

The Relationship between Attachment Style and Separation Anxiety Disorder in Badly-Cared and Orphan Adolescent Girls: The Mediating Role of Stress Coping Strategy and Internalized Symptoms

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Abstract

Introduction: This study aimed to investigate the relationship between attachment styles and Separation Anxiety Disorder (SAD) through the internalized symptoms and stress coping strategies in badly-cared and orphan adolescent girls living in Tehran in 2022.

Method: This was a correlational study of a Structural Equation Modeling (SEM) type. The statistical population included all adolescent girls aged between 12 and 18 under the direct or indirect supervision of Tehran's welfare center, of whom 200 were selected by the convenience sampling method. The participants answered the questionnaires of Collins and Reed's attachment styles, Billings and Moss's coping strategies, Achenbach and Rescorrella's adolescent self-report, and Morris et al.'s SAD.

Results: The findings of SEM demonstrated that the hypothesized model of this study has a good fit in the studied sample. The findings reveal that the secure attachment style is related to separation anxiety both directly ($T=-4.18$ and $b=-.22$) and indirectly through problem-oriented coping style ($P<.01$ and $Z=-10.83$) and emotion-oriented coping style ($P<.01$ and $Z=-7.23$). Avoidant attachment style is directly ($T=4.98$ and $b=.25$) and indirectly related to separation anxiety through problem-oriented coping style ($P<.01$ and $Z=4.33$) and emotion-oriented coping style ($P<.01$ and $Z=8.79$) and internalized symptoms ($P<.01$ and $Z=2.61$). Finally, ambivalent attachment style had no significant correlation ($P>.05$) with separation anxiety.

Conclusion: These results emphasize the importance of attachment patterns formed under the influence of adverse conditions of the vulnerable group, and the lifelong effects of these patterns in the mental health of them.

Keywords: Adolescent, Attachment Style, Badly-Cared, Internalized Symptoms, Orphan, Separation Anxiety Disorder, Stress Coping Strategy

Introduction

Badly-cared and orphan adolescents who live in welfare institutions or under the supervision of charities sometimes suffer from deprivations, damages and psychological traumas [1]. These people have grown up in troubled families since childhood and have experienced damages such as abuse and have been neglected and rejected [1]. According to UNICEF report in 2016, there are about 143 million unaccompanied children under the age of 18 in 19 developing countries and other countries. In addition, according to the report of the Iran Welfare Organization in 2014, there are about 23,000 orphaned and badly cared children in Iran, and the comparison of statistics from previous years shows an increase every year in the number of children entering welfare care centers [2]. Despite all efforts, abused and neglected children and adolescents, compared to their peers, are more likely to suffer from various psychological disorders, especially anxiety disorders [3] among

which one of the most common diagnoses seems to be Separation Anxiety Disorder (SAD) [4].

SAD is an excessive fear and worry of separation from home and attachment figures including father, mother, grandfather, grandmother, or siblings, and this anxiety is more than what is expected based on the developmental level of the person [5]. Studies show that separation anxiety serves as a predictive factor for crucial variables such as depression, suicidal thoughts, avoidant personality disorder [6], panic disorder and agoraphobia [7,8], disruption in social interactions and school avoidance [9] and sleep problems [10]. During previous studies conducted in this field, the role of various variables such as maladaptive cognitions [11], parent-child relationship [12] has been investigated in predicting SAD. Meanwhile, Belem da Silva [13] pointed out that the mechanism of SAD is important for humans due to the child's long-term attachment to the caregiver. In the attachment theory, intensified SAD is considered to be caused by a disturbance in the child's internal working model or the internal representation of attachment figures, which is formed based on past experiences related to primary caregivers. Therefore, according to the principles of the attachment theory [14], attachment style has been introduced as one of the dominant variables in predicting SAD [13,15,16].

Attachment is a relatively stable emotional bond established between a child and his/her mother or other caregivers with whom the child interacts regularly and constantly [17]. According to Bowlby [12], the quality of attachment between a child and a mother (caregiver) can be explained based on three distinct styles, which include (1) the secure attachment style, characterized by a sense of emotional security and trust in others, (2) the ambivalent attachment style, characterized by a pervasive and penetrating feeling of insecurity and anxiety towards establishing a relationship and anticipating rejection by loved ones, and (3) the avoidant attachment style, characterized by resistance to intimate relationships and tending to isolation [18]. Attachment relationships are always active throughout the life cycle, in the sense that the history of a child's emotional relationship with its caregiver creates long-term consequences, the effects of which can be seen even in adulthood [19]. The results of Sharifi et al.'s study indicated that children living in quasi-family centers have lower mean scores in secure attachment style and higher mean scores in avoidant attachment style [20].

Although the aforementioned studies point to the relationship between attachment styles and SAD, to the best of our knowledge, almost no study has investigated how this relationship and in what way attachment affects SAD of badly-cared and orphan adolescents. Childhood adversities and lifetime traumas seems to be important antecedents for creating and intensifying SAD. Despite the similarity of SAD with the phenomenology of other anxiety disorders, this disorder shows a specific mental disorder related to internalized symptoms, and its symptoms are considered as a consequence of internalized symptoms, which is one of the most common

mental disorders in young adults [21]. Among the causes of internalizing symptoms, the importance of insecure attachment styles during childhood to adolescence has been paid attention to [22, 23]. In this regard, the study of Mabilia et al. [24] in a sample of students in Italy revealed that attachment styles are related to SAD through the mediating role of internalized symptoms.

Internalized symptoms are defined as a group of emotional symptoms focused on a person, which indicates a person's compounded effort to control behavior, feelings of sadness, low self-esteem, behavioral inhibition, and fears [25]. Internalized symptoms are intrapersonal in nature and are manifested in the form of withdrawal from social interactions, inhibition, anxiety and depression [13, 26]. The results of the previous studies [24] point to the relationship of internalized symptoms with SAD, while internalized symptoms, by itself, are influenced by attachment styles [27]. Irvine et al. [28] revealed that secure attachment style is associated with lower internalizing symptoms. The findings of two meta-analyses also illustrated that insecurity (versus security) in early childhood has a subtle relationship with the occurrence of internalized symptoms [23, 29].

On the other hand, Lavalley and Schneider [30] have pointed out that children who grow up with emotional vulnerability or by badly-cared, severely depressed or very unpredictable parents, do not have effective Stress Coping strategies (SCS) to manage situations that provoke attachment behaviors (threatening situation: separation). This issue leads them to experiencing chronic anxiety. Meanwhile, SCS are influenced by attachment styles [31]. SCS refers to a set of behavioral and cognitive activities and processes to prevent, manage and reduce stress [32]. Lavalley and Schneider [30] also pointed to the relationship between stress coping skills and SAD. The conducted studies show that attachment styles play a role in the formation of SCS. For example, according to Lacasa et al. [33], people with secure attachment use problem-oriented coping style more than insecure people. Also, based on the model proposed by Schneider and Lavalley [34], attachment styles are related to SAD through the mediating role of SCS.

Although studies point to the role of internalized symptoms and SCS in the relationship between attachment style and SAD, and even indicate that the interventions based on SDS training and focusing on the reduction of internalized symptoms are effective on reducing anxiety [35], few studies have examined the relationship between SCS and internalized symptoms with SAD in badly-cared and orphan adolescents. There are two highly important studies based on which attachment styles are related to SAD in college students through the mediating role of internalized symptoms [24]. Accordingly, attachment styles are related to SAD through the mediating role of SCS [30]. Compared to their peers, badly-cared and orphan adolescents under the supervision of care centers affected by the damages in their families in the early years of life, as well as the deficiencies they have after living in care centers are more exposed to various mental disorders, especially anxiety

disorders [36] and these disorders are more common in affected adolescent girls than boys [3]. Therefore, on the one hand, according to the gaps and contradictions in the research literature in this field, and on the other hand, according to the long-term psycho-social consequences of SAD in the studied group and the exorbitant costs that will subsequently be for the economy and health of the society, conducting more studies in this field can cover one of the gaps in the research literature of the field of inquiry, especially in the affected group of Badly-cared and orphan adolescents who have significant anxiety

disorders. Therefore, this study was aimed to investigate the relationship between attachment styles and SAD through the mediating role of SCS and internalized symptoms in badly-cared and orphan girls. The hypotheses of this study were that (1) attachment styles are related to SAD through the mediating role of internalized symptoms in badly-cared and orphan adolescent girls, and (2) attachment styles are related to SAD through the mediating role of SCS in badly-cared and orphan adolescent girls. The assumed model for the mentioned relationships is presented in Figure 1.

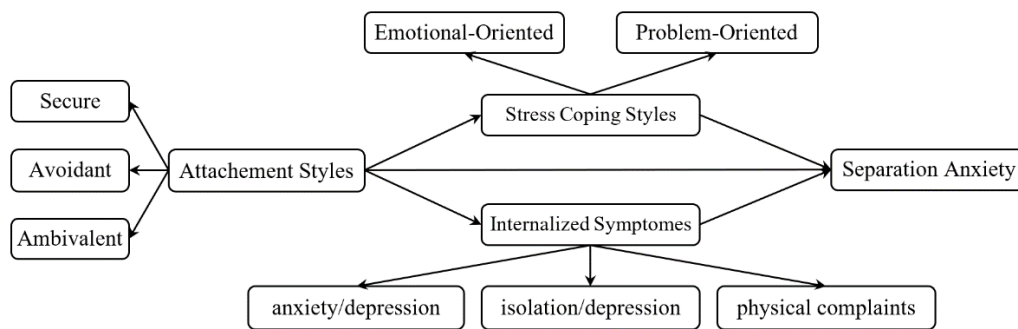


Figure 1. The hypothesized model of the relationship between attachment style and separation anxiety disorder through stress coping strategy and internalized symptoms.

Method

The current research was a correlational study, of a Structural Equation Modeling (SEM) type. The statistical population of this research included all badly-cared and orphan adolescent girls aged 12-18 living in welfare centers in Tehran, Iran in 2021. According to the limitations of the conditions of the studied society, the convenience sampling method was used. Jackson [37] has stated that if SEM is used, about 20 samples are needed for each factor (latent variable). Due to the fact that there were nine factors in the current research and considering the possible dropout of the sample during the implementation, 200 people were selected as the sample of the current study. The inclusion criteria of this study were (1) age group of 12-18 years, (2) badly-cared and orphan adolescents based on the criteria of the Iranian Welfare Organization, (3) the ability to complete the questionnaire and consent to participate in the research. The exclusion criteria were (1) taking anti-anxiety drugs in the previous month and (2) experiencing a trauma (such as the death of a loved one) in the previous three months. Prior to starting the study, the participants were assured that their information would be kept confidential and that the results would be used for research purposes only. After the participants' agreement on attending the research, a written consent was obtained to participate in the research. The SEM method was used to evaluate the relationships between the variables. In addition, SPSS 26 and AMOS 26 statistical software were used to analyze the data.

The tools used in this study were as follows:

Youth Anxiety Measure for DSM-5: To measure SAD, the subscale of the youth *anxiety measure for DSM-5 (YAM-5)* was used. *YAM-5* is a self-report anxiety

disorder questionnaire designed by Muris et al. [38] to measure anxiety symptoms in children and adolescents. Out of the total of 28 questions in this questionnaire, four questions measure SAD. All items are graded using a four-point Likert scale, ranging from never (0) to always (3). The total score and the score of each subscale can be obtained by adding the scores of the items related to it. The minimum and maximum scores for the SAD subscale are 4 and 24, respectively, with higher scores indicating a higher level of SAD in adolescents. Cronbach's alpha of the first part of the original version of this questionnaire was calculated to be 0.93 and 0.92 in clinical and non-clinical samples, respectively [38]. This questionnaire has been standardized by pirzad and ahi in Iran. They reported the internal validity of the anxiety questionnaire for children and adolescents in the range of 0.71 to 0.90. Criterion validity of the questionnaire using the anxiety screening scale related to emotional disorders of children and adolescents showed that there is a positive and significant correlation between the *YAM-5* questionnaire and the components of the anxiety screening scale for children and adolescents in the range of 0.12 to 0.74 [39]. In the present study, the internal reliability of this subscale using Cronbach's alpha was 0.89.

Collins and Read's Attachment Styles Questionnaire: This scale contains 18 items and three components of ambivalent, secure and avoidant. Items are scored on a five-point Likert scale ranging from 1(it does not match my characteristics at all) to 5 (it completely matches my characteristics). The minimum and maximum scores in this questionnaire for each subscale are 6 and 30, respectively, with higher scores in each subscale indicating more traits of that kind of attachment style in a person. Collins and Read [40] calculated Cronbach's alpha, as an indicator of

test validity, for each of its components in two samples of 173 and 100 students, respectively, to be 0.81 and 0.82 for component secure, 0.78 and 0.80 for component ambivalent, and 0.85 and 0.83 for component avoidant. Farhadi et al. obtained the Cronbach's alpha coefficient of the questionnaire equal to 0.72 and its validity was confirmed by factor analysis [36]. In the current study, the internal reliability of the ambivalent, secure and avoidant components using Cronbach's alpha was 0.91, 0.93 and 0.88, respectively.

Adolescent Self-Report Questionnaire: This questionnaire is a special form for adolescents aged 11 to 18, which is designed based on the Achenbach System of Empirically Based Assessment [26]. From the total scores of anxiety/depression syndrome, isolation/depression and physical complaints, the scale of internalizing problems is obtained, and from the scores of the symptoms of law breaking and aggressive behaviors, the scale of externalizing problems is obtained [26]. The self-report questionnaire contains 112 items about the specific problems of adolescents, each is scored on a three-point Likert scale. The higher a person's score on the scale, the more psychological distress he/she experiences. The reliability of this questionnaire by test-retest method with a one-week interval was reported to be 0.82, and the Cronbach's alpha score for the total score was 0.94 in a sample of American-Korean adolescents [26]. Achenbach's behavior problem scale has been standardized in Tehran by the Exceptional Education Organization [42]. Minaee obtained the Cronbach's alpha coefficient of the questionnaire equal to 0.85 [42]. In the present study, the reliability of the internalizing scale was obtained through Cronbach's alpha to be 0.87.

Stress Coping Strategies Questionnaire: The SCS Questionnaire, created by Billings and Moss [43], includes 32 items scored on a four-point Likert scale from 0 to 3 (0=never 3=always). This questionnaire has five subscales, which fall into two general subscales of problem-oriented strategy and emotion-oriented strategy. The highest score of problem-oriented coping is 24 and the lowest score is zero, while the highest score of emotion-oriented coping is 72 and the lowest score is zero, and a higher score in each of the two main scales indicates the presence of more characteristics of that coping strategy in the individual. Mamsharifi (44) found Cronbach's alpha to be 0.59 for problem-solving subscale, 0.73 for emotional control subscale, 0.59 for cognitive evaluation subscale, 0.83 for somatization subscale, and

0.60 for the attracting social support subscale. In the present study, the internal validity of this questionnaire was obtained through Cronbach's alpha to be 0.81 and 0.79 for the problem-oriented and emotion-oriented subscales, respectively.

Results

The results indicate that the average age of the entire sample was 15.08 (SD= 1.96). In this study, 98 of the studied adolescent girls (49%) were badly-cared and 102 (51%) were orphans, and 26.5% of them had no relationship with any person from the first degree or more distant relatives. In terms of education level, 104 individuals (52%) had middle school education, 69 (34%) had high school education, and 27 of them (13.5%) had been dropped out of school.

Before performing SEM, in order to check the normal distribution of the research variables, skewness and kurtosis were used, the results of which showed that the distribution of the scores of all variables was normal (the range of skewness and kurtosis was between -2 and +2). Durbin-Watson's test was used to check the independence of the errors, and the results showed no correlation between the errors (D.W=1.90, the range between 1.5 and 2.5 is acceptable). Another assumption is to establish a linear relationship between exogenous variables with the mediator and the mediator with the criterion, which was investigated with Pearson's correlation. The results along with the mean and standard deviation have been presented in Table 1.

In the first stage, to examine the relationships between the latent variables, the overall fit of the model, and then the coefficients related to the structural relationships (direct and indirect effects) were analyzed. At first, in order to determine the overall fit of the model, the fit index was considered. The fit indices of the model are presented in Table 2. For the fit index X^2/df , values smaller than 3 are appropriate and the closer it is to zero, it indicates a good fit of the model. For the GFI, IFI, CFI and NFI index, a value close to 0.90 and above is considered as an acceptable goodness of fit, which indicates that the model is good. In relation to the RMSEA index, values of 0.05 or less indicate a good fit of the model, 0.08 or less indicate a logical error of approximation, and a value higher than 0.10 indicates the necessity of rejecting the model [45,46]. The fit indices in Table 2 show the appropriate fit of the model. Furthermore, Table 3 indicates the coefficients of the relationship between the variables.

Table 1. Mean, Standard Deviation, and Correlation between Research Variables

Variable	M	SD	Skewness	Kurtosis	1	2	3	4	5	6	7
SE	18.77	4.95	-0.16	0.28	-						
AV	18.86	4.87	-0.63	0.21	- 0.31**	-					
AM	18.70	4.75	-0.66	0.27	0.11-	0.45**	-				
ECT	71.17	12.16	-0.47	0.64	-0.50**	0.60**	0.07	-			
PSCS	23.99	6.57	0.08	0.10	0.73**	-0.30**	-0.06	- 0.49**	-		
IS	90.75	6.69	0.13	0.39	-0.26**	0.29**	-0.09	0.33**	-0.34**	-	
SA	17.40	5.01	-0.22	0.05	-0.70**	0.47**	0.12	0.66**	-0.61**	0.38**	

**P<0.01 *P,<0.05

Note. SE= Secure, AM=Ambivalent, AV=Avoidant, ECT= Emotion-oriented Coping Style, PSCS= Problem-Oriented Coping Style, IS =Internalized symptoms, SA=Separation Anxiety

The final model of the relationship between attachment style and separation anxiety disorder through stress coping strategy and internalized symptoms can be seen in Figure 2.

The significance of the entire path in the SEM was checked

with the Sobel's test, the results of which have been reported in Table 4 (there is no significant relationship between the ambivalent style and any of the endogenous and mediating variables ($P > 0.05$) and therefore it was not included in the model).

Table 2. Fit Indices for Developed Model

Model fit indices	χ^2	df	χ^2/df	GFI	NFI	CFI	RMSEA
Index value	534.68	286	1.86	0.91	0.93	0.95	0.05
Acceptable value			<3	> 0.9	> 0.9	> 0.9	< 0.08

Table 3. Coefficients of the Relationship between Variables

Direct path	Regression coefficient	statistic -t
SE → ECT	-0.29	-6.23
SE → PSCS	0.41	9.74
SE → IS	-0.27	-5.61
SE → SA	-0.22	-4.18
AV → ECT	0.36	8.21
AV → PSCS	-0.31	-6.86
AV → IS	0.32	7.11
AV → SA	0.25	4.98
ECT → SA	0.35	4.83
PSCS → SA	-0.39	-9.21
IS → SA	0.30	6.45

Note. SE= Secure, AM=Ambivalent, AV=Avoidant, ECT= Emotion-oriented Coping Style, PSCS= Problem-Oriented Coping Style, IS =Internalized symptoms, SA=Separation Anxiety

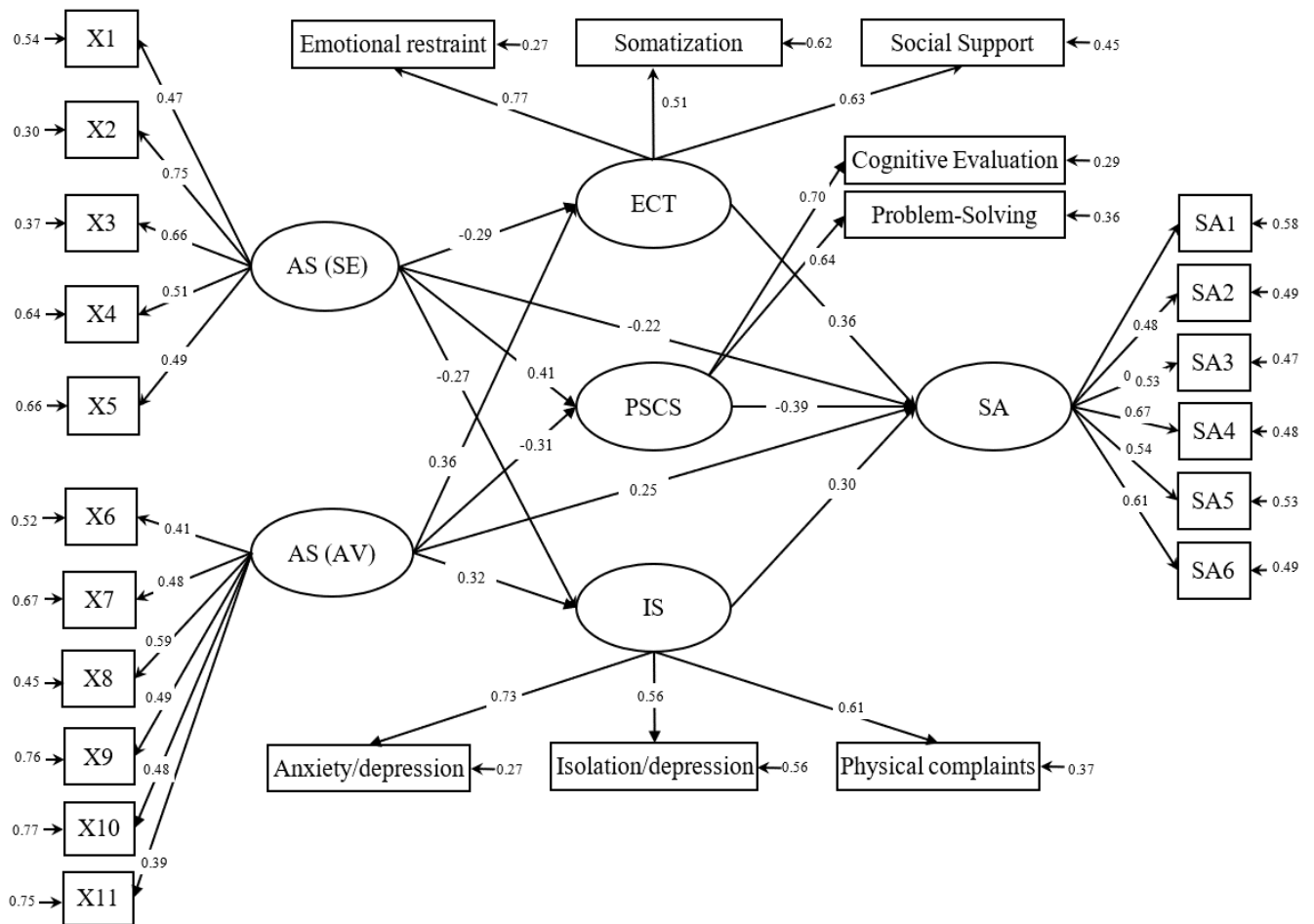


Figure 2. The final model of the relationship between attachment style and separation anxiety disorder through stress coping strategy and internalized symptoms.

Table 4. Results of Sobel's Test Investigating the Mediating Role of Stress Coping Styles and Internalized Symptoms

Variables	P	Sobel's test (z)
SE → ECT → SA	0.001	-7.23
AV → ECT → SA	0.001	8.79
SE → PSCS → SA	0.001	-10.83
AV → PSCS → SA	0.001	4.33
SE → IS → SA	0.057	-1.57
AV → IS → SA	0.004	2.61

Note. SE= Secure, AM=Ambivalent, AV=Avoidant, ECT= Emotion-oriented Coping Style, PSCS= Problem-Oriented Coping Style, IS =Internalized symptoms, SA=Separation Anxiety

The results of the Sobel's test in Table 4 show that the emotion-oriented strategy has a significant mediating role in the relationship between secure attachment style and avoidant with SAD. Problem-oriented strategy has a significant mediating role in the relationship between secure attachment style and avoidant attachment style with SAD. Although the relationship between secure attachment style and SAD through internalized symptoms is not significant, the relationship between avoidant attachment style and SAD through internalized symptoms is significant.

Discussion

The aim of the present study was to investigate the relationship between attachment styles and SAD through the internalized symptoms and stress coping strategies in badly-cared and orphan adolescent girls living in Tehran in 2022. Findings revealed that the hypothesized model of internalized symptoms and stress coping strategies mediation in relation to attachment styles and separation anxiety disorder had an acceptable fit with the data.

The first hypothesis of this was confirmed only in the case of avoidant attachment style, which is consistent with the results of previous studies [23, 24, 29, 33]. In explaining these findings, it can be stated that the lack of a mother or a stable caregiver leads to the formation of lack of trust and avoiding others as one of its consequences in adolescents living in family-like community centers [23, 33]. Therefore, avoiding emotional relationships with others is a kind of reaction to the unsustainability of previous experiences so that a person is spared from problems related to intimate and emotional relationships, in which his emotional and emotional needs are not answered. Based on the findings, in children and adolescents living in family-like community centers, less secure attachment and more avoidant attachment is formed [47]. People with a secure attachment, if needed, consider themselves capable of establishing close relationships and consider their caregivers protective and predictable. For this reason, they are free to explore the world and have faith in other people. On the other hand, perceiving their caregivers as unfeeling and indifferent people and the world as an unsafe place, people with avoidant insecure attachment consider themselves incompetent and unable to create close relationships when they are anxious. These people do not show distress and minimize attachment behaviors to deal with the possible negative reaction of a rejecting caregiver. They may avoid social relationships as a result, because those around them are perceived as indifferent or rejecting.

Ambivalent people believe that they are able to provide closeness and care only by overreacting and maximizing attachment behaviors, while perceiving caregivers as inconsistent and unpredictable. These people exaggerate their distress to increase and maintain closeness with caregivers. For this reason, they may react inappropriately in social interactions with others [48].

The second hypothesis of this study was confirmed, and this finding is consistent with those of previous studies [30, 34]. In explaining these findings, it can be said that the initial bitter experiences of the studied group, which have caused them to perceive the surrounding world as unsafe, and to have disrupting secure attachment, are probably effective in choosing immature and incompatible coping strategies by this group. Children and adolescents deprived of their families do not receive messages related to stressful situations and do not have a suitable model to deal with stress, so their way to deal with stress is often focused on emotions [49]. In this regard, it can be said that people with an avoidant style experience rejection from the attachment figure in childhood, and by denying the attachment relationship, they actually protect themselves from the risk of being rejected. On the other hand, the negativity of avoidants towards others and their excessive self-reliance makes them deprived of social-emotional relationships and support [50], which per se makes them unable to use positive thoughts and constructive strategies at least in the face of some stressful conditions in life. This means that the desire to be close to others in an active and normal way is significantly reduced due to the lack of trust in others and disturbance in exploratory behavior in these people. Therefore, a person cannot learn social skills and effective strategies to deal with stress in order to solve problems [51] and these characteristics can also explain the greater vulnerability to SAD.

The factors that harm the internal validity of the research in this study are the lack of detailed examination of subjective and objective intervention variables. Therefore, it is suggested that in future studies, age, education level, marital status, economic status, and other factors that can have a direct relationship with these variables should be investigated. Controlling and examining these variables adds to both internal and external validity. In this study, non-random sampling methods were used, which reduces the external validity of this study. Sampling methods such as stratification and cluster sampling should be used in future studies.

Conclusion

The findings of this study emphasize the importance of attachment patterns formed under the influence of adverse conditions of the vulnerable group, and the lifelong effects of these patterns in the mental health of them.

Conflict of Interest

The authors of the current studies had no conflicts of interest.

Ethical Approval

This article has been extracted from a PhD thesis, with the second author being the researcher. The study was conducted under the supervision of the Research Ethics Committee at Razi University, following all ethical principles, with the ethical code IR.SBU.REC.1399.016. The researchers informed the participants about the study's objectives and assured them that their information would remain confidential.

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