmailim Dehkhajeh et al., 2023).

2.3. *Intervention*

2.3.1. *Cognitive Behavioral Therapy*

The intervention protocol consists of nine CBT sessions designed to help female university students cope with emotional distress following a romantic breakup. Each session builds on the previous one, introducing cognitive-behavioral techniques to challenge and change maladaptive thoughts and behaviors. The sessions include education on CBT principles, identification and modification of negative thoughts and beliefs, emotional regulation, and development of coping strategies. Homework assignments are given at the end of each session to reinforce the skills learned and to promote continuous progress (Akbari et al., 2012; Azimi et al., 2017; Badeleh et al., 2013; Baumeister & Leary, 1995).

Session 1: Introduction to CBT

The first session introduces participants to the principles of cognitive-behavioral therapy (CBT). The therapist outlines the expectations and goals for the therapy process. Participants discuss their romantic relationships and the emotional impact of their breakups. The ABC model (Activating Event, Belief, Consequence) is explained, along with the role of beliefs and values in shaping emotional responses. Homework assignments are given to encourage participants to reflect on these concepts and begin identifying their own ABC patterns.

Session 2: Identifying ABC Factors

In the second session, participants review their homework and identify the A (Activating Event), B (Belief), and C (Consequence) factors in their experiences. The therapist evaluates the participants' thoughts and introduces techniques to challenge these thoughts. Four cognitive styles associated with errors are introduced: negative automatic thoughts, core negative beliefs, cognitive triangles, and logical fallacies. Participants receive homework to practice these techniques and further explore their cognitive patterns.

Session 3: Identifying and Changing Intermediate Beliefs

During the third session, the therapist reviews the homework and helps participants identify and modify their intermediate beliefs, which include assumptions, coping strategies, and personal rules. The relationship between thoughts, emotions, and behaviors is explained in more detail. Homework assignments are given to help participants apply these concepts to their daily lives and to continue working on changing their intermediate beliefs.

Session 4: Focusing on Core Beliefs

In the fourth session, participants review their homework and focus on identifying and replacing their core beliefs. The therapist helps them evaluate their thoughts, worries, emotions, and feelings. Participants learn to substitute dysfunctional and illogical thoughts with more functional ones. Homework assignments are given to reinforce these skills and promote ongoing evaluation of their cognitive processes.

Session 5: Psychological Relaxation Techniques

The fifth session focuses on teaching psychological relaxation techniques. Participants review their homework and discuss methods of self-punishment and self-reward. The therapist introduces maintenance strategies and case conceptualization. Participants receive homework to practice relaxation techniques and self-reward strategies to enhance their emotional well-being.

Session 6: Understanding Romantic Relationships

In the sixth session, participants discuss their romantic relationships and the end of these relationships. The therapist educates them on appropriate and inappropriate responses to the emotional pain of a breakup. Self-awareness and recognition of personal characteristics and relationship warning signs are emphasized. Homework assignments are given to foster self-awareness and understanding of their relationship patterns.

Session 7: Communication Skills and Emotional Management

The seventh session teaches communication skills, self-esteem, assertiveness, and emotional management. Participants review their homework and learn to replace illogical reactions with more rational responses. Homework assignments are given to practice these skills in real-life situations, enhancing their ability to manage emotions and communicate effectively.

Session 8: Reviewing Cognitive Errors and Emotional Processing

In the eighth session, participants review cognitive errors and distortions, focusing on emotional processing. The therapist helps them create positive mental imagery and counteract ineffective mental images. Homework assignments are given to encourage the practice of these techniques, promoting emotional resilience and cognitive flexibility.

Session 9: Final Review and Prevention Strategies

The final session reviews all previous sessions and the CBT approach. Participants discuss their concerns and the therapist provides strategies for preventing psychological relapse. Homework assignments include strategies for maintaining progress and preventing future emotional distress. The therapist ensures that participants are equipped with the skills and knowledge to continue their emotional growth independently.

2.4. Data analysis

Descriptive statistics were calculated for each research variable. Inferential statistics included univariate and multivariate covariance analysis using SPSS-22 software.

3. Findings and Results

The mean age of the students was 21.70 ± 2.04 years, with the minimum and maximum ages being 18 and 25 years, respectively, in both groups. There was no significant difference in mean age between the two groups ($t = 0.442, p = 0.662$). The average duration of the relationship that led to emotional breakup was 14.23 ± 4.70 months, with the minimum duration being 7 months and the maximum 23 months in both the experimental and control groups. There was no significant difference in the average duration of the relationship between the two groups ($t = 0.115, p = 0.910$). The experimental group included 40% associate degree students, 40% bachelor's degree students, and 20% master's degree students. In the control group, 60% were associate degree students, 20% were bachelor's degree students, and 20% were master's degree students. The groups were homogenous in terms of the distribution of educational status (Fisher's Exact Test = 1.631, $p = 0.512$).

Table 1

Descriptive Statistics for Mean and Standard Deviation (SD) Values at All Stages for Both Groups

Variable	Stage	Experimental Group M (SD)	Control Group M (SD)
Love Trauma	Pre-test	32.43 (4.51)	32.21 (4.59)
	Post-test	18.14 (3.22)	30.79 (4.41)
	Follow-up	18.47 (3.29)	30.73 (4.48)
Self-esteem	Pre-test	15.19 (2.57)	15.34 (2.68)
	Post-test	24.53 (3.12)	16.02 (2.82)
	Follow-up	24.42 (3.21)	16.11 (2.87)
Anxiety	Pre-test	28.54 (5.12)	28.68 (5.17)
	Post-test	15.81 (3.72)	27.89 (5.34)
	Follow-up	15.96 (3.75)	27.85 (5.38)
Depression	Pre-test	29.31 (4.79)	29.52 (4.92)
	Post-test	13.38 (2.92)	28.64 (4.99)
	Follow-up	13.64 (2.97)	28.71 (5.11)

The normal distribution of the research variables was another assumption, which, given the sample size below 50 in the study, was tested using the Shapiro-Wilk test. At a 0.05 error level, the normality assumption was confirmed. The assumption of equal means in the pre-test stage for the variables of love trauma ($p = 0.805$), self-esteem ($p = 0.924$), anxiety ($p = 0.280$), and depression ($p = 0.923$) was tested using independent t-tests, and no significant differences

were found between the groups. A linear relationship between the covariate and the dependent variable in the post-test was also confirmed at the 0.05 error level ($p < 0.05$). The results of Levene's test indicated that the assumption of homogeneity of variances was met during the study ($p < 0.05$). Additionally, the homogeneity of regression slopes in the post-test and follow-up stages was confirmed by calculating the interaction effect of group and covariate ($p <$

0.05). Finally, the results showed that the assumption of homogeneity of the covariance matrix across the set of variables was met according to Box's M test in the post-test

and follow-up, as the probability value was greater than 0.001.

Table 2

Multivariate Analysis of Covariance Results During the Study

Variable	Test	Value	F	df	p	Effect Size
Post-test	Pillai's Trace	0.984	332.365	21, 4	0.000	0.984
	Wilks' Lambda	0.016	332.365	21, 4	0.000	0.984
	Hotelling's Trace	63.308	332.365	21, 4	0.000	0.984
	Roy's Largest Root	63.308	332.365	21, 4	0.000	0.984
Follow-up	Pillai's Trace	0.125	0.751	21, 4	0.568	0.125
	Wilks' Lambda	0.875	0.751	21, 4	0.568	0.125
	Hotelling's Trace	0.143	0.751	21, 4	0.568	0.125
	Roy's Largest Root	0.143	0.751	21, 4	0.568	0.125

To assess the effectiveness of Acceptance and Commitment Therapy on the research variables simultaneously, multivariate covariance analysis was used, as shown in Table 2. Four tests were conducted (Pillai's Trace, Wilks' Lambda, Hotelling's Trace, Roy's Largest Root). If the significance value of any test is less than 0.05, it is considered significant. Among the four multivariate tests, Wilks' Lambda is more well-known, and Pillai's Trace has more power in practical situations. The results of the

multivariate tests showed that the group effect was significant in the post-test stage, indicating that significant changes occurred in the research variables from the pre-test to the post-test ($p < 0.001$) with a combined effect size of 0.984. However, in the follow-up stage compared to the post-test stage, the changes in the two groups were not significant, indicating stability in the treatment effects during the follow-up ($p = 0.125$).

Table 3

Univariate Covariance Analysis to Determine the Effectiveness of Treatment on Each Research Variable

Time	Variable	Source of Effect	Sum of Squares	df	Mean Square	F	p	Effect Size
Post-test vs Pre-test	Love Trauma	Pre-test	117.717	1	117.717	80.229	0.000	0.748
		Group	337.891	1	337.891	230.285	0.000	0.895
	Self-esteem	Pre-test	68.640	1	68.640	81.668	0.000	0.752
		Group	112.782	1	112.782	134.187	0.000	0.832
	Anxiety	Pre-test	70.939	1	70.939	24.433	0.000	0.475
		Group	396.358	1	396.358	136.511	0.000	0.835
	Depression	Pre-test	125.325	1	125.325	150.115	0.000	0.848
		Group	597.197	1	597.197	715.325	0.000	0.964
Follow-up vs Post-test	Love Trauma	Post-test	117.559	1	117.559	23.264	0.000	0.463
		Group	1.400	1	1.400	0.277	0.603	0.010
	Self-esteem	Post-test	90.535	1	90.535	149.068	0.000	0.847
		Group	0.110	1	0.110	0.182	0.673	0.007
	Anxiety	Post-test	136.298	1	136.298	105.037	0.000	0.796
		Group	0.090	1	0.090	0.070	0.794	0.003
	Depression	Post-test	123.375	1	123.375	133.823	0.000	0.832
		Group	0.211	1	0.211	0.229	0.636	0.008

The results of the covariance analysis in Table 3 indicated that in the post-test stage, the pre-test variable was significant as a covariate for all variables ($p < 0.001$). The effect size of the treatment on the variable of love trauma was 0.895, self-esteem was 0.832, anxiety was 0.835, and depression was 0.964. Based on the results of the F-test in

the covariance analysis, there was a significant difference in the changes between the treatment group and the control group after the intervention ($p < 0.001$). To determine the stability of the treatment, a comparison of the follow-up stage with the post-test stage was conducted. Despite the significance of the post-test as a covariate, the changes

observed in this period were not significant in the two groups ($p > 0.05$). The groups remained stable in the follow-up stage compared to the post-test stage.

4. Discussion and Conclusion

The aim of the present study was to investigate the effectiveness of cognitive-behavioral therapy (CBT) on self-esteem, anxiety, and depression in female university students with a history of emotional breakup. The findings also indicated the durability of CBT's effects on self-esteem and the reduction of anxiety and depression in students with a history of love trauma over a three-month period following the end of treatment. These results align with the prior findings (Abdolmohamadi & Ghadiri, 2023; Akbari et al., 2012; Azimi et al., 2017; Badeleh et al., 2013; Baumeister & Leary, 1995; Rahimi et al., 2022; Rajabi & Alimoradi 2018; Rosner et al., 2014; Sadat Mousavi & Ebrahimi, 2024; Spirito et al., 2011; Waite et al., 2012).

Love may be one of the most astonishing and yet painful emotions we experience. The emotional pain of a broken heart can lead to Love Trauma Syndrome, imposing profound states of loss and frustration on the individual. This syndrome occurs when a person perceives their romantic relationship to be under threat. The typical initial response to love trauma is intense emotional turmoil, including feelings of sadness, anxiety, hopelessness, and physical reactions like nausea, tremors, and fatigue. Other symptoms include sleep disturbances, difficulty concentrating, inexplicable crying, intrusive and repetitive thoughts. This syndrome shares many characteristics with post-traumatic stress disorder. Initially, individuals experience it as a shock that disrupts their functioning (Akbari et al., 2012; Mosayebi dorche et al., 2022). Love Trauma Syndrome is a type of stress known as breakup stress, which induces debilitating feelings that result in emotional discomfort and a sense of helplessness, altering the person's sense of capability and often leading to severe negative self-evaluation. Indeed, victims of love trauma view life through a negative lens and feel defeated, with this sense of defeat affecting a wide range of their thoughts and feelings about themselves. Romantic breakup can be extremely damaging to an individual's self-esteem. Sometimes, a reduction in self-esteem following a romantic breakup can lead to related brain changes such as depression, sadness, and anxiety. Although Love Trauma Syndrome is most commonly associated with depression, it can also manifest with anxiety, panic, phobic fears, and a wide range of psychosomatic conditions usually experienced

as anxiety. Many individuals suffering from love trauma experience emotional pain and negative thoughts. The concept of substitution involves exchanging unpleasant, depressing emotions and ineffective thoughts with more positive and pleasant attitudes and feelings, which is the foundation of CBT. The present study aimed to investigate the effectiveness of CBT in improving the symptoms of Love Trauma Syndrome in students. Based on the findings, the CBT approach was effective in reducing anxiety and depression and increasing self-esteem in students with love trauma symptoms (Akbari et al., 2012; Rosner et al., 2014; Waite et al., 2012).

CBT is effective because it leads to positive evaluation and reinforcement. The cognitive-behavioral approach helps individuals recognize and change incorrect thoughts and cognitive distortions that cause unpleasant feelings, enabling them to respond to events with more logical emotional reactions (Azimi et al., 2017; Badeleh et al., 2013).

A crucial factor in the effectiveness of CBT in improving self-esteem is the cognitive component of this therapy, which leads to better understanding of behavioral and emotional changes in the individual. This therapy, by modifying and changing ineffective cognitive factors such as automatic thoughts, intermediate beliefs, and core beliefs that reduce self-esteem in women with a history of emotional breakup, can lead to emotional and behavioral changes and improve self-esteem in these individuals. Additionally, by improving cognitive issues in the affected individual, it reduces stress and anxiety, and by increasing mental health, it can enhance self-esteem and quality of life in these individuals (Rajabi & Alimoradi 2018; Sadat Mousavi & Ebrahimi, 2024).

5. Limitations & Suggestions

This study has several limitations. First, the sample size was relatively small and limited to female university students from one institution, which may restrict the generalizability of the findings to a broader population. Second, the reliance on self-reported measures may introduce response biases, as participants might not accurately report their symptoms or experiences. Third, the study's design did not include a long-term follow-up beyond three months, limiting our understanding of the enduring effects of cognitive-behavioral therapy on love trauma symptoms. Additionally, the study did not account for other potential confounding variables such as the participants'

social support systems, previous mental health history, or concurrent therapeutic interventions.

Future research should consider expanding the sample size and including participants from diverse backgrounds and different educational institutions to enhance the generalizability of the results. Longitudinal studies with extended follow-up periods are recommended to assess the long-term effectiveness and sustainability of cognitive-behavioral therapy in treating love trauma syndrome. It would also be beneficial to incorporate mixed-method approaches, combining quantitative measures with qualitative interviews, to gain a deeper understanding of participants' experiences and the nuanced impacts of therapy. Additionally, examining the role of moderating variables such as social support, personality traits, and coping mechanisms could provide valuable insights into the differential effectiveness of CBT across various subgroups.

The findings of this study have important implications for clinical practice and mental health interventions targeting individuals experiencing emotional distress due to romantic breakups. Mental health professionals, particularly those working in university counseling centers, should consider integrating cognitive-behavioral therapy into their treatment protocols to effectively address symptoms of anxiety, depression, and low self-esteem associated with love trauma. Training programs and workshops for therapists could focus on enhancing skills in identifying and modifying cognitive distortions related to romantic relationships. Additionally, awareness campaigns and support groups could be developed to provide education and emotional support for individuals dealing with the aftermath of a breakup, promoting resilience and mental well-being.

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Declaration

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

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

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

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors contributed equally.

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