Mother-Infant Attachment Style as a Predictor of Depression among Female Students

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ABSTRACT

Background & aim: A multitude of studies show an association between adult attachment styles and psychopathology. Therefore, in this study, we investigated the relationship between attachment style and depression among students of Bu-Ali Sina University, Hamadan, Iran.

Methods: To this end, 157 female students were randomly selected. Data were obtained using a demographic form, Adult Attachment Inventory (AAI) (Hazan and Shaver), and Beck Depression Inventory (BDI-II). The data was analyzed by performing Pearson product-moment correlation coefficient and regression analysis, using SPSS version 16.

Results: Our findings indicated that secure attachment style had no significant correlation with depression, while Anxious/ambivalent attachment style had significant positive correlation with depression (r=0.24, P<0.05), and avoidant attachment style had significant positive correlation with the participants’ depression (r=0.15, P<0.05). Regression analysis reflected that attachment styles may predict depression. Finally, anxious/ambivalent style had a significant positive effect on depression (P<0.05, β=0.24), such that with one unit increase in the standard deviation of the predicting variable (anxious/ambivalent style), standard deviation of the dependent variable (depression) increased by 0.24 units (P<0.05).

Conclusion: The results of the present study can promote understanding of attachment styles involved in the development of vulnerability to depression.

Introduction

Depression is one of the most important forms of psychopathology, afflicting about 20-25% of women and 10-17% of men within their life span (1). This condition is recurrent, with each episode increasing the risk of subsequent ones (2). The rates of recurrence of this disorder for the second, third, and fourth times are estimated at 50-60%, 70-80%, and 90%, respectively (3). Depression is a human experience with diverse forms. In its more delicate form, depression is a momentary feeling of sadness or discouragement, most often engendered from perceived loss or sense of helplessness about a specific event. Therefore, most scientists focus their studies on the depressed person in seclusion. To some extent, drastic experiences of depression often involve biological, psychological, and social elements (4).

Typically conceptualized as an intra-psychic phenomenon, theories about the etiology of depression focus on individual differences variables. Early statements of Beck's theory underscore the presence of dysfunctional attitudes as representations of negative self-schemata (5). However, intra-psychic models may not pay enough attention to the distressing interpersonal contexts that accompany depression (6). Recently, there has been great emphasis on both theory (7) and research on understanding the interplay between intra-psychic vulnerabilities and interpersonal contexts.

In recent years, evaluation of integrative, multidimensional models of cause and treatment of depression has been highlighted. Owing to the study of interpersonal and cognitive variables, it has been argued that attachment theory may serve to incorporate these previously separate approaches.

Attachment theory was formulized by...
Attachment Styles & Female Depression

psychiatrist and psychoanalyst John Bowlby. Attachment theory is a psychological, evolutionary, and ethological theory concerning the emotional attachment between two or more individuals. The most significant tenet of attachment theory is that a young child needs to extend a relationship with at least one primary caregiver for the social and emotional development to occur normally, without which, the child might face permanent psychological and social impairment. According to the attachment theory, infant behavior associated with attachment is primarily seeking proximity to an attachment figure in stressful situations. Infants become attached to adults who are sensitive and responsive in social interactions with them, and remain as consistent caregivers for some months during six months to two years of age. During the latter part of this period, children begin to use attachment figures (familiar people) as a secure base to explore from and return to.

Parental responses lead to the development of patterns of attachment, which in turn, forms internal working models that can shape the individual's feelings, thoughts, and expectations in later relationships. Separation anxiety or grief following the loss of an attachment figure is considered to be a normal and adaptive response for an attached infant. These behaviors might evolve since they enhance the chance of survival of the child (8).

Moreover, attachment theory has developed into a central approach in understanding interpersonal relationships (9). Bowlby (10) proposed that attachment is an "action pattern", a mechanism in which a caregiver, usually the mother, elicits attachment behaviors from an infant. In this manner, attachment can be viewed as a homeostatic process used for maintaining contact with those who give one feeling of safety and security (11). In order for individuals to develop secure adult relationships, Bowlby (10) noted that quality in the parent-child bond is necessary.

The study of relating-style attachment is new, originating from a focus on individual differences for examining psychopathology (12) with particular reference to depression (13). An association between insecure attachment style and depression is shown both in terms of depressive symptoms, as assessed by a checklist (13), and clinical levels of disorder (14). However, what remains puzzling about the available studies is that while there is consistency in linking any insecure attachment style with depression, there is virtually no consistency in differentiating a more specific vulnerable attachment style.

There are some studies (15-22) investigating the link between attachment styles and depression. Roberts, Gotlib, and Kassel (23) investigated the relationship between adult attachment security and symptoms of depression. Insecure attachment appears to lead to depressive symptoms in adulthood through its impact on self-worth contingencies and self-esteem. Bifulco, Moran, Ball, and Bernazzani (24) found a glaring inconsistency in the type of insecure style related to depression. That study examined adult attachment style in relation to clinical depression in a high-risk community sample of women. A companion paper examined its relationship with other depressive vulnerabilities.

There are also a number of studies in Iran investigating the relationship between attachment styles and dissimilar variables. One study illustrated the role of attachment styles and self-protective mechanisms associated with obsessive-compulsive disorder. Its results demonstrated avoidant and ambivalent attachment styles were statistically greater among individuals with obsessive-compulsive disorder than normal controls (25). Behzadipour et al. (26) studied the relationship between attachment styles and weight-concern among adolescent girls. The results indicated that attachment security had a significant negative correlation with weight-concern among adolescent girls. In another study (27), the relationship between aggression and attachment styles was examined among Iranian and Indian subjects, in which that participants were 600 students in the 5th grade (300 Iranian and 300 Indian, each consisting of 150 boys and 150 girls). The results revealed that secure attachment style illustrated a significant negative correlation with aggression among boys, girls, and the entire Iranian sample. In Indian participants, attachment security was also found to have a significant negative correlation with aggression.

In this study, we aimed to shed light on the relationship between attachment styles and depressive symptoms. The first hypothesis is that there is a relationship between attachment styles and depressive symptoms, and the second
is that attachment style might predict an admissible rate of depression.

Materials and Methods
This descriptive, correlational study was carried out on 157 female students of Bu-Ali Sina University, Hamadan, Iran, who graduated during September-May 2014. The participants were selected by using stratified random sampling from Chemistry, Engineering, Humanism, Art, Economy, and Social Sciences faculties. The participants were in normal state of mind and were not necessarily vulnerable to clinical depression. To obtain data, the participants filled out a demographic form, Adult Attachment Inventory (AAI), and Beck Depression Inventory (BDI-II)

Demographic form
The demographic form investigated factors such as age, educational level, and income.

Adult Attachment Inventory (AAI)
Adult attachment styles (28) were investigated using the Persian version of AAI designed by Ainsworth et al. (29). This inventory is a 21-item scale rated using a 5-point Likert-type scale ranging from 1 (not at all characteristic of me) to 5 (very characteristic of me). The measure consists of three subscales, measuring secure (when one feels s/he can rely on others to attend to their needs of proximity, emotional support, and protection), ambivalent (when one feels separation anxiety when separated from the others and does not feel reassured when others return to him/her), and avoidant attachment styles (when the person avoids others). In this study, the Persian version of AAI, normalized by Besharat, was used (30). In that study, (n=240 college students) the internal consistencies of secure, ambivalence, and avoidance subscales were 0.74, 0.69, 0.71 for girls and 0.73, 0.72, 0.71 for boys, respectively. Reliability of the scale was established using Cronbach’s alpha (α=0.70) and test-retest reliability after one-week (0.72), indicating adequate validity.

Beck Depression Inventory (BDI-II)
BDI (31) measures the severity of depressive symptoms in both depressed and normative samples. BDI is positively related to Beck Hopelessness Scale (r=0.68) and Hamilton Psychiatric Rating Scale for depression (r=0.71) (32). BDI is a 21-item scale presented in multiple-choice format, which purports to measure presence and degree of depression in adolescents and adults.

Each of the 21-items of the BDI attempt to assess a particular symptom or attitude specific to depressed patients and consistent with descriptions of depression stated in the psychiatric literature. Although the author, Aaron T. Beck, contributed to the development of the cognitive theory of depression, BDI was designed to assess depression independent of any particular theoretical bias. In the Persian version of BDI, each participant can get the highest and lowest scores of 63 and zero, respectively, with higher scores indicating higher levels of depression. Beck admits that there is no arbitrary cut-off score and it depends on the characteristics of the patients and the purpose for which the inventory is used. In the present study, the Cronbach’s alpha was 0.93 and the test-retest correlation was 0.92 after one-week, indicating adequate validity.

Data collection
After obtaining permission from the authorities of the university and making initial contact with students and obtaining their written informed consent, the test phase was carried out and the students were free to participate in the study. The participants were given detailed instruction about the questionnaire and rating scales and were encouraged to ask any question regarding the research project. The participants were asked to indicate which statement best described their feelings. All the participants received the same instructions on how the questionnaires should be filled out. They were also assured of the confidentiality of the data. The AAI, BDI, and demographic form were administrated.

Data analysis
The study hypothesis was that mother-infant attachment styles can predict depression among young girls, which was tested using Pearson product-moment correlation and multiple regression analysis at 95% confidence interval. Data were analyzed using SPSS version 19.
Results

In general, 157 female college students aged between 20 and 26 years participated in this study, 18 of whom were married and 139 were single. Moreover, 94 subjects were studying humanities, while 25 and 38 of them were students of sciences and engineering majors, respectively. Additionally, 153 participants had Bachelor’s degree and four were Master’s students. The participants were divided into three groups of secure (n=89, mean: 8.94±8.37), anxious/ambivalent (n=41, mean: 11.95±8.25), and avoidant (n=27, mean: 12.22±9.6).

Pearson product-moment correlation exhibited that secure attachment style had no significant correlation with depression (r=-0.03, P<0.654). Anxious/ambivalent attachment style had significant positive correlation with depression (r=0.24, P<0.001), and avoidant attachment style had significant positive correlation with the participants’ depression (r=0.15, P<0.029). Results of regression analysis indicated that depression scores were significantly different among the attachment styles (secure, avoidant, and anxious/ambivalent; F=7, P<0.05). Considering $R^2=0.12$, attachment styles can predict 12% of individuals’ depression variance. This finding is in line with those of Gerlsma and Luteijn (13) that predicted a link between depressive symptoms and more anxious/ambivalent styles such as ‘preoccupied/enmeshed’ and ‘fearful’ (37), while others have highlighted ‘avoidant’ styles (38).

Attachment theory is a particularly influential line of study that has generated important empirical results as well as theoretical concepts concerning the links between parenting quality, cognitive processes, interpersonal relationships, and psychopathology (29, 33). Attachment researchers consider interaction with caregivers as the main building blocks of the construction of representational structures or internal working models that organize information processing in childhood and adulthood (39).

Discussion

Our results demonstrated that individuals who perceived themselves as insecurely attached (anxious/ambivalent and avoidant) showed high scores in depression scale and a significant positive correlation with depression; thus, our hypothesis was confirmed. The previously reported association between depressive symptoms and insecure adult attachment was proven (33). Our findings are consistent with those of previous studies on this issue; adult participants who deem themselves as insecurely attached (i.e., avoidant and ambivalent) consistently find themselves more distressed in situations perceived as dangerous (34), they also appear to be more anxious and depressed than those who consider themselves as securely attached (35).

In a study by Malcolm and Carol (36), attachment patterns were assessed using AAP. It was found that preoccupied attachment was associated with dysthymia. In addition, results showed that depression scores were significantly different among the attachment styles (secure, avoidant, and anxious/ambivalent; F=7, P<0.05). Considering $R^2=0.12$, attachment styles can predict 12% of individuals’ depression variance. This finding is in line with those of Gerlsma and Luteijn (13) that predicted a link between depressive symptoms and more anxious/ambivalent styles such as ‘preoccupied/enmeshed’ and ‘fearful’ (37), while others have highlighted ‘avoidant’ styles (38).

Attachment theory suggests that early relationships between children and their primary caregivers form children’s “working models” of self and others. Working models are relational schemas that are shaped as a result of regularities in interactions with key attachment figures. They entail information both about the emotional responsiveness of attachment figures and about self as

### Table 1. Regression coefficients of depression and attachment styles

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>B</th>
<th>SD. error</th>
<th>β</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant value</td>
<td>5.86</td>
<td>3.9</td>
<td></td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td>Secure style</td>
<td>0.03</td>
<td>0.04</td>
<td>0.19</td>
<td>0.06</td>
<td>0.43</td>
</tr>
<tr>
<td>Anxious/ambivalent style</td>
<td>0.73</td>
<td>0.19</td>
<td>0.24</td>
<td>0.30</td>
<td>0.032</td>
</tr>
<tr>
<td>Avoidant style</td>
<td>0.20</td>
<td>0.14</td>
<td>0.34</td>
<td>0.11</td>
<td>0.172</td>
</tr>
</tbody>
</table>
experienced in these relationships. For instance, children who experience kindness and stability in their relations with attachment figures expand a working model of self as a lovable and a working model of others as loving and dependable. On the contrary, children who experience rejection and inconsistency increase working models of themselves as unlovable and of others as hostile and unreliable (5, 10).

Bowlby (5) proposed that individuals become increasingly susceptible to psychopathology due to tactics for managing judgments and emotions connected to attachment, which compromise pragmatic assessments. For example, Dozier et al. (40) explained how the experience of rejection and unreliability in caregivers may guide some infants to model themselves as rejected and others as rejecting, which in turn, leads to insecure methods for coping with troubles.

The main function of attachment representations is to guide the child, and later the adult, with future stressful events in which the attachment system would be activated. As a result, negative working models of self and other would be desired to guide individuals to conflictive interactions and relationships with others, as the individual would expect an unsupported response and will start defending against it in advance by exhibiting either overt hostility or withdrawal. Adjusting emotion, cognition, and behavior, insecure attachment representations tend to confirm, rather than disconfirm themselves in the existence of new experience, rendering the individual increasingly not capable to deal with distress and, ultimately, vulnerable to psychological disorder.

Negative working models of self and others that are linked with insecure attachment relationships might be a precursor to the model of expectations and cognitions seen in depression (41). Insecure attachment relationships generate low internalized feelings of security. When faced with stress, insecurely-attached individuals possibly have fewer resources for coping and may be more susceptible to depressed mood (41). Further, insecurely-attached individuals may interpret negative interpersonal events in terms of personal unworthiness and incompetence, which in turn, contribute to the development of depressive symptoms. Empirical evidence supports a link between working models of attachment and depression. Results from many investigations of depressed individuals suggest that the quality of their parent–child attachment is damaged (42). Evidence also suggest a more particular association between preoccupied, and to some extent, fearful attachment styles and depression (37).

On the subject of depression, in particular, attachment studies provide evidence that insecurely attached individuals are vulnerable to depression as the experience of parental neglect, abandonment, criticism, or death result in negative expectations about self and important others. Such expectations tend to orientate these individuals towards the establishment of unsupportive and conflictive relationships, which further strengthen problematic cognitive, emotional, and behavioral processes associated with depression (43).

Since the understanding of dysfunctional cognitive processes is regarded to be vital in depression, a number of empirical studies report associations among various aspects of attachment representations and depressogenic cognitions. Some suggest that dysfunctional attitudes mediate the relationship of attachment anxiety and avoidance in adult relationships with depression (23), while others associate depressogenic thinking with retrospective accounts of poor parental bonding (44). In addition, a number of studies indicate that insecurity of attachment and cognitive difficulties are important characteristics of depression in children (45).

A particular type of cognitive vulnerability, very consistently associated with depressive symptoms, is generalization or the tendency to draw unfounded general conclusions about the incompetence and worthlessness of self, typically in the face of a difficulty (46).

Studies on female attachment primarily from a social psychology perspective use the personality construct known as “attachment style” to predict risk for depression (13, 24). Based on Bowlby’s (10) work, as well as cognitive and interpersonal theories (31), people who have an insecure attachment style, characterized by either worry about emotional availability and support of others or by distrust or fear of closeness, selectively attend to aspects of interpersonal interactions that support their views. These cognitive schemas of relationships, which largely function subconsciously, can engender feelings of loss and
isolation, and therefore, predispose people toward depression. Insecure schemas also influence behavior as people act in response to their distorted perceptions, in advertently alienating others and undermining relationships, which solidifies their negative schemas and further contributes to depression.

One limitation of this study was that each attachment style was explored using only a self-report measure, which reportedly has good convergent validity with more complex measures. Moreover, all the participants were girls.

More studies should be performed using the four-category model to study attachment and depression among boys and girls from different age groups. We suggest studying the relationship between attachment and other mental health variables (e.g., anxiety, adjustment, and life satisfaction) and investigating attachment styles in inter-cultural context (between western and eastern countries).

**Conclusion**

According to the results of this study, level of depression was comparatively lower in secure individuals, whereas it was extremely higher in individuals with ambivalent attachment. Owing to the fact that depression could be predicted based on the style of mother-infant attachment, the importance of early relationship between mother and infant is highlighted. Therefore, it is recommended that appropriate longitudinal studies be conducted in this regard. Furthermore, pregnant women need to be informed about the effects of different attachment styles on the psychological characteristics of children during adulthood. In the process, new data will be added to the main body of literature, and practical training could be performed as to promote the mental health of community.

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**Conflicts of interest**

The authors declare no conflicts of interest.

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