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Research Paper

Attachment-based Therapy on Emotional Autonomy, Emotion Regulation and Rumination in Adolescents With Depression Symptoms

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ABSTRACT

Background: Adolescence is an important period in the social and psychological development of human beings. Depression is a major problem that now affects many adolescents.

Objectives: The present study aimed to investigate the effects of attachment-based therapy on emotional autonomy, emotion regulation, and rumination in adolescents with depression symptoms.

Materials & Methods: This quasi-experimental research adopted a pre-test-post-test control group design. Purposive sampling was employed to select 30 adolescents with depression symptoms as the research sample. They were then assigned randomly to an experimental and control group (n=15 per group). The experimental group received an intervention including twelve 45-minute sessions. All participants completed the emotional autonomy scale (EAS), the emotion regulation questionnaire (ERQ), and the rumination response scale (RRS) at the pre-test, post-test, and follow-up stages. The repeated measures ANOVA was used for data analysis.

Results: According to the results, there was a significant difference between the experimental and control groups in the mean scores of emotional autonomy, emotion regulation, and rumination ($P<0.001$). The results also indicated that attachment-based therapy significantly improved emotional autonomy, emotion regulation strategies (e.g. reappraisal and suppression) and rumination at the post-test and follow-up stages ($P<0.001$).

Conclusion: Attachment-based therapy should be employed as a therapeutic priority for improving emotional autonomy and emotion regulation strategies (e.g. reappraisal and suppression) and alleviating rumination in adolescents with depression symptoms.

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Introduction

Adolescence is an important period in the social and psychological development of humans. In this period, individuals mainly need emotion-reason balance, self-value, self-awareness, emotional autonomy from their families and surroundings, the establishment of positive relationships with others, and learning the social skills of friendship [1, 2]. The literature review indicates that, despite all efforts made so far, depression is still the leading cause of disability in people aged 15–44 years [3], and it is expected to be the leading cause of disease burden by 2030 [4]. Depression is not simply a matter of biology but is caused by a combination of social forces and psychological and biological processes [5]. Mental disorders such as stress, fear of people (anthropophobia), social maladjustment, lack of emotional autonomy, depression, and anxiety can all affect a person's capabilities and, ultimately, destiny [6].

Depression, social maladjustment, and emotional problems should be addressed during adolescence, particularly among students, to help them successfully navigate this sensitive period of life [7]. In this regard, emotional autonomy, i.e. the ability to remain largely unaffected by external factors, requires a healthy sense of self-esteem, self-confidence, perceived self-efficacy, spontaneity, and responsibility. In other words, emotional autonomy establishes a balance between emotional dependence and the lack of conflict [8]. Autonomy is a key characteristic that marks the transition from childhood to adolescence [9]. One's attachment to their parents is influenced by several aspects of their developing sense of autonomy during adolescence, which can directly affect the degree and nature of true autonomy. "Value-cognitive plan of oneself in the future" is not the only aspect of true autonomy. Other aspects include the use of active tools, strategies, and mentalization to deal with the annoying aspects of adult life and age-related tasks [10]. Failure in any of these challenges not only reduces the satisfaction of adolescents with their lives but also predisposes them to depression [11].

Emotion regulation is a means by which we can influence the emotions of ourselves and those of others. Emotion regulation strategies are divided into healthy and unhealthy categories, which produce positive and negative results, respectively [12]. The ability to track, assess, comprehend, and modify emotional responses in a way that promotes regular functioning is referred to as emotion regulation. Essentially, it involves a process through which individuals control their emotions, either consciously or unconsciously, by altering their experiences or the conditions triggering the emotions [13]. In this sense, emotions are considered internal and external processes that regulate, assess, and modify one's emotional responses in line with their objectives. Any problems with emotion regulation can predispose one to both mental disorders, e.g. depression and anxiety [14]. Evidence suggests that cognitive strategies such as rumination, self-blame, and catastrophizing are positively correlated with depression and other pathological conditions, whereas strategies such as positive reappraisal are negatively correlated with mental disorders [15-17]. Therefore, interventions that improve emotional self-regulation can be used as an effective treatment for depression.

Rumination is one of the emotion regulation strategies and one of the negative outcomes of depression that can greatly affect one's life [18]. Rumination is defined as pondering something painfully and annoyingly, such as emotional avoidance. The ultimate goal of rumination is to alleviate emotional distress [19]. In various contexts, rumination is a set of repetitive passive thoughts that focus on the causes of results, hinder problem-solving, and increase negative thoughts. It is also associated with increased negative emotions such as anger and mental pressure [20, 21].

The most common treatment options for patients with depression are psychotherapy and antidepressants [22]. Individuals may use different strategies for emotion regulation and communication. The attachment theory explains these individual differences in children and adults [23]. Edward John Mostyn Bowlby, a British psychologist, argues that parents who respond to their children's attachment behavior cues and support them in stressful situations provide them with a secure foundation that organizes their environmental experiences [24]. As a result, people with different attachment styles employ different behaviors and strategies to deal with disturbances and stress [25]. Studies have shown that one of the factors affecting the development of depression is how individuals are attached to influential people in their lives [26, 27]. It is very important to reduce the symptoms of depression and their adverse effects on the mental and physical health status of patients. Moreover, problems such as poor emotional autonomy, maladaptive emotion regulation, and rumination and their chronic effects on health must also be addressed. Considering the key role of attachment styles in the development of depression, this study aims to analyze the effects of attachment-based therapy on emotional autonomy, emotion regulation, and rumination in adolescents exhibiting symptoms of depression. The authors hope to take an effective step

toward improving the conditions of depressed adolescents. Accordingly, the present study aimed to investigate the effects of attachment-based therapy on emotional autonomy, emotion regulation, and rumination in adolescents with depression symptoms.

Materials and Methods

This quasi-experimental research adopted a pre-test -post-test control group design. The statistical population included adolescents with symptoms of depression who visited the psychological centers of Ahvaz, Khuzestan Province (Iran), in 2022. Purposive sampling was employed to select 30 adolescents. The specified sample size was selected based on G*Power software, version 3.1., with a test power of 0.90, an effect size of 1.12, and a significance level of 0.05. The inclusion criteria were an age range of 13-18 years and depression diagnosis by a psychologist using the DSM-5 and based on the depression beck inventory (DBI-II). The exclusion criteria were unwillingness to continue the study, affliction with a psychotic disorder, missing more than two sessions of the intervention, and being under medication during the study. We randomly assigned the sample adolescents using a table of random numbers into experimental and control group (n=15 per group). Participants in the experimental group attended an attachment-based therapy intervention for twelve 45 minute sessions, whereas those in the control group were placed on the waiting list.

Measurement Tools

Emotional autonomy scale (EAS)

Steinberg and Silverberg [28] developed this 13-item scale to measure emotional autonomy in four dimensions: Individuation, de-idealization of parents, non-dependence on parents, and perceptions of parents as individuals. The items are scored on a 4-point Likert scale (from 1: Strongly disagree to 4: Strongly agree). The range of scores of the EAS is between 13 and 52. Mortazavi et al. [29] reported an α Cronbach coefficient of 0.70 for the EAS.

Emotion regulation questionnaire (ERQ)

Gross and John [30] developed this 10-item questionnaire to measure the emotion regulation strategies adopted by individuals in two subscales: reappraisal (6 items) and suppression (4 items). The items are scored on a 7-point Likert scale (from 1: Strongly disagree to 7: Strongly agree). The minimum and maximum scores for the reappraisal subscale are 6 and 42, respectively. Also, the range of scores under the repression subscale is between 4 and 28. The reliability of the Persian version of ERQ was reported 0.91 using Cronbach's α [31].

Rumination response scale (RRS)

Developed by Nolen-Hoeksema et al. [32], this 22-item scale measures a respondent's tendency to ruminate in response to a depressed mood. The items are scored on a 4-point Likert scale (from 1: Almost never to 4: Almost always), and the total score on this scale ranges between 22 and 88. The answers provided by the respondents are focused on four areas: Oneself, symptoms, possible reasons and consequences, and behavioral responses. Cronbach's α was 0.90 in Mousavi et al.'s research [33].

Intervention

Attachment-based therapy: The attachment-based therapy intervention performed in this study was developed based on attachment-based family therapy (ABFT) [34]. Table 1 presents an overview of the intervention sessions.

Statistical analyses

The normal distribution of the data was evaluated using skewness and kurtosis criteria as well as the Kolmogorov-Smirnov test. Moreover, Levene's test was used to check the homogeneity of variances. Descriptive statistics such as Mean±SD and inferential statistics such as repeated measures ANOVA were used for data analysis. The obtained data were analyzed in SPSS software, version 23.

Results

The participants in this study included 30 adolescent females with depressive symptoms. The means age of adolescents in the experimental and control groups was 15.87±2.20 and 17.09±2.74 years, respectively. In addition, the duration of depression in the experimental and control groups was reported as 3.45±1.40 and 4.21±1.67 years, respectively. In terms of demographic variables, no significant difference was observed between the control and experimental groups. Table 2 presents the pre-test, post-test, and follow-up mean scores of emotional autonomy, emotion regulation, and rumination in the experimental and control groups. Accordingly, the mean score of emotional autonomy, emotion regulation (reappraisal and suppression), and rumination in the experimental group significantly changed in the post-test and follow-up stages.

Table 1. An overview of the attachment-based therapy intervention

Sessions	Content
1	The participants were asked to talk about their strengths and things they could not talk about. The causes of depression symptoms and their effects on adolescents' interpersonal and family relationships were discussed. Adolescents were briefed on the therapeutic objectives and reasons for treatment follow-up.
2	Adolescents were asked to talk about the reasons behind conflict with their parents and why they do not ask their parents to help them when they are in trouble. Adolescents were asked to talk about their painful memories and experiences to find the main emotions responsible for their vulnerability. Adolescents were trained in how to deal with emotions about conflicts with their parents and ask them to help reduce the symptoms of depression.
3	Adolescents were trained in how to talk to their parents and discuss the details to achieve the desired result. Adolescents were trained in how to understand and regulate their emotions. Adolescents were trained in how to understand their role in negative interactions.
4	Adolescents were asked to talk about their interests and hobbies and how their parents are aware of their strengths and unique characteristics. From the perspective of parents, what were the symptoms of adolescent depression and how they could affect the family and interpersonal relationships of adolescents?
5	The parents' possible fault-finding, controlling, and humiliating behaviors as well as their parenting styles were discussed. The importance of attachment relationships in reducing tension was highlighted. Parents were trained in how to accept the emotions of their adolescents and help them manage their emotions and solve their problems.
6	It was investigated what parents thought their adolescent was getting away from them, as well as the adolescent's excessive enjoyment of their peers and lack of desire to spend time with them. Greater understanding of parents, creating a sense of empathy, and identification of parenting challenges that may be beneficial or problematic.
7	Recognizing parents' accomplishments, strengths, and competencies; comprehending parents' stressors and current circumstances; learning about parents' attachment history; and discussing parents' feelings regarding their adolescents. It was discussed whether the parents were close to their parents when they were younger or whether their parents could meet their needs.
8	The unmet or repressed attachment needs of parents were discussed. It was discussed how parents' experiences as children affect their parenting style. Parents were prepared for the attachment session in a way to avoid a defensive position.
9	The adolescents were asked to talk to their parents about issues that they had never talked about under the supervision of the therapist. Changing the quality of interaction between adolescents and parents; adolescents talking about past traumas; increasing interdependence between adolescents and parents.
10	Adolescents were asked to express their attachment needs, vulnerable emotions, the need for parental help, support, and empathy. Parents were asked to support, protect, and console their adolescents when they express feelings of loneliness, sadness, and frustration. They were also asked to accept their adolescent's anger. Parents discuss their personal life experiences. This makes adolescents better understand the reasons behind their actions.
11	Adolescents and parents were asked to describe ordinary challenges of adolescent development to improve their interactions and raise their concerns to achieve a solution for their problems.
12	Adolescents were trained in how to set new goals and return to pre-depression life.

The research data were tested before statistical analysis to ensure that the assumptions of the repeated measures ANOVA were established. An important assumption is the normal distribution of data. This assumption was examined in this study by using skewness and kurtosis measures as well as the Kolmogorov–Smirnov test. The results indicated that the skewness and kurtosis of all variables ranged between -2 and +2. Moreover, the significance level of the Kolmogorov–Smirnov test was >0.05 (Table 3). Therefore, the research data had a normal distribution. Then Levene's test was conducted to check the homogeneity of variances. The results confirmed the homogeneity of variances, i.e. the experimental group and the control group were homogeneous in terms of variances before the intervention. Since Mauchly's test of sphericity showed significant results, the Greenhouse-Geisser correction was performed in the next step.

Table 2. The scores of studied variables in the pre-test, post-test, and follow-up phases

Variables	Phases	Mean±SD		P
		Therapy	Control	
Emotional autonomy	Pre-test	24.60±3.96	25.13±3.52	0.292
	Post-test	31.53±4.30	25.80±3.57	0.001
	Follow-up	31.00±4.26	26.87±3.42	0.007
	P	0.001	0.181	-
Reappraisal	Pre-test	21.53±2.99	22.93±2.89	0.203
	Post-test	29.60±2.47	24.07±2.81	0.001
	Follow-up	29.07±2.65	24.13±2.99	0.001
	P	0.001	0.273	-
Suppression	Pre-test	18.93±2.21	19.67±2.02	0.347
	Post-test	12.00±2.00	18.73±2.21	0.001
	Follow-up	12.53±1.72	18.47±2.20	0.001
	P	0.001	0.131	-
Rumination	Pre-test	57.73±4.18	55.93±4.13	0.245
	Post-test	48.67±3.72	54.93±4.00	0.001
	Follow-up	49.60±3.90	55.13±3.92	0.001
	P	0.001	0.506	-

SD: Standard deviation.

The present study found a significant main effect of time (assessment stage) and a significant interaction effect between time and group on the scores of emotional autonomy, reappraisal, suppression, and rumination in adolescents with depressive symptoms. Emotional autonomy scores revealed a significant group-by-time interaction (F=186.91, P=0.001). The intervention group demonstrated significantly greater improvements in emotional autonomy over time (-6.93, 95% CI, -10.74%, -3.13%) compared to the control group (-0.67, 95% CI, -3.86%, 2.52%). Similarly, reappraisal scores also displayed a significant group-by-time interaction (F=144.13, P=0.001). The intervention group showed significantly greater improvements in reappraisal com-

Table 3. Results of normality of data distribution

Variables	Skewness	Kurtosis	Kolmogorov–Smirnov Test	
			Z	P
Emotional autonomy	-0.14	-0.90	0.10	0.200
Reappraisal	-0.07	-0.16	0.10	0.200
Suppression	-0.30	-0.15	0.14	0.112
Rumination	-0.33	-0.48	0.09	0.200

Table 4. Results of pairwise comparison of emotional autonomy, reappraisal, suppression, and rumination over time series

Variables	Group	MD (95% CI)			
		Within		Between	
		Post-test	Follow-up	Post-test	Follow-up
Emotional autonomy	Intervention	-6.93 (-10.74--3.13)	-6.40 (-10.20--2.60)	5.73 (2.77-8.69)	4.13 (1.24-7.02)
	Control	-0.67 (-3.861-2.52)	-1.73 (-4.92-1.46)		
Reappraisal	Intervention	-8.07 (-10.54--5.59)	-7.53 (-10.01--5.06)	5.53 (3.55-7.51)	4.94 (2.81-7.05)
	Control	-1.13 (-3.78-1.51)	-1.20 (-3.84-1.44)		
Suppression	Intervention	6.93 (5.12-8.75)	6.40 (4.59-8.21)	6.73 (5.15-8.31)	5.94 (4.45-7.41)
	Control	0.93 (-1.02-2.89)	1.20 (-0.76-3.16)		
Rumination	Intervention	9.07 (5.46; 12.68)	8.13 (4.52-11.74)	6.26 (3.35-9.19)	5.53 (2.6-8.46)
	Control	1.00 (-2.66-4.66)	0.80 (-2.86-4.46)		

MD: Mean difference.

pared to the control group (-8.07, 95% CI, -10.54%, -5.59% vs -1.13, 95% CI, -3.78%, 1.51%). Furthermore, suppression scores exhibited a significant group-by-time interaction (F=88.73, P=0.001). The intervention group reported significantly greater reductions in suppression over time (6.93, 95% CI, 5.12%, 8.75%) compared to the control group (0.93, 95% CI, -1.02%, 2.89%). Finally, rumination scores also displayed a significant group-by-time interaction (F=95.54, P=0.001). The intervention group demonstrated significantly greater reductions in rumination over time (9.07, 95% CI, 5.46%, 12.68%) compared to the control group (1.00, 95% CI, -2.66%, 4.66%) (Table 4).

Discussion

This study aimed to investigate the effects of attachment-based therapy on emotional autonomy, emotion regulation, and rumination in adolescents with depression symptoms. The research results indicated that attachment-based therapy significantly affected the emotional autonomy of adolescents in the post-test and follow-up stages. This finding is consistent with the results reported by Allen et al. [35] and Walsh and Zadurian [36], who concluded that parental attachment style could affect emotional autonomy. In other words, emotional autonomy establishes a balance between emotional dependence and the lack of conflict. Various aspects of one's developing autonomy during the transition to adulthood clash with attachment to parents, affecting the quality and level of actual autonomy [8]. Accordingly, adolescents with a secure attachment style look for support in stressful situations because they expect others to be positive supportive, and available [10]. Attachment-based therapy improves emotion regulation strategies to help adolescents develop healthy relationships with others and organize their expectations of their surroundings so that they can view their surroundings as a safe base [37] and improve their emotional autonomy. Emotional reactions and interpersonal relationships of individuals are guided by emotional and cognitive rules as well as strategies determined by attachment styles. Attachment-based therapy modifies maladaptive attachment styles to help individuals experience more autonomy during their transition to adolescence. It improves insecure attachment styles to reduce negative self-talk, mistrust of others, poor emotions, and the inability to establish intimate and emotional relationships with others, all of which suppress emotional autonomy. Attachment-based therapy also helps individuals develop a secure attachment style to foster healthy communication characteristics such as intimacy, appropriate adaptation and flexibility to emotional experiences, and tolerance of stressful situations [38].

Another study finding indicated the positive effects of attachment-based therapy on emotion regulation (reappraisal and suppression) of adolescents. This finding is consistent with the results reported by Brandão et al. [39], and Domic-Siede et al. [40], who showed that attachment styles could predict emotion regulation strategies. In other words, attachment is a relatively stable and emotional relationship between a mother and a child. Children may develop various attachment styles and,

thereby, different emotion regulation strategies based on how their mothers respond to their needs [36]. Individuals with an insecure attachment style experience anxious and stressful thoughts, as well as coping mechanisms that promote arousal and an unhealthy fixation on emotions. Such individuals view themselves as unworthy of friendship, love, and affection. They also see the outside world and other people as dangerous places and people who do not accept them. This is because they are continuously afraid of being rejected and abandoned by others. For example, individuals with an avoidant attachment style suppress or restrict their exposure to emotional experiences, and some others consider emotional adaptation as deliberate and voluntary attempts to control emotion in the face of stressful situations [39]. Ozeren [41] showed that secure attachment styles had a negative relationship with emotional ataxia and difficulty in the identification and description of emotions, whereas ambivalent and avoidant attachment styles had a positive relationship with emotional ataxia and difficulty in the identification and description of emotions. Verhees et al. [42] also reported that adolescents with an anxious or avoidant attachment style employ maladaptive strategies to regulate their emotions. Furthermore, attachment-based therapy helps adolescents better focus on their emotions, thoughts, and behavior and also reduces the sense of mistrust in others and the fear of abandonment by filling their attachment gaps. Additionally, it teaches adolescents with an insecure attachment style how to deal with challenges and emotional disturbances through appropriate emotion regulation strategies.

The study findings demonstrated the significant effects of attachment-based therapy on rumination at the post-test and follow-up stages. This finding is consistent with the results reported by Lanciano et al. [43], who indicated that attachment styles could significantly affect rumination and that rumination could mediate the relationships of anxious and insecure attachment styles with depression. Moreover, rumination is affected by attachment styles. Some studies have also reported the relationship between attachment styles with rumination and depression [44]. A secure attachment style makes a person more aware of disruptions and stressful situations in life, thereby tolerating stress better and behaving in a more restrained manner [25]. Individuals with an avoidant insecure attachment style, who are more emotionally distant, and those with an anxious insecure attachment style, who are more anxious and fearful, experience lower levels of psychological well-being and an increased tendency to ruminate. Nevertheless, individuals with an insecure attachment style suffer from depression because they use maladaptive cognitive strategies such as rumination. Individuals with an anxious attachment style are more vulnerable to the symptoms of depression and rumination because they excessively employ emotion regulation strategies. In other words, they are at higher risk of suffering from depression because they repeatedly recall their stressful experiences [45]. In conclusion, individuals with an anxious attachment style experience tension and worry, thereby resorting to the coping mechanisms that lead them to concentrate on their emotions. They also repeatedly recall negative thoughts, which suggests that they are rumination-prone. Therefore, improvement of the mother–child relationships and reduction of negative cognition can help reduce the risk of rumination in adolescents with avoidant and anxious attachment styles. In addition, some techniques, e.g. parental empathy and support, can alleviate the anxiety and stress of adolescents with insecure attachment styles and reduce the risk of rumination.

This research faced some limitations. For example, the study was conducted on a small sample due to insufficient resources. In addition, demographic characteristics and individual differences of participants were not considered in the effectiveness of attachment-based therapy. Therefore, future studies are recommended to use larger samples to obtain more reliable results. Additionally, taking into account demographic characteristics to manage the participants' differences can help measure the effectiveness of the intervention more precisely.

Conclusion

The research findings indicated that attachment-based therapy improved devotional autonomy and emotion regulation strategies and reduced rumination in adolescents with symptoms of depression. Therefore, attachment-based therapy is recommended to be employed as a means of improving emotional autonomy and emotion regulation strategies (reappraisal and suppression) and reducing rumination in adolescents exhibiting symptoms of depression.

Ethical Considerations

Compliance with ethical guidelines

The present study was approved by the Ethics Committee of Islamic Azad University, Ahvaz Branch (Code: IR.IAU.AHVAZ.REC.1401.145).

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Authors' contributions

Conceptualization and supervision: Marzieh Talebzadeh Shoushtari and Sahar Safarzadeh; Methodology: Fatemeh Seyed Mousavi; Funding acquisition and resources: Fatemeh Seyed Mousavi, and Marzieh Talebzadeh Shoushtari; Data collection: Fatemeh Seyed Mousavi; Data analysis: Sahar Safarzadeh; Investigation and writing: All authors.

Conflict of interest

The authors declared no conflict of interest.

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