

The Effectiveness of Mentalization-Based Treatment on Alexithymia and Internalizing Behavioral Problems in Adolescents of Divorce

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Article Info

Article type:

Original Research

How to cite this article:

Youzbashi, M., Ghorban Shiroudi, S., & Jadidi, M. (2024). The Effectiveness of Mentalization-Based Treatment on Alexithymia and Internalizing Behavioral Problems in Adolescents of Divorce. *Journal of Adolescent and Youth Psychological Studies*, 5(8), 105-114.
<http://doi.org/10.61838/kman.jayps.5.8.12>



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ABSTRACT

Objective: The present study aimed to investigate the effectiveness of mentalization-based treatment on alexithymia and internalizing behavioral problems in adolescents of divorce.

Methods and Materials: This applied research was quasi-experimental with a pretest-posttest design, a control group, and a two-month follow-up period. The statistical population consisted of adolescents of divorce in the first secondary school stage of Education District 14 in Tehran during the academic year 2022-2023. In this study, 36 adolescents of divorce were selected using purposive sampling and randomly assigned to experimental (19 participants) and control (17 participants) groups. The experimental group received mentalization-based treatment over eight weeks in 8 sessions of 90 minutes each. The questionnaires used in this study included the Alexithymia Questionnaire (AQ) and the Child and Adolescent Behavior Inventory (CABI). The data obtained from the research were analyzed using mixed analysis of variance with SPSS23 statistical software.

Findings: The results indicated that mentalization-based treatment had a significant impact on alexithymia ($P < 0.0001$; $\eta^2 = 0.61$; $F = 52.83$) and internalizing behavioral problems ($P < 0.0001$; $\eta^2 = 0.59$; $F = 48.48$) in adolescents of divorce.

Conclusion: Based on the research findings, it can be concluded that mentalization-based treatment, by employing thoughts, emotions, and behaviors associated with mindfulness, can be used as an effective method to reduce alexithymia and internalizing behavioral problems in adolescents of divorce.

Keywords: mentalization-based treatment, alexithymia, internalizing behavioral problems, adolescents of divorce.

1. Introduction

Divorce is considered one of the most significant phenomena of human life, which disrupts the psychological balance not only of the two individuals

involved but also of their children, relatives, friends, and close ones (Laletas & Khasin, 2021). In Iran, the divorce rate has been on the rise over the past decade. In 2021, one in three marriages ended in divorce, representing a nearly two percent increase compared to 2020. Over the past ten years,

the divorce rate has been 28%. Most divorces in Iran occur within the first five to ten years of marriage (Zloghadrnia et al., 2021). Among the primary victims of the consequences of divorce are the children (Crespin-Boucaud & Hotte, 2021). The inability of children and adolescents to adapt to their parents' divorce can have detrimental effects on their psychological functioning and even their physical condition (Reisi Sarteshneizy, 2023). Although parental divorce does not always result in emotional and behavioral problems in children (Zakariazadeh Khatir et al., 2022), the negative consequences of divorce certainly outweigh its positive aspects (Sorek, 2020). Therefore, divorce inflicts psychological harm not only on the couples but also jeopardizes the psychological well-being of their children (Bayati Eshkaftaki et al., 2022). According to research by Khalid et al. (2018), adverse developmental periods due to divorce are significantly associated with emotional deficiencies and other psychological disorders (Khalid et al., 2018). This is because parental divorce causes significant changes and reorganizations within the family, which affect the child's adaptation over time (Bastais et al., 2018). Children of divorce face intellectual, emotional, identity, psychological, social, and emotional challenges that hinder their proper integration into society (Stapp et al., 2020).

Among the vulnerable emotional-psychological processes in children of divorce are their emotional processes and emotional self-regulation (Shimkowski & Ledbetter, 2018). For instance, research by Zolghadrnia et al. (2021) showed that divorce can lead to severe damage in emotional processing, management, and expression (Zloghadrnia et al., 2021), which may be associated with alexithymia (Bayati Eshkaftaki et al., 2022). Alexithymia includes difficulties in identifying feelings, difficulties in describing feelings, and externally oriented thinking (Lyvers et al., 2019). These characteristics, which constitute the construct of alexithymia, indicate deficiencies in cognitive processing and emotion regulation (Chalah & Ayache, 2017). It appears that in this state, the individual cannot express their feelings because they are not aware of their emotional state. Consequently, tension arises within the individual, making them more vulnerable to psychological and emotional harm (Kenangil et al., 2020). Over the past two decades, many studies have shown that alexithymia is a risk factor for a wide range of physical illnesses and psychiatric disorders (Davydov, 2017).

The issues resulting from divorce can extend beyond emotional and psychological processing and lead to behavioral problems in children. One common behavioral

problem among children of divorce is internalizing behavioral problems (Hoseini Yazdi et al., 2021). Internalizing behavior problems are intrapersonal in nature and manifest as withdrawal from social interactions, inhibition, anxiety, and depression. This disorder, rather than causing distress to others, targets the emotions and feelings of the child or adolescent, causing them distress (Finch et al., 2023). Additionally, internalizing problems are accompanied by excessive silence, hopelessness, and somatic complaints, making the adolescent feel inferior, shy, fearful, and sad (Chi & Cui, 2020).

To date, few therapeutic methods have been employed for children of divorce, with most research focusing on the divorcing or divorced couples themselves. Given the absence of one parent and their educational and developmental role in the children's developmental process, one effective method could be mentalization-based treatment (MBT). Its efficacy has been confirmed in prior studies (Ali Sari Nasirlo et al., 2024; Basharpour & Einy, 2020; Bateman & Fonagy, 2016; De Oliveira et al., 2017; Haj Mohamad Hoseini et al., 2021; Jørgensen et al., 2021; Lavender et al., 2022; Malberg, 2021; Mohammadi et al., 2020; Polnay et al., 2021; Simonsen et al., 2022; Steinmair et al., 2021). Mentalization-based treatment, a branch of psychodynamic psychotherapy, was first developed and introduced by Bateman and Fonagy (2016). This treatment encompasses two main concepts: Bowlby's attachment theory and mentalization. Mentalization capacity, referred to as a reflective function, can be conceptualized as the ability to perceive one's own and others' mental states (Bateman & Fonagy, 2016). This process is achieved through the formation of interpersonal relationships during childhood, particularly within the attachment cycle, and is considered the basis of overt behaviors (Simonsen et al., 2022). Lieberman (2017), an influential theorist in this area, identified four dimensions of mentalization: automatic vs. controlled mentalization, self vs. others mentalization, internal vs. external attributes mentalization, and cognitive vs. emotional mentalization (Lieberman, 2007). The goal of this treatment is to shape the capacity for mentalization through therapeutic relationships and to expand the client's ability to recognize the thoughts, feelings, and emotions they experience (De Oliveira et al., 2017).

The necessity of this research lies in the fact that children from divorced families exhibit more emotional, behavioral, and academic problems and have lower psychological well-being compared to children from intact families. They also achieve fewer academic successes, display more

psychological maladjustments, and have lower self-esteem and more social and emotional problems. As a result, these children rank lower socially, emotionally, and academically compared to their peers. Considering the impact of divorce on the psychological, communicational, social, emotional, and academic components of children, this research aims to open a new horizon in treating the psychological components of adolescents with divorced parents. This process becomes even more significant when these children of divorce are in their adolescent developmental stage. Since the psychological health of this significant population plays a crucial role in the health and illness of tomorrow's society and future generations, it is essential to pay more attention to their psychological and physical health and take significant steps in preventing and treating their psychological and behavioral disorders. Given the discussed topics and research on the effectiveness of mentalization-based treatment and the existing research gap due to the lack of similar studies, the aim of this study is to investigate the effectiveness of mentalization-based treatment on alexithymia and internalizing behavioral problems in adolescents of divorce. The research hypotheses were as follows:

- Mentalization-based treatment is effective on alexithymia in adolescents of divorce.
- Mentalization-based treatment is effective on internalizing behavioral problems in adolescents of divorce.

2. Methods and Materials

2.1. Study Design and Participants

The present applied research was a quasi-experimental study with a pretest-posttest design, a control group, and a two-month follow-up period. The statistical population consisted of adolescents of divorce in the first secondary school stage of Education District 14 in Tehran during the academic year 2022-2023. From the statistical population, 40 adolescent girls of divorce were selected using purposive sampling based on inclusion and exclusion criteria and were randomly assigned to two groups: experimental and control (20 adolescent girls of divorce in the experimental group and 20 adolescent girls of divorce in the control group). Adolescent girls of divorce were identified by visiting 12 first secondary school girls' schools in Education District 14 in Tehran. These individuals were then screened using the Alexithymia Questionnaire and the Internalizing Behavioral Problems Questionnaire. Adolescents could participate in

the study if they scored above 63 on internalizing behavioral problems and above 40 on the alexithymia questionnaire. A total of 40 eligible adolescent girls of divorce were selected and randomly assigned to the experimental and control groups (20 adolescent girls of divorce in the experimental group and 20 adolescent girls of divorce in the control group). The adolescents in the experimental group received mentalization-based treatment over eight weeks (eight 90-minute sessions). The control group received no intervention during the study and awaited interventions. Post-tests were conducted after the sessions, and a follow-up phase was carried out two months later to ensure the stability of the results. After the intervention began, 1 participant from the experimental group and 3 participants from the control group withdrew from the study. Thus, 36 adolescent girls remained in the study (19 in the experimental group and 17 in the control group). Inclusion criteria included having divorced parents, female gender, being 13-16 years old (attending seventh, eighth, or ninth grade), scoring above 63 on internalizing behavioral problems, scoring above 40 on the alexithymia questionnaire, at least one year since parents' divorce, the consent of the adolescent and parent to participate, no acute or chronic physical or psychological illness (according to their health and counseling records), and not receiving simultaneous psychological interventions. Exclusion criteria included having more than two absences, non-cooperation, not completing the assigned tasks in class, and unwillingness to continue participating in the study. Demographic findings showed that the mean age in the experimental group was 14.74 ± 1.74 years and in the control group was 15.12 ± 2.01 years. Both groups had educational levels ranging from seventh to ninth grade, with eighth grade having the highest frequency in both the experimental (9 participants, 47.36%) and control (7 participants, 41.17%) groups.

2.2. Measures

2.2.1. Internalized Behavioral Problem

In this study, the Child and Adolescent Behavior Inventory by Achenbach and Rescorla was used to assess internalizing behavioral problems. This questionnaire, developed by Achenbach and Rescorla (2001), measures emotional and behavioral problems in children and adolescents aged 8 to 16. It consists of two parts: the first part assesses overall competence in three scales (activities, social scale, and school) with 13 items, and the second part assesses emotional and behavioral problems with 113 items.

Responses are given on a Likert scale with three options: not true (score 0), sometimes true (score 1), and often true (score 2). The internalizing behavior problems score is derived from the withdrawal, somatic complaints, and anxiety/depression subscales. The range of internalizing behavior problems scores is 0 to 240, with a borderline range score from 60 to 63, and scores above 63 are considered clinical (Achenbach, 2001). Glaser (2011) reported test-retest reliability and internal consistency for the inventory as 0.94 and 0.97, internalizing behavior problems as 0.92 and 0.94, and externalizing behavior problems as 0.91 and 0.90, respectively. Nakayama et al. (2009) reported a Cronbach's alpha of 0.81 for the inventory. Golpaigani et al. (2018) reported Cronbach's alpha reliability of 0.88 for the inventory, 0.92 for externalizing behavior problems, and 0.90 for internalizing behavior problems. They also reported good content validity for the questionnaire (Hoseini Yazdi et al., 2021; Sabaghi & Mahdi Zadegan, 2020). In this study, the reliability of the internalizing behavior problems section of the questionnaire was calculated using Cronbach's alpha coefficient as 0.88.

2.2.2. *Alexithymia*

The Alexithymia Questionnaire was developed by Bagby, Parker, and Taylor (1994) and is a self-assessment questionnaire with 20 items and three subscales: difficulty identifying feelings (7 items), difficulty describing feelings (5 items), and externally oriented thinking (8 items). Scoring is based on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The total score range is 20 to 100, with higher scores indicating greater alexithymia. Items 4, 5, 10, 18, and 19 are reverse-scored. Higher scores on the questionnaire indicate a higher degree of alexithymia. Bagby, Parker, and Taylor (1994) reported content validity of 0.91 and Cronbach's alpha reliability of 0.89 for the questionnaire. In a study by Sabaghi and Mahdizadegan (2019), Cronbach's alpha reliability was 0.77, and they reported good construct validity at 0.86 (Sabaghi & Mahdi Zadegan, 2020). In this study, the reliability of the questionnaire was calculated using Cronbach's alpha coefficient as 0.75.

2.3. *Intervention*

2.3.1. *Mentalization-Based Therapy*

Session 1: The first session involves explaining the structure, goals, and course of the treatment, emphasizing

the commitment required from the participants. The session includes problem identification, clarification, and assessing the severity of self-harm symptoms. It examines the capacity for mentalization by exploring automatic thoughts, irritability, pressure, and stress. The strengths and vulnerabilities in mentalization, as well as emotional and interpersonal contexts where mentalization problems manifest, are also discussed (Basharpoor & Einy, 2020; Bateman & Fonagy, 2016; De Oliveira et al., 2017; Haj Mohamad Hoseini et al., 2021; Malberg, 2021; Mohammadi et al., 2020; Pischiutta et al., 2023; Polnay et al., 2021; Simonsen et al., 2022; Steinmair et al., 2021).

Session 2: This session focuses on reconstruction, mediation, hope, and participation. It includes training in mentalization skills and attitudes such as curiosity, openness, mediation, and hope. The session aims to enhance flexibility and stress coping mechanisms through these skills.

Session 3: The third session targets modifying self-harm behaviors by teaching coping skills for handling conflicts and vulnerable feelings. It addresses combating automatic thoughts and practicing adaptive management of uncontrollable emotions.

Session 4: The goal is to maintain and enhance the therapeutic alliance, cooperation, and mentalization within the individual, family, and group. The session examines family functioning, identifies stressors, and assesses the family's mentalization capacity related to emotional states. It also includes exercises to strengthen intimacy, trust, empathy, support, and understanding within the group and family.

Session 5: This session deals with managing mentalization failures and transference. It includes exercises for understanding one's own and others' thoughts and feelings, recognizing and addressing signs of anxiety and depression. The session explores the client's experience in current relationships with the therapist, identifying related emotions and interactions, and involves the therapist in helping to create an alternative perspective based on the therapeutic relationship.

Session 6: The sixth session aims at integrating personal, family, and group perspectives. It focuses on enhancing the capacity for open communication and receptiveness to others' viewpoints, fostering interest and respect for others' thoughts and feelings. The session encourages exploration without preconceived notions or biases about others' thoughts and emotions, and awareness of the impact of one's thoughts, feelings, and actions on others.

Session 7: This session practices mentalization by challenging emotional and interpersonal situations, fostering successful mentalization by engaging the mind in challenging scenarios. It aims to balance different aspects of the mind, such as automatic versus controlled, emotion versus cognition, and self versus others. It also works on enhancing family and interpersonal support based on mentalization and emotional closeness.

Session 8: The final session focuses on planning for the maintenance of mentalization and stimulating rehabilitation and change. It aims to reinforce psychological capacities to utilize mentalization, fostering a rich and effective life. The session enhances advanced interpretive and listening skills and promotes a belief in the possibility of change.

2.4. Data analysis

To analyze the qualitative data obtained from interviews, thematic analysis was employed using MAXQDA software (version 2020). For evaluating the content validity of the intervention package in the quantitative part of the study, the Content Validity Ratio (CVR) and Content Validity Index (CVI) were used at both the item (session) level (I-CVI) and the overall intervention package level (S-CVI).

3. Findings and Results

The mean and standard deviation of alexithymia and internalizing behavioral problems in the pre-test, post-test, and follow-up stages for the experimental and control groups are presented in [Table 1](#).

Table 1

Mean and Standard Deviation of Alexithymia and Internalizing Behavioral Problems in the Experimental and Control Groups

Variables	Groups	Pre-test Mean (SD)	Post-test Mean (SD)	Follow-up Mean (SD)
Total Alexithymia Score	Experimental	60.10 (5.87)	50.26 (8.56)	52.00 (7.49)
	Control	57.05 (6.15)	58.82 (6.49)	58.82 (5.71)
Subscales of Alexithymia				
Difficulty Identifying Feelings	Experimental	24.23 (4.23)	20.76 (3.78)	21.23 (4.55)
	Control	23.31 (4.11)	23.93 (4.02)	23.90 (4.23)
Difficulty Describing Feelings	Experimental	21.65 (3.49)	17.61 (3.01)	18.51 (2.79)
	Control	20.32 (3.56)	20.94 (3.66)	20.98 (3.32)
Externally Oriented Thinking	Experimental	14.22 (2.78)	11.89 (2.24)	12.26 (2.41)
	Control	13.42 (2.23)	13.96 (2.63)	13.94 (2.55)
Internalizing Behavioral Problems	Experimental	69.21 (5.13)	60.68 (9.03)	61.73 (8.09)
	Control	69.58 (7.42)	70.41 (7.75)	70.35 (7.53)

The descriptive results in [Table 1](#) indicate that the levels of alexithymia, difficulty identifying feelings, difficulty describing feelings, externally oriented thinking, and internalizing behavioral problems decreased in the experimental group compared to the control group. The significance of these changes will be examined using inferential statistics. Before presenting the results of the mixed analysis of variance, the assumptions for parametric tests were assessed. The Shapiro-Wilk test results indicated that the assumption of normal distribution was met for the variables of alexithymia, difficulty identifying feelings, difficulty describing feelings, externally oriented thinking,

and internalizing behavioral problems in both the experimental and control groups at the pre-test, post-test, and follow-up stages ($p > .05$). The assumption of homogeneity of variances was also assessed using Levene's test, which showed non-significant results, indicating that the assumption was met for the variables ($p > .05$). Additionally, the results of the t-test indicated no significant differences between the pre-test scores of the experimental and control groups for the dependent variables ($p > .05$). Mauchly's test results also showed that the assumption of sphericity was met for the variables ($p > .05$).

Table 2

Mixed Analysis of Variance for the Within-Group and Between-Group Effects

Variable	Source	Sum of Squares	df	Mean Square	F	p	Eta Squared	Power
Alexithymia	Time	324.38	2	162.19	25.29	.0001	.43	1.00
	Group Membership	455.23	1	455.23	23.25	.0001	.42	1.00
	Time × Group	703.27	2	351.63	54.83	.0001	.61	1.00
	Error	436.04	68	6.41				
Difficulty Identifying Feelings	Time	32.23	2	16.11	17.55	.0001	.34	1.00
	Group Membership	128.71	1	128.71	20.22	.0001	.36	1.00
	Time × Group	77.04	2	38.52	41.95	.0001	.55	1.00
	Error	62.43	68	.92				
Difficulty Describing Feelings	Time	13.93	2	6.96	10.81	.0001	.24	.99
	Group Membership	189.63	1	189.63	17.21	.0001	.34	.98
	Time × Group	42.04	2	21.02	32.61	.0001	.49	1.00
	Error	43.82	68	.64				
Externally Oriented Thinking	Time	57.51	2	28.75	19.31	.0001	.36	1.00
	Group Membership	79.75	1	79.75	20.22	.0001	.37	1.00
	Time × Group	116.25	2	58.13	39.04	.0001	.53	1.00
	Error	101.24	68	1.49				
Internalizing Behavioral Problems	Time	315.01	2	157.51	32.62	.0001	.49	1.00
	Group Membership	1048.22	1	1048.22	26.27	.0001	.44	1.00
	Time × Group	468.13	2	234.06	48.48	.0001	.59	1.00
	Error	328.29	68	4.82				

The mixed analysis of variance results in [Table 2](#) indicate that the time factor significantly impacted alexithymia, difficulty identifying feelings, difficulty describing feelings, externally oriented thinking, and internalizing behavioral problems scores in adolescents of divorce, explaining 43%, 34%, 24%, 36%, and 49% of the variance, respectively. Additionally, the group membership factor (mentalization-based treatment) had a significant effect on these variables,

explaining 42%, 36%, 34%, 37%, and 44% of the variance, respectively. Moreover, the interaction between time and group membership also significantly impacted these variables, explaining 61%, 55%, 49%, 53%, and 59% of the variance, respectively. The statistical power of 100% indicates high statistical accuracy and adequate sample size for evaluating the interaction effects.

Table 3

Pairwise Comparison of Mean Scores of Alexithymia and Internalizing Behavioral Problems by Evaluation Stage

Variable	Baseline Stage (Mean)	Comparison Stage (Mean)	Mean Difference	Standard Error	Significance
Alexithymia	Pre-test	Post-test	4.04	.74	.0001
		Follow-up	3.17	.66	.001
	Post-test	Pre-test	-4.04	.74	.0001
		Follow-up	-.86	.28	.11
Difficulty Identifying Feelings	Pre-test	Post-test	1.33	.28	.0001
		Follow-up	.74	.20	.003
	Post-test	Pre-test	-1.33	.28	.0001
		Follow-up	-.59	.17	.10
Difficulty Describing Feelings	Pre-test	Post-test	.83	.22	.002
		Follow-up	.66	.20	.009
	Post-test	Pre-test	-.83	.22	.002
		Follow-up	-.17	.12	.48
Externally Oriented Thinking	Pre-test	Post-test	1.62	.33	.0001
		Follow-up	1.47	.33	.001
	Post-test	Pre-test	-1.62	.33	.0001
		Follow-up	-.15	.17	.77
Internalizing Behavioral Problems	Pre-test	Post-test	3.85	.67	.0001
		Follow-up	3.35	.56	.0001
	Post-test	Pre-test	-3.85	.67	.0001
		Follow-up	-.49	.17	.14

The results in [Table 3](#) show significant differences between the mean scores of the pre-test and post-test stages, as well as the pre-test and follow-up stages, for alexithymia, difficulty identifying feelings, difficulty describing feelings, externally oriented thinking, and internalizing behavioral problems. This indicates that mentalization-based treatment significantly changed the post-test and follow-up scores compared to the pre-test scores. Another finding is that there were no significant differences between the post-test and follow-up scores for these variables. This suggests that the significant changes observed in the post-test scores were maintained during the follow-up period.

4. Discussion and Conclusion

The aim of this study was to examine the effect of mentalization-based treatment on alexithymia and internalizing behavioral problems in adolescents of divorce. The first finding of the study showed that mentalization-based treatment significantly impacted alexithymia and its subscales (difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking) in adolescents of divorce. This finding aligns with previous research. For instance, Basharpour and Einy (2020) reported that mentalization-based treatment reduced emotional dysregulation and impulsivity in veterans with PTSD ([Basharpour & Einy, 2020](#)). Additionally, Pischiutta et al. (2023) demonstrated that mentalization-based treatment improved emotional skills in adolescents with disorders ([Pischiutta et al., 2023](#)). Moreover, Jorgensen et al. (2021) showed that mentalization-based treatment improved emotional processing in adolescents with borderline personality disorder ([Jørgensen et al., 2021](#)). No contradictory research was found regarding the efficacy of mentalization-based treatment on psychological, cognitive, behavioral, and social components in adolescents.

An explanation for the effect of mentalization-based treatment on alexithymia in adolescents of divorce could be that mentalization-based treatment offers a stance of not-knowing, which forms the basis for exploring the individual's perspective. Empathic validation and creating a shared emotional platform between the patient and therapist increase the patient's experience of not being alone, indicating that another mind can help identify mental states and enhance dynamism ([Bateman & Fonagy, 2016](#)). Thus, mentalization-based treatment can reduce alienation. The focus on emotion and interpersonal interaction during sessions and over time provides a context in which

adolescents of divorce can establish more adaptive and greater interpersonal interactions with family members and friends, leading to greater emotional expression and reducing alexithymia. Additionally, mentalization-based treatment enables trained individuals to achieve successful mentalization in engaging the mind in challenging situations ([Khalid et al., 2018](#)). This ability teaches adolescents of divorce not to avoid challenging situations but to face them with resilience and psychological endurance. Enhanced internal strength and coping abilities are associated with higher perception of intrapersonal and interpersonal skills. Another explanation is the role of mentalization-based treatment in strengthening family and interpersonal support and creating emotional closeness. This treatment can enhance the mentalization capacity, emotional closeness, and quality of communication within the family, leading adolescents of divorce to perceive greater emotional proximity with family members and share their emotional processing with them. Emotional expression naturally reduces alexithymia in adolescents of divorce.

The second finding of this study showed that mentalization-based treatment effectively reduced internalizing behavioral problems in adolescents of divorce. This finding aligns with previous research. For example, Mohammadi et al. (2020) found that mentalization-based treatment positively affected health-promoting behaviors in individuals with coronary heart disease ([Mohammadi et al., 2020](#)). Haj Mohamad Hoseini et al. (2022) reported that mentalization-based treatment reduced borderline personality disorder symptoms ([Haj Mohamad Hoseini et al., 2021](#)). Lavander, Waters, and Hobson (2023) demonstrated that parental mentalization-based treatment reduced children's behavioral problems ([Lavander et al., 2022](#)). The findings also align with Steinmair et al. (2021), who showed the efficacy of mentalization-based treatment on improving mental reading performance ([Steinmair et al., 2021](#)), and Malberg (2021), who reported the efficacy of mentalization-based treatment on improving quality of life and mental health in parents of children with autism ([Malberg, 2021](#)). No contradictory research was found regarding the efficacy of mentalization-based treatment on psychological, cognitive, behavioral, and social components in adolescents.

An explanation for the effect of mentalization-based treatment on internalizing behavioral problems in adolescents of divorce is that these adolescents experience psychological, emotional, and social distress due to parental divorce and the associated social stigma, leading to

emotional and psychological dysfunction that hinders constructive emotional and behavioral processing (Shimkowski & Ledbetter, 2018). Therefore, mentalization-based treatment enhances efficient emotional and psychological processing through mental seeking and mindful activities. This process during treatment allows adolescents of divorce to better understand their emotional and behavioral issues and open their minds to understanding distressing feelings that lead to behavioral problems. Consequently, distressing emotions resulting from parental divorce no longer affect adolescents as before, reducing the foundation for behavioral problems. Additionally, mentalization-based treatment increases the psychological and emotional flexibility of adolescents of divorce during its sessions (especially session two). Increased psychological and behavioral flexibility prevents adolescents from falling into negative emotions and enables them to exhibit measured emotional, psychological, and behavioral responses during negative emotional experiences, reducing the incidence of internalizing behavioral problems. Furthermore, in session three, adolescents of divorce are taught to manage uncontrollable emotions adaptively. This training allows them to manage negative emotions that lead to internalizing behavioral problems and prevent these emotions from interfering with their functioning, thereby reducing internalizing behavioral problems.

5. Limitations & Suggestions

Like other studies, this research has limitations. The limited population to female adolescents of divorce in the first secondary school stage in District 14 of Tehran is the first limitation. Various individual, physiological, social, and family variables can affect alexithymia and internalizing behavioral problems in adolescents of divorce, which this study could not deeply examine or control due to time constraints. Additionally, the use of non-random sampling is a limitation. Therefore, to increase the generalizability of the results, it is suggested that future research include different grades, genders, cities, and cultures, controlling for the mentioned factors and using random sampling methods. Given the efficacy of mentalization-based treatment on alexithymia and internalizing behavioral problems in adolescents of divorce, it is recommended that decision-makers in the education system activate counselors and specialists in psychological counseling and service centers to use mentalization-based treatment to reduce alexithymia and internalizing behavioral problems in adolescents of

divorce. Reducing internalizing behavioral problems can improve self-perception in adolescent girls of divorce and enhance their performance in individual, social, and academic areas.

Acknowledgments

This article is derived from the doctoral dissertation of the first author at the Islamic Azad University, North Tehran Branch. We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study. We extend our gratitude to all the officials of Education District 14 of Tehran, school principals, and the families of the adolescents who participated in this research for their full cooperation.

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.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors contributed equally.

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