

Development of a Structural Model of Love Trauma Syndrome Based on Emotional Intelligence Mediated by Cognitive Distortion in Adolescent Girls Experiencing Emotional Grief

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ABSTRACT

Purpose: This study aimed to develop a structural model of love trauma syndrome based on emotional intelligence with the mediating role of cognitive distortion in adolescent girls experiencing emotional grief.

Methods and Materials: This fundamental and correlational study employed a structural equation modeling (SEM) approach within a positivist paradigm and a cross-sectional design. The statistical population consisted of 11,894 female high school students in Arak during the 2022–2023 academic year. A sample of 300 participants who had experienced romantic breakup was selected using purposive sampling. Standardized instruments were utilized, including the Love Trauma Syndrome Scale (Ross, 1999), the Emotional Intelligence Questionnaire (Schutte et al., 1998), and the Cognitive Distortion Questionnaire (Abdollahzadeh & Salar, 2010). Content and construct validity were confirmed, and reliability was assessed using Cronbach's alpha, composite reliability (CR), and McDonald's omega, all of which exceeded 0.70. Data were analyzed using SPSS-27 and AMOS-20 software through descriptive statistics, Pearson correlations, and structural equation modeling.

Findings: The results revealed a significant negative relationship between emotional intelligence and love trauma syndrome ($p < 0.01$), as well as between emotional intelligence and cognitive distortion ($p < 0.01$). Additionally, cognitive distortion was positively associated with love trauma syndrome. Mediation analysis indicated that cognitive distortion significantly mediated the relationship between emotional intelligence and love trauma syndrome ($\beta = -0.321$, CI 95% = -0.548 to -0.210), with bootstrapping confirming the significance of the indirect effect.

Conclusion: The findings support a structural model in which emotional intelligence directly and indirectly (via cognitive distortion) influences love trauma syndrome in adolescent girls. The results highlight the importance of emotional and cognitive regulation in adolescent emotional resilience.

Keywords: Love Trauma Syndrome, Emotional Intelligence, Cognitive Distortion, Emotional Grief

1. Introduction

Adolescence is a critical developmental stage marked by intense emotional experiences, evolving cognitive capacities, and identity formation. During this phase, individuals are particularly vulnerable to the psychological ramifications of romantic attachment and emotional separation. Among these consequences, *love trauma syndrome* (LTS), characterized by emotional distress following romantic breakup, has emerged as a significant mental health concern in clinical and developmental psychology (Rosse, 1999). Research has demonstrated that the symptoms of LTS may encompass emotional dysregulation, cognitive disruption, and even symptoms resembling post-traumatic stress, especially in adolescent girls, who report higher sensitivity to interpersonal loss and emotional rejection (Smith, 2025; Watson et al., 2024).

The experience of romantic grief during adolescence does not merely involve emotional pain but often leads to maladaptive cognitive responses and persistent negative emotional states. Theoretical and empirical literature highlights the role of *emotional intelligence* (EI)—the ability to identify, understand, manage, and utilize emotions adaptively—in mitigating the impact of emotional breakdowns (Afzalur Rahim & Minors, 2003; Rahim & Minors, 2003). High emotional intelligence enables adolescents to effectively regulate their affective responses, reflect more rationally on their emotional experiences, and prevent the escalation of trauma-related symptoms following romantic rejection. As shown by (Nikpoor & Rajabi, 2017), lower emotional intelligence correlates with a heightened susceptibility to love trauma, often mediated by distorted cognitive processes.

Cognitive distortions, as conceptualized by Beck and later expanded by Ellis, refer to systematic errors in reasoning that reinforce negative thought patterns and maladaptive behaviors. These distortions, such as overgeneralization, catastrophizing, and personalization, often exacerbate emotional responses to adverse experiences, including romantic loss (Ouhmad et al., 2024; Strohmeier et al., 2016). Several studies emphasize that individuals who exhibit elevated levels of cognitive distortions tend to misinterpret relational events, reinforcing beliefs of unworthiness or abandonment and deepening the emotional impact of breakups (Ruiz Santos et al., 2024; Wolfe et al., 2024). Within adolescent populations, these distorted cognitive schemas may become particularly salient due to ongoing neurological and psychosocial development.

The mediating role of cognitive distortions in the relationship between emotional intelligence and psychological distress has gained empirical support in recent years. For instance, (Pour Shirazi & Nasrollahi, 2021) found that individuals with low emotional intelligence not only displayed increased levels of cognitive errors but also experienced more intense emotional and behavioral problems, suggesting a dynamic interplay between emotional and cognitive regulation systems. This notion aligns with (Sibarani et al., 2024), who documented that higher self-awareness and emotional control significantly reduce the prevalence of irrational beliefs and maladaptive cognitive patterns in educational contexts. The implication is that enhancing EI can indirectly reduce the likelihood of cognitive distortions, thereby lessening the overall psychological burden following emotional trauma.

The relevance of this model is particularly evident in cultural contexts such as Iran, where emotional expression and romantic relationships are influenced by socio-religious norms, often rendering adolescent love a sensitive and psychologically complex domain. Studies have shown that adolescents who experience love failure within such cultural frameworks may suffer silently due to internalized shame, limited access to open emotional expression, or fear of stigmatization, amplifying their emotional and cognitive vulnerabilities (Akbari et al., 2020; Ghazizadeh et al., 2020). Moreover, early maladaptive schemas, often shaped by childhood experiences and parental relationships, have also been implicated in the onset of love trauma, which further supports the inclusion of cognitive distortions as a mediating factor (Abounajmi, 2018; Gori et al., 2024).

Recent empirical efforts have attempted to develop integrative models to predict emotional breakdown outcomes by incorporating emotional intelligence, cognitive processes, and contextual variables. (Akhavi Samarin & Ahmadi, 2020) proposed a model linking problem-solving styles to love trauma with cognitive flexibility as a mediator, highlighting the importance of adaptive cognitive functioning. Similarly, (Quintard et al., 2021) introduced the concept of *embodied self-other overlap* in romantic love, suggesting that emotional detachment after breakup triggers disruptions in self-perception and emotion regulation. This perspective supports the idea that strengthening internal emotional competencies could buffer against the psychological fragmentation observed in love trauma syndrome.

Additionally, the current study is informed by developmental and trauma-informed frameworks that

underscore the significance of emotional safety, interpersonal bonding, and resilience-building during adolescence (Willcott-Benoit & Cummings, 2024). The death of a loved one or the loss of a romantic relationship can serve as potential triggers for emotional disequilibrium and even functional disturbances, including dissociative states and somatization, as noted by (Watson et al., 2024). These reactions may be intensified in youth with limited emotional vocabulary and poor metacognitive awareness, hallmarks of underdeveloped emotional intelligence.

In this context, educational and therapeutic interventions aiming to enhance emotional intelligence and challenge cognitive distortions may offer promising avenues for reducing the incidence and severity of love trauma syndrome. (Sayadi Qasbeh & Moqtader, 2021) demonstrated the effectiveness of mindfulness-based emotional training in improving achievement motivation and reducing academic procrastination among students, underscoring the broader cognitive and emotional benefits of such programs. Similarly, (Tosuli et al., 2018) reported significant reductions in love trauma symptoms following group reality therapy, indicating that structured psychological support can improve overall functioning in emotionally distressed adolescents.

The present study seeks to build upon these foundations by proposing and testing a structural model that explores the indirect effect of emotional intelligence on love trauma syndrome through the mediating role of cognitive distortion.

2. Methods and Materials

2.1. Study Design and Participants

The present study is classified as fundamental in terms of its objective and was conducted using structural equation modeling (SEM), which falls under the category of quantitative correlational research methods. The statistical population consisted of all female high school students in the second cycle of secondary education in Arak during the 2022–2023 academic year (Gregorian Calendar), totaling 11,894 individuals. A sample of 300 participants was selected using purposive sampling from among those who had experienced romantic breakup.

2.2. Measure

The Love Trauma Syndrome Scale was developed by Ross in 1999 to measure the intensity of romantic attachment. This questionnaire includes 10 items, each with

four response options. Respondents are required to select the most appropriate option based on their experience of love trauma. The questionnaire provides a general assessment of physical, emotional, cognitive, and behavioral disturbance. A cutoff score of 20 is considered indicative of significant trauma (Ross, 1996). Items are rated on a 4-point Likert scale ranging from 0 to 3. The minimum possible score is 0, the average is 15, and the maximum is 30. A score between 20 and 30 indicates a serious experience of love trauma syndrome. A score between 10 and 19 reflects a moderate and tolerable level, while a score between 0 and 9 suggests the symptoms are manageable and not significantly disruptive. The internal consistency coefficient (Cronbach's alpha) reported for this instrument was 0.81, and test-retest reliability over a one-week interval yielded a coefficient of 0.83 (Dehghani et al., 2009). In a study by Akbari, Khanjani, Poursharifi, Mohammadalilu, and Azimi (2012), Cronbach's alpha was also 0.81 with a test-retest reliability of 0.83. In another study by Tardast (2014), validity was assessed through correlations with the Beck Depression Inventory (1961) at $r = 0.64$ and with the Spielberger State-Trait Anxiety Inventory (1970) at $r = 0.61$. The Cronbach's alpha in that study was 0.78. In the current study, the Cronbach's alpha for this questionnaire was 0.75.

This questionnaire was developed by Schutte et al. in 1998 based on Mayer and Salovey's (1990) mixed model of emotional intelligence. It consists of 32 descriptive statements such as, "When I am in a positive mood (e.g., happy), it is easier for me to solve problems." The scale includes three components: Emotion Regulation – items: 13, 31, 30, 27, 26, 23, 20, 17, 16, 14. Emotion Appraisal and Expression – items: 33, 29, 25, 22, 19, 18, 15, 11, 10, 9, 4, 3. Utilization of Emotion – items: 28, 24, 21, 12, 8, 7, 6, 5, 2, 1. Respondents rate their agreement using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Items 28, 5, and 33 are reverse-scored. Reliability refers to the degree to which an instrument consistently produces similar results under the same conditions. In this study, Cronbach's alpha was used to calculate reliability, which is appropriate for Likert-type instruments with multiple-choice responses. Cronbach's alpha ranges from 0 to 1; values closer to 1 indicate higher reliability. The overall Cronbach's alpha in this study was 0.85. The reliability of each subcomponent was as follows: emotion regulation ($\alpha = 0.63$), emotion appraisal and expression ($\alpha = 0.70$), and emotion utilization ($\alpha = 0.62$). In the current study, the total Cronbach's alpha for this questionnaire was 0.80.

This instrument was developed by Abdollahzadeh and Salar (2010) to provide a practical tool for recognizing cognitive distortions used in everyday life. It can be employed for educational, research, clinical, organizational, and policy-related purposes. The questionnaire is based on Albert Ellis's theory of cognitive distortions and assesses 10 types of distortions: all-or-nothing thinking, overgeneralization, mental filter, disqualifying the positive, jumping to conclusions, magnification, emotional reasoning, should statements, labeling, and personalization. The questionnaire contains 20 items, each scored on a 5-point Likert scale. Response options are scored from 1 (strongly agree) to 5 (strongly disagree), with item 1 reverse-scored. Higher scores indicate more rational thinking, while lower scores reflect greater use of cognitive distortions. According to Abdollahzadeh and Salar (2010), the scale demonstrates both internal consistency and face/content validity. It was standardized on an Iranian sample of 151 women and 146

men. The Cronbach's alpha coefficient in their original study was 0.80. In the current study, the Cronbach's alpha for this scale was 0.78.

2.3. Data Analysis

Descriptive statistics were used to describe demographic characteristics and variables of the study. Research hypotheses were tested using structural equation modeling (SEM). All statistical analyses were conducted using SPSS version 19 and AMOS version 20.

3. Findings and Results

The descriptive indicators of the variables used in the study—including minimum value, maximum value, mean, standard deviation, skewness, and kurtosis—are reported in Table 1.

Table 1

Descriptive Statistics of the Research Variables

Variable	Mean	Standard Deviation	Skewness	Kurtosis
Emotional Intelligence	79.93	14.92	-0.680	-0.474
Cognitive Distortion	60.45	16.81	-0.510	-0.798
Love Trauma	21.97	4.26	-0.255	-0.730

The table above presents the mean and standard deviation for the study variables. The skewness and kurtosis values were also calculated to assess the normality of the data. As shown, the skewness and kurtosis indices for all observed variables fall between -2 and +2, indicating that the scores do not significantly deviate from a normal distribution.

To examine the inferential findings of this study, Pearson correlation and structural equation modeling (SEM) were used. The normality assumption was tested using the skewness and kurtosis values shown in Table 2, which confirmed that the data were normally distributed. The correlation matrix of the research variables is presented below.

Table 2

Correlation Matrix of the Research Variables

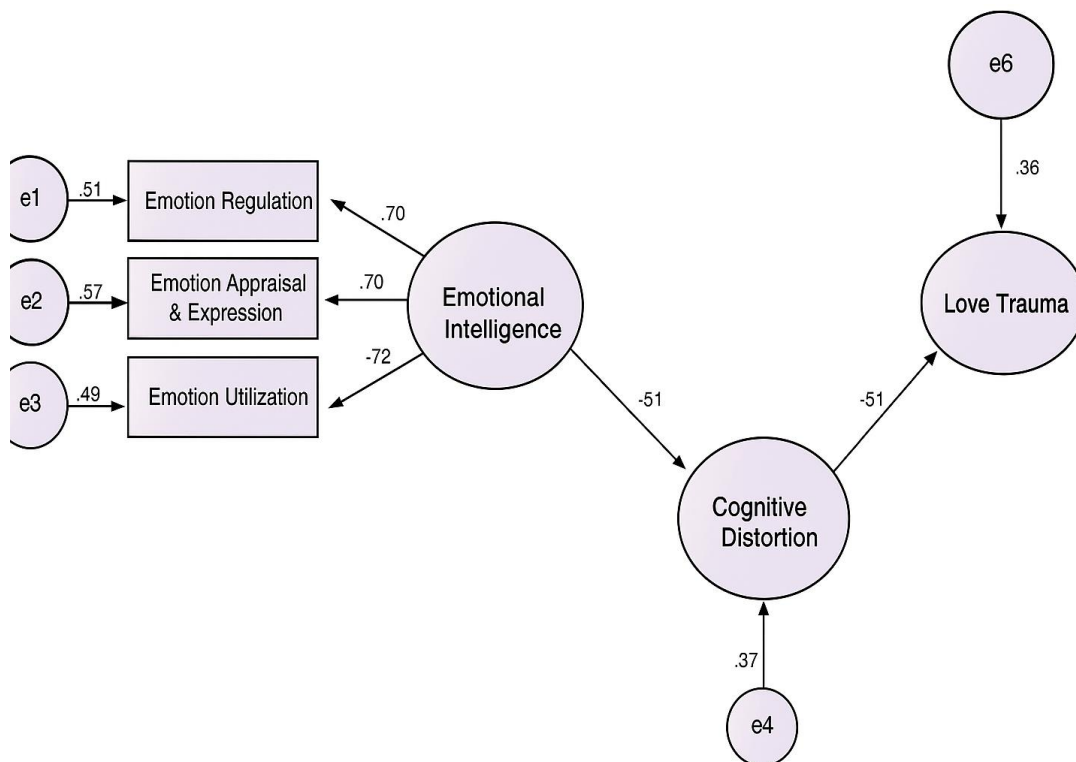
Variable	1	2	3	4	5
1. Love Trauma	1				
2. Emotion Regulation	-0.699**	1			
3. Appraisal & Expression	-0.702**	-0.655**	1		
4. Emotion Utilization	-0.504**	-0.506**	-0.499**	1	
5. Cognitive Distortion	-0.540**	-0.515**	-0.457**	-0.431**	1

As observed in the table above, there is a significant negative correlation between components of emotional intelligence—emotion regulation and appraisal/evaluation—and love trauma syndrome. Additionally, a significant negative correlation exists

between cognitive distortion and love trauma syndrome. The following section presents the measurement models of the study variables. To test the above hypothesis, structural equation modeling was conducted using AMOS software, and the results are presented below.

Figure 1

Direct Effect Model of Emotional Intelligence on Love Trauma Syndrome Mediated by Cognitive Distortion


Table 3

Indirect Effect of Emotional Intelligence on Love Trauma Syndrome Through Cognitive Distortion

Predictor Variable	Mediating Variable	Standardized Coefficient	Lower Bound (95% CI)	Upper Bound (95% CI)
Emotional Intelligence	Cognitive Distortion → Love Trauma	-0.321	-0.548	-0.210

The results presented in the table above indicate that emotional intelligence has an indirect effect on love trauma syndrome through the mediating role of cognitive distortion. The magnitude of this effect was -0.321. The significance of this effect was assessed using the bootstrap method. The confidence interval did not include zero, as both the upper and lower bounds were negative, confirming that this indirect relationship is statistically significant. Therefore, the research hypothesis stating that emotional intelligence affects love trauma syndrome indirectly through cognitive distortion is supported.

4. Discussion and Conclusion

The results of the present study offer compelling empirical support for the proposed structural model of *love trauma syndrome* (LTS) based on emotional intelligence with the mediating role of cognitive distortion in adolescent

girls experiencing emotional grief. The first major finding revealed a significant negative relationship between emotional intelligence and love trauma syndrome. Adolescents with higher levels of emotional intelligence reported significantly fewer symptoms of LTS, including emotional disorganization, cognitive rumination, and behavioral disturbances. This finding aligns with existing literature indicating that emotional intelligence, particularly competencies such as emotional regulation and appraisal, serve as protective factors against the psychological effects of emotional failure (Afzalur Rahim & Minors, 2003; Nikpoor & Rajabi, 2017). Adolescents equipped with the ability to identify, comprehend, and manage their emotional experiences were better able to mitigate the distress caused by romantic breakups, supporting the theoretical framework that situates emotional intelligence as a core determinant of

emotional resilience (Maher & Cordova, 2019; Rahim & Minors, 2003).

The second key finding demonstrated a significant negative relationship between emotional intelligence and cognitive distortion. This indicates that individuals with higher emotional intelligence are less prone to engaging in distorted thinking patterns such as catastrophizing, overgeneralization, or personalization in response to emotionally threatening events. These findings echo those of (Pour Shirazi & Nasrollahi, 2021), who established a similar inverse correlation between emotional intelligence and cognitive distortions in both clinical and non-clinical populations. The implication is that emotional intelligence may act not only as a self-regulatory mechanism for emotional states but also as a cognitive moderator that filters and corrects irrational appraisals of emotionally charged situations (Sibarani et al., 2024; Strohmeier et al., 2016). Adolescents with high emotional intelligence are likely to exhibit enhanced metacognitive awareness, which allows them to challenge their automatic thoughts and reframe distressing experiences more constructively.

Crucially, the study confirmed the mediating role of cognitive distortions in the relationship between emotional intelligence and love trauma syndrome. The indirect path analysis revealed that emotional intelligence reduces the prevalence of LTS symptoms by lowering the incidence of cognitive distortions. This finding substantiates prior theoretical and empirical propositions suggesting that cognitive distortion serves as a critical mechanism through which emotional vulnerabilities transform into psychopathological outcomes (Ouhmad et al., 2024; Ruiz Santos et al., 2024). Adolescents with deficient emotional regulation capacities may interpret romantic rejection through biased cognitive filters, amplifying their sense of helplessness, unworthiness, or abandonment. Conversely, those with higher emotional intelligence are better able to neutralize these distortions, reducing the psychological intensity of the traumatic experience. This mediational pathway highlights the need for interventions that address both emotional and cognitive domains concurrently.

The findings also reinforce the argument that adolescence, particularly among females, is a developmental window marked by heightened emotional sensitivity and cognitive reactivity to interpersonal losses (Field et al., 2020; Smith, 2025). Previous work by (Akbari et al., 2020) and (Ghazizadeh et al., 2020) demonstrated that romantic breakups during adolescence often evoke trauma-like symptoms due to the internalization of emotional rejection

and the absence of adaptive cognitive and emotional coping strategies. These symptoms often mirror those found in more severe trauma conditions such as PTSD, as suggested by (Watson et al., 2024), who reported that emotionally impactful losses can induce functional disruptions even in the absence of physical threat. These findings are in line with the current study's implication that love trauma syndrome is a valid clinical construct warranting focused psychological attention.

In addition, the present findings contribute to a growing body of research emphasizing the importance of the *emotional-cognitive interface* in understanding adolescent psychopathology. For instance, (Gori et al., 2024) emphasized that unbalanced family dynamics and unresolved childhood trauma often manifest in adolescents as dysregulated emotional responses and distorted relational schemas. These maladaptive patterns are often activated and intensified during emotionally significant events such as breakups. The integrative model proposed in this study supports such a view by operationalizing emotional intelligence and cognitive distortion as key dimensions in the psychological processing of loss. This model also resonates with the findings of (Quintard et al., 2021), who described the dissolution of self-other boundaries in romantic relationships as a destabilizing force, leading to identity confusion and emotional instability post-breakup.

Moreover, the finding that emotion regulation and emotional appraisal were the strongest predictors of reduced LTS symptoms lends further credence to the role of emotional intelligence as a therapeutic target. Emotion regulation, in particular, has been widely recognized as a buffer against emotional disorders, while emotional appraisal affects how events are initially interpreted and later processed (Afzalur Rahim & Minors, 2003; Maher & Cordova, 2019). These results are consistent with the work of (Sayadi Qasbeh & Moqtader, 2021), who found that emotional training interventions significantly enhanced students' academic motivation and reduced maladaptive behavioral tendencies. The implication here is that strengthening the core components of emotional intelligence can serve not only as a protective mechanism against emotional trauma but also as a preventive measure for broader academic and social challenges.

The indirect effect of emotional intelligence on love trauma syndrome, as mediated by cognitive distortion, also invites consideration of clinical applications. Therapeutic approaches such as cognitive-behavioral therapy (CBT) and emotion-focused therapy (EFT), which aim to recalibrate

maladaptive cognitions and enhance emotional self-awareness, may be particularly effective for adolescents exhibiting signs of LTS (Abounajmi, 2018; Tosuli et al., 2018). CBT protocols that target specific cognitive distortions such as all-or-nothing thinking or catastrophizing can help adolescents reappraise the meaning of breakup experiences, while EFT interventions can guide them in recognizing, expressing, and regulating painful emotions more adaptively. The integrated model tested in this study offers a theoretical rationale for combining these two therapeutic targets into a single intervention framework.

Furthermore, the study underscores the socio-cultural factors that might intensify or mitigate the experience of love trauma in adolescent girls. Cultural attitudes toward romantic relationships, emotional expression, and gender norms may influence both the occurrence of romantic relationships and the psychological response to their dissolution. In traditional or collectivist cultures, where emotional restraint and relational loyalty are emphasized, the psychological burden of love trauma may be intensified by internalized guilt, shame, or fear of social repercussions (Akhavi Samarin & Ahmadi, 2020; Ouhmad et al., 2024). These socio-cultural pressures may inhibit adolescents from seeking help, further exacerbating their emotional distress. Therefore, understanding the cultural context of adolescent emotional experiences is crucial for tailoring effective interventions.

Finally, the confirmation of the structural model in this study has important implications for future research and practice. By empirically validating the indirect influence of emotional intelligence on love trauma syndrome through cognitive distortions, the study contributes to a more nuanced understanding of adolescent emotional suffering and its psychological mechanisms. It also provides a testable framework for designing school-based, culturally sensitive, and gender-responsive interventions aimed at reducing emotional and cognitive vulnerabilities in adolescent populations. The findings emphasize that both preventive and remedial approaches must address the dynamic interplay between emotional awareness and cognitive processing in promoting psychological well-being.

Despite its valuable contributions, this study is not without limitations. First, the study utilized a cross-sectional design, which limits the ability to infer causality among emotional intelligence, cognitive distortions, and love trauma syndrome. Longitudinal studies would provide a more robust framework for tracking changes in these variables over time and confirming the directionality of the

observed relationships. Second, the sample was composed exclusively of adolescent girls from a single urban area, which may limit the generalizability of the findings to other age groups, genders, or cultural settings. Third, the reliance on self-report measures raises the potential for response biases, including social desirability and recall inaccuracies. Finally, while the model included key variables of interest, it did not account for other potentially influential factors such as family dynamics, attachment styles, or peer support systems.

Future studies could build upon these findings by adopting longitudinal or experimental designs to assess causal relationships and intervention efficacy. Expanding the sample to include male adolescents or adolescents from different cultural and socioeconomic backgrounds would provide a more comprehensive understanding of the applicability of the model. Additionally, future research could explore the moderating effects of other psychological constructs such as resilience, self-esteem, or attachment security on the pathway from emotional intelligence to love trauma syndrome. Incorporating qualitative methods, such as in-depth interviews or narrative analyses, could also enrich our understanding of the lived experiences of adolescents undergoing romantic distress. Furthermore, studies should explore how digital romantic interactions and online breakups influence the dynamics of love trauma, especially given the increasing role of social media in adolescent relationships.

Given the demonstrated roles of emotional intelligence and cognitive distortions in the development of love trauma syndrome, mental health professionals should consider integrated intervention approaches that target both domains simultaneously. School counselors and psychologists can implement emotional literacy and emotion regulation programs to equip students with the skills to manage emotional upheaval constructively. In parallel, psychoeducational modules focused on cognitive restructuring can help adolescents identify and correct irrational thought patterns that exacerbate emotional pain. Group therapy settings may also provide a supportive space for sharing experiences and developing adaptive coping strategies. Finally, preventive efforts must include parental and teacher education initiatives to foster emotionally supportive environments that validate adolescent emotions while guiding them through their psychological challenges.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

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

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the study and participated in the research with informed consent.

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