


Investigating the Level of Emotional Distress Based on Attachment Styles and Emotional Schemas in Female Students with Depression Symptoms

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Abstract

Background: People with depression often experience intense emotions and struggle to regulate them. This condition can lead to confusing emotional experiences and unsuccessful attempts to manage and understand emotions. Therefore, the study aimed to investigate the level of emotional distress based on attachment styles and emotional schemas in female students with depression symptoms.

Methods: This was a cross-sectional study; the target population were female undergraduate students at Shiraz Islamic Azad University, Shiraz, Iran who exhibited symptoms of depression in the year 2023. 120 participants were selected using convenience sampling method. The Beck Depression Inventory Second Edition (BDI-II), the Kessler Emotional Distress Scale (K10), the Collins and Read Revised Adult Attachment Scale (RAAS), and the Leahy's Emotional Schema Scale were given to the participants. The data were analyzed by multiple linear regression using SPSS version 28.

Results: The results indicated a significant correlation between all attachment styles and emotional distress ($P < 0.05$). Among the attachment styles, anxious attachment showed the strongest correlation with emotional distress ($r = 0.52$, $P < 0.001$), followed by secure attachment ($r = -0.44$, $P < 0.001$) and avoidant attachment ($r = 0.37$, $P < 0.001$). Analysis of the Regression indicated that non-compromising schemas had the strongest association with emotional distress ($\beta = 0.43$, $P < 0.001$), followed by anxious attachment ($\beta = 0.28$, $P = 0.001$) and secure attachment ($\beta = -0.28$, $P < 0.001$).

Conclusion: Various attachment styles, such as secure, avoidant, and anxious, along with emotional schemas, are linked to emotional distress. The strength of these correlations shows that maladaptive schemas are most strongly associated with emotional distress. Interventions should be provided to address negative core schemas and interpersonal sensitivity in students with attachment/anxiety issues. Individuals need to recognize maladaptive attachment styles and early schemas for healthy relationships.

Keywords: Emotional distress, Attachment styles, Emotional schemas, Female students, Depression symptoms

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1. Introduction

Depression is now a widespread and alarming problem in today's society, affecting a person's mental and physical health and their capacity to perform everyday duties due to feelings of sadness or lack of interest in enjoyable activities (1). Numerous models have been developed to understand and address depression, with one of the newer approaches focusing on emotional schemas as a factor that can influence emotional distress in individuals (2). Emotional schemas are how people understand and react to their own and others' emotions (3). While everyone experiences challenging like frustration, jealousy, and resentment, not everyone develops a mental health disorder as a result (4). Negative and maladaptive emotional schemas, which may stem from negative childhood experiences or insecure attachment

styles, can cause individuals to react to emotional triggers in an unbalanced and ineffective manner (4). This can lead to emotional confusion where individuals struggle to recognize and manage their emotions effectively. Consequently, emotional distress can arise because of inconsistent and negative emotional schemas (5). In today's society, depression is a prevalent and concerning mental health issue that affects many individuals. Experiencing feelings of sadness or loss of interest in activities can have negative effects on a person's emotional and physical well-being, as well as their ability to participate in daily tasks (1).

Numerous studies have been conducted on the causes of depression, particularly emotional disorders (4-6). Attachment styles have been identified as one predictor of depression (6). Attachment styles involve establishing feelings of

security and comfort in an individual through the regulation of physiological and emotional states by each family member. These styles are considered the foundation for shaping family interactions, as well as intellectual and emotional frameworks (7). According to previous research, there are three common attachment styles including secure attachment, avoidant attachment, and ambivalent attachment (8). Safer attachment styles are typically linked to reduced emotional distress and lower levels of depression. Individuals with secure attachments are better equipped to handle stress and form positive correlations, leading to a decrease in depression symptoms. On the other hand, insecure attachment styles such as anxious or avoidant attachment may be connected to higher levels of emotional distress and depression. Ultimately, attachment styles play a significant role in determining the extent of emotional turmoil and depression experienced by individuals (9).

A study conducted by Remondi and colleagues found that emotional schemas and attachment styles play a crucial role in influencing individuals' emotional interactions and reactions (10). The impact of stress, anxiety, and depression on students can vary depending on their risk factor groups (11). Recent studies have examined the complex connection between insecure attachment styles and depression (10-12). Anxious attachment can heighten the feeling of threat and absence of control over distress, while avoidant attachment can disregard negative consequences, both of which lead to heightened distress and worsened depressive symptoms (12).

Students with negative or maladaptive emotional schemas may have a higher risk of experiencing emotional distress and symptoms of depression. Recognizing these connections can assist experts in offering better approaches to prevent and treat depression in academic environments. This includes focusing on enhancing positive emotional schemas and cultivating emotional regulation abilities tailored to an individual's attachment style (13). One crucial aspect that needs to be addressed and examined when dealing with students exhibiting signs of depression is emotional distress. Psychological disorders typically involve a range of cognitive, behavioral, and physical symptoms that can significantly affect an individual. Emotional distress, often stemming from psychological stress triggered by various issues, can lead to changes in

mood and difficulties in controlling and regulating emotions (14).

Unfortunately, there is a lack of research on emotional distress in depressed students. In certain studies, like Remondi and colleagues studied the relationship between insecure attachment, emotional distress, and shame (10). Colonnello and colleagues explored the link between anxious attachment style and depression symptoms in university students, while another study separately examined and validated the influence of emotional schemas on depression (15, 16). Studying the emotional distress in students displaying signs of depression is essential as these students need special care and assistance to cope with the difficulties of student life in a positive and healthy manner. Therefore, this study aimed to explore the correlation between attachment styles, emotional schemas, and emotional distress and depression among students. There is a need for more in-depth research focusing on causal correlations between these factors and depression symptoms. Understanding how attachment styles and emotional schemas contribute to emotional turmoil and depression in students can inform intervention and prevention strategies in academic settings. Moreover, the main objective of this study was to assess the levels of emotional distress in students experiencing depressive symptoms by analyzing their attachment styles and emotional schemas.

2. Methods

The study was a quantitative and practical investigation aimed at exploring descriptive correlations. The target population for this study included female undergraduate students at Shiraz Islamic Azad University, Shiraz, Iran who exhibited symptoms of depression in the year 2023. The present investigation used pre-existing samples from law, accounting, microbiology, and chemical engineering. Tabachnick and Fidel's formula ($m8 + 50$) was employed to select a sample of 90 individuals who met the inclusion criteria (17). In this study, five variables including Secure attachment, Avoidant attachment, Anxious attachment, Comprehensibility emotional schemas, and non-comprehensibility emotional schemas were considered to calculate the sample size.

In this study, we attempted to anticipate the dropout rate among participants by increasing the

sample size by 30%, resulting in 120 individuals included in the study. To be eligible for the study, the participants must not be taking certain psychiatric medications, have no history of specific illnesses, providing informed consent, and having high score on the depression questionnaire. Participants were excluded from the study if they had physical ailments, refused to continue participating, or were referred to therapy during the study.

After receiving the ethics code from Islamic Azad University, Shiraz, Iran, the researcher referred to the university for collecting data. The participants were clearly and briefly informed about the purpose of the study. The participants were assured that the information they provide would be kept confidential. Participants were requested to complete the Beck Depression Questionnaire (1996) with adequate focus and accuracy for screening (18). The participants who scored above 14 (indicating mild depression) on the questionnaire and met the inclusion criteria were selected for the study. Following the assessment, the psychological distress surveys were given to the participants. The collected data were then analyzed using SPSS version 28, and the researcher presented and interpreted the research hypotheses based on the results before concluding. In the present study, ethical considerations were provided; they include obtaining informed consent from participants, ensuring confidentiality, trustworthiness, and privacy, avoiding placing financial strain on participants, and committing to compensate for any damages caused by the researcher.

2.1. Data Collection Tools

2.1.1. The Beck Depression Inventory Second Edition (BDI-II): The BDI-II is a newer version of the original Beck Depression Inventory. It was created by Beck and co-workers in 1996 to measure the degree of depression (18). The updated version follows DSM-IV and covers all aspects of depression based on cognitive theory. It contains 21 items with scores from 0 to 63 on a 0 to 3 scale, with no subscales. A study in Iran found two cognitive factors - emotional and negative attitude - along with physical symptoms. The study had a Cronbach's alpha coefficient of 0.86 (19)□

. In Iran, research was conducted on the Content Validity Index (CVI) and Content Validity Ratio (CVR) for the Beck Depression Inventory (BDI-II). The minimum acceptable CVR was found to

be 0.49 (18). In this study, the questionnaire had a Cronbach's alpha of 0.74.

2.1.2. The Kessler Psychological Distress Scale (K10): The survey was developed by Kessler and colleagues and consists of 10 questions that assess an individual's mental well-being over the past month (20). Responses to the questions range from never to all the time, with corresponding scores of 1 to 5, totaling a maximum score of 50. Lower scores indicate lower emotional distress, while higher scores indicate higher emotional distress. The standard cutoff levels for scores on this scale are as follows: 10 to 15 for mild disturbance, 16 to 21 for moderate disturbance, 22 to 30 for severe disturbance, and 31 to 50 for very severe disturbance. This survey does not contain subsections. A study in Iran found a reliability of 0.83 using Cronbach's alpha (21). Additionally, in the same study, the criterion validity of the survey was shown to be 0.83 through comparisons with the general health questionnaire. Kessler and colleagues reported a Cronbach's alpha of 0.93 for the longer version of the 10-item survey (20). Andrews and Slade confirmed the validity and reliability of the survey (22). Likewise, CVI and CVR indices were examined and confirmed in research conducted in Iran for this scale (K10). Likewise, the factor loadings of the questions were between 0.65 and 0.84 (21). In this study, the questionnaire had a Cronbach's alpha value of 0.71.

2.1.3. Collins and Read Revised Adult Attachment Scale (RAAS): Collins and Read created a survey in 1990 to evaluate individuals' attachment patterns (23). The scale has 18 items, each rated on a 5-point scale from completely disagree to completely agree. Scoring is: completely disagree=0, somewhat disagree=1, neither agree nor disagree=2, somewhat agree=3, and completely agree=4. Certain questions measure secure attachment, while others evaluate avoidant or ambivalent/anxious attachment. Some questions require reverse scoring, as indicated by an asterisk in the instructions. The scores for each subscale are then added together to obtain a total score. Asgarizadeh and colleagues validated the questionnaire and identified three factors (24). Cronbach's alpha values for secure, avoidant, and anxious attachment were reported as 0.81, 0.78, and 0.85, respectively. In this study, the Cronbach's alpha value for secure, avoidant, and anxious attachment was 0.76, 0.74, and 0.73, respectively.

2.1.4. Leahy's Emotional Schema Scale (LESS):

Leahy attempted to assess individuals' emotional schemas through the development of a scale specifically designed for this purpose (25). This scale enables the quantification of emotional schemas across different individuals, employing a six-point Likert scale ranging from completely disagree to completely agree. Leahy reported a Cronbach's alpha of 0.81 for the questionnaire (25). The Persian version of the scale had a Cronbach's alpha coefficient of 0.81, retest reliability of 0.78 over two weeks, and a correlation of 0.38 with Beck's depression scale (26). In Iran, a study confirmed CVI and CVR indices for Leahy's Emotional Schema Scale. The total factors found in the factor analysis explained 57.91% of the scale's variance (25). In this study, a Cronbach's alpha value of 0.75 was obtained.

2.2. Data Analysis

The descriptive analysis showed the frequency, percentage, mean, and standard deviation of the data. The inferential analysis uses the Kolmogorov-Smirnov test to check normality. Hypotheses were tested using regression with SPSS version 28.

3. Results

All of the 120 study participants were women and enrolled in college. The results showed that most respondents, accounting for 85.8% of the group, were unmarried, while 22.5% were in a marital correlation. The average age of the participants was 21.52 years, with a standard deviation of 4.79, and the age range of the sample ranged from 18 to 30 years old.

According to Table 1, the secure attachment style had the smallest average at 10.98, while the anxious attachment style had the highest average at 14.34. The average score on the Emotional distress scale was 22.51, with subjects scoring between 14 and 36. The average for Comprehensibility emotional schemas was 42.51, while for non-comprehensibility emotional schemas, it stood at 22.51.

Table 2 indicated a significant correlation between all attachment styles and emotional distress ($P < 0.001$). It was found that secure, avoidant, and anxious attachment styles were connected to emotional distress. The correlation between secure attachment and emotional distress was negative, while the correlation between avoidant and ambivalent attachment styles and emotional distress was positive. Among the attachment styles, anxious attachment showed the strongest correlation with emotional distress ($r = 0.52$), followed by secure attachment ($r = -0.44$) and avoidant attachment ($r = 0.37$). The results indicated a significant correlation between the combined score of compromising schemas ($P = 0.026$) and non-compromising schemas ($P < 0.001$) with emotional distress. The correlation between compromising schemas and emotional distress was found to be negative, while the correlation between non-compromising schemas and emotional distress was positive. The correlation coefficient for compromising schemas was -0.20 and for non-compromising schemas was 0.41 , indicating that non-compromising schemas had a stronger association with emotional distress.

Table 1: Descriptive statistics of the main variables

Variables		Mean	SD	Min	Max
Attachment styles	Secure attachment	10.98	2.33	5	16
	Avoidant attachment	13.88	2.37	8	19
	Anxious attachment	14.34	3.72	6	22
Comprehensibility emotional schemas		42.51	7.92	0.12	-0.83
Non- comprehensibility emotional schemas		47.32	9.94	-0.10	-0.91
Emotional distress		22.51	22.51	4.45	14

SD: Standard Deviation

Table 2: Correlation test between attachment styles and emotional schemas with emotional distress

Variables		The correlation coefficient	P
Attachment styles	Secure attachment	-0.44	<0.001
	Avoidant attachment	0.37	<0.001
	Anxious attachment	0.52	<0.001
Comprehensibility emotional schemas		-0.20	0.026
Non- comprehensibility emotional schemas		0.41	<0.001

Table 3: Evaluating the correlation between emotional distress with attachment styles and emotional schemas

Model	Unstandardized Coefficients	SE	Standardized Coefficients	t	P	Collinearity indicators	
						Tolerance	VIF
Constant	12.71	3.27	—	3.89	<0.001	—	—
Secure attachment	-0.541	0.142	-0.28	3.80-	<0.001	0.82	23.1
Avoidant attachment	0.390	0.136	0.21	-2.86	0.005	0.86	16.1
Anxious attachment	0.337	0.095	0.28	3.54	0.001	0.82	1.40
Comprehensibility emotional schemas	-0.096	0.047	-0.22	2.04-	0.043	0.41	2.45
Non- comprehensibility emotional schemas	0.237	0.062	0.43	3.84	<0.001	0.36	2.77

VIF: Variance Inflation Factor; SE: Standard Error

The findings in Table 3 showed significant correlations between different variables and emotional distress. The study found that attachment styles such as secure, avoidant, and anxious, as well as compromising and non-compromising emotional schemas, were associated with emotional distress. The negative correlation between secure attachment and compromising emotional schemas with emotional distress was observed, while the positive correlation was found with avoidant attachment, anxious attachment, and non-compromising emotional schemas. It was noted that non-compromising schemas had the highest association with emotional distress ($\beta=0.43$), followed by anxious attachment ($\beta=0.28$) and secure attachment ($\beta=-0.28$), based on the strength of correlation analysis.

4. Discussion

The aim of the study was to assess the degree of emotional distress in female students exhibiting symptoms of depression, taking into account their attachment styles and emotional schemas. Various attachment styles like secure, avoidant, and anxious, as well as emotional schemas involving compromising and non-compromising behaviors, were found to be linked to emotional distress in correlations. The correlation of secure attachment and compromising emotional schemas on emotional distress was negative, while the effect of avoidant attachment, anxious attachment, and non-compromising emotional schemas was positive. Analysis of the correlation strength indicated that non-compromising schemas had the strongest association with emotional distress, followed by anxious and secure attachments. Similar results were found in international studies conducted previously (15, 27-33).

In a study by Remondi and colleagues, the connection between insecure attachment and

psychological disturbance was examined with the mediating factor of shame (10). Minihan and co-workers found correlation between sensitivity to rejection and emotional disorders in adolescents (28). The research findings indicated a significant positive correlation between sensitivity to rejection, particularly from parents, and emotional distress among adolescents. In a study conducted by Çelikbaş and Yalçinkaya-Alkar, the connection between attachment styles, ruminative response styles, dysfunctional attitudes, and diagnosis of major depression was analyzed. The findings indicated a significant relationship between a specific set of variables and attachment styles in relation to depression, anxiety, thinking, reflection, perfectionism/success, and need for approval/dependence. Moreover, individuals with a secure attachment style displayed lower levels of depression and anxiety in comparison with those with a fearful and rejecting attachment style, even after taking into account ruminative response style and dysfunctional attitudes (29).

Kozan and Arsalan studied how social anxiety, attachment insecurity, and emotional schemas are related in college students (30). Results indicated that female students had higher social avoidance scores. Attachment insecurity and emotional schemas were significant factors related to social anxiety among students. The study found a significant correlation between mental fatigue, emotional disturbance, and depression symptoms (30). Rodas and co-workers identified that 29% of the variability in anxiety and 38% of the variability in depression could be accounted for by specific cognitive emotion regulation strategies. The influence of cognitive emotion regulation strategies on anxiety and depression was influenced by the gender of participants and the timing of evaluations, suggesting that cognitive emotion regulation strategies may not have consistent positive or negative effects across all individuals

and circumstances (31). There is also a significant correlation between negative emotion regulation styles and psychological distress (32).

Liu and co-workers investigated the role of negative core schemas and interpersonal sensitivity in the relationship between adult attachment and depressive symptoms among college students (27). The study found that attachment anxiety and avoidance are linked to depressive symptoms in university students through negative core beliefs and sensitivity in correlations. Insecure attachment to the mother and disconnection/rejection schema also showed a strong correlation with depression and anxiety symptoms. It is suggested that individuals should replace incompatible schemas with realistic beliefs to improve mental health and well-being (34).

Insecure attachment is linked to emotional dysregulation and depression. People with insecure attachments are more likely to feel emotional instability and depression compared with those with secure attachments (15). This indicates that interpersonal emotion regulation plays a crucial role in alleviating emotional distress in individuals (35). Anxious attachment is also associated with depression (15). Emotional disturbance can be described as a distinctive and distressing emotional response to stressors or specific needs, which may result in temporary or lasting harm to the individual (36). Emotional distress in individuals can result in a range of psychological issues, such as decreased motivation, sadness and hopelessness about the future, experiencing negative emotions, constant fatigue, loss of interest in activities, and in severe cases, thoughts of suicide. The signs show how much emotional disturbances can affect someone's mental health and overall well-being (37). Individuals with secure attachment are less likely to be prone to depression. Attachment styles, overall, can be viewed as indicators of future depression and other mental health issues. Therapy and counseling can assist individuals in developing secure attachment and reducing insecure attachments to minimize psychological issues (38).

4.1. Limitations

The researchers encountered several limitations during the study, including a small number of samples due to lack of cooperation of students,

lack of focus on the questions, distortion of some questionnaires, and exclusion from the analysis. The findings cannot be generalized as the study only included female students from Shiraz Azad University. This study did not take into account demographic factors that may have influenced the outcomes.

5. Conclusions

Different attachment styles, such as secure, avoidant, and anxious, along with compromising and maladaptive emotional schemas, are associated with emotional distress. Correlation of secure attachment and compromising emotional schemas on emotional distress had a negative effect, while avoidant attachment, anxious attachment, and uncompromising emotional schemas had a positive effect. The analysis of the strength of these correlations showed that maladaptive schemas were most strongly linked to emotional distress, followed by anxious attachment and secure attachment. These results provide preliminary support for additional research on the connection between adult attachment and depressive symptoms, taking into account integrative and interpersonal cognitive perspectives. The study also recommends that universities identify students with attachment/avoidance anxiety early on and provide interventions to address negative core schemas and interpersonal sensitivity, to reduce future depressive symptoms. Individuals need to recognize maladaptive attachment styles and early schemas to cultivate healthy intimate correlations.

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Authors' Contribution

Fatemeh Tadayonghotbabadi: Substantial contributions to the conception and design of the work; the acquisition, analysis, and interpretation of data for the work, drafting the work. Ali Naseri: Substantial contributions to the conception and design of the work; the acquisition, analysis, and interpretation of data for the work, drafting the work and reviewing it critically for important

intellectual content. All authors have read and approved the final manuscript and agree to be accountable for all aspects of the work, such that the questions related to the accuracy or integrity of any part of the work.

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Ethical Approval

The Ethics Review Board of Shiraz Branch, Iran, approved the present study with the code of IR.IAU.SHIRAZ.REC.1403.011. Also, written informed consent was obtained from the participants.

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