



Attachment styles in college students and depression: The mediating role of self differentiation

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ABSTRACT

Attachment theory has been critical in conceptualizing the development of human relationships and affect regulation. Previous research has reported relationships between insecure attachments, depressive symptoms, and self-differentiation. Insecure attachment refers to patterns of bonding that are dysfunctional in some way. Self-differentiation refers to the capacity of an individual to handle emotions and thoughts in relationships. This study explored the role of self-differentiation as a possible mediator between insecure attachment in romantic relationships and depressive symptoms among a sample of 175 college undergraduates. Participants completed the Experiences in Close Relationships Scale (ECRS), the Differentiation of Self Inventory (DSI), and the Center for Epidemiological Studies Depression Scale (CES-D). Preacher and Hayes' (2008) test for indirect effects was used to test the mediational model. As hypothesized, degree of insecure attachment predicted depressive symptoms through affect regulation. Implications of results in regards to mental health prevention among college students and future research are discussed.

1. Introduction

According to the American Psychological Association, a rising number of college students are getting treatment at college counseling centers for serious mental health issues. A 2016 survey conducted by the American College Health Association showed 52.7% of students who were surveyed reported feeling hopeless and 39.1% of students reported feeling so depressed that they were having difficult functioning during the past 12 month period (American Psychological Association, 2018). Due to the critical nature of this major life transition it is important to explore what factors are contributing to depression and depressive symptoms for college students. The psychological theory of attachment is one factor that can contribute to mental health during this transition (Kurland & Siegel, 2013).

The concept of attachment is defined as the biologically programmed method human infants are born with that allows them to form close emotional bonds with significant others (Surcinelli, Rossi, Montebanocci, & Baldaro, 2010). Attachment theory is one of the most significant conceptualizations for understanding human relationships and emotional regulation in the past 50 years (Illing, Tasca, Balfour, & Bissada, 2010). In the past few decades, research on attachment has been extended to better understand psychopathology in adults. Links have been documented between affect regulation, interpersonal

relationships, and negative affect (Wei, Vogel, Ku, & Zakalik, 2005). Attachment styles have been hypothesized to develop early in an individual's life and remain stable throughout, making these patterns of relating to other people a difficult target to change in a clinical setting (Illing et al., 2010). Understanding the pathways in which the relationship between attachment and psychological health works may help make attachment styles more acquiescent to change and therefore may help individuals who present with a maladaptive attachment style as adults.

Differentiation of self refers to the capacity of individuals to manage their emotions, remain thoughtful while experiencing strong emotions, and the ability to experience intimacy and independence in relationships (Skowron, Stanley, & Shapiro, 2009). Individuals who are highly differentiated have less emotional reactivity and are better able to regulate their emotions. They are better able to think clearly when stressed and are more capable of having intimate connections with others while retaining a clearly distinct sense of self (Skowron et al., 2009). Individuals who are less differentiated experience more emotional reactivity and are less able to regulate their emotions (Bowen Center for the Study of the Family, 2011). One way they may be more reactive is by cutting off or shutting down emotionally, when responding to stress. Individuals who are less differentiated also have more difficulty with intimacy and are often uncomfortable with

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intimacy and/or autonomy (Skowron et al., 2009). Some research shows that these individuals report greater psychological distress (Murray, Daniels, & Murray, 2006). An additional study found that individuals who are less differentiated report more psychiatric symptoms (Thornberg & Lyvers, 2010).

2. Attachment Theory

John Bowlby was an influential psychoanalyst who believed that issues in mental health and behavior problems could be attributed to early childhood. Bowlby's widely known and accepted theory of attachment (1973) suggested that children are born biologically pre-programmed to form bonds, or attachments, because this is crucial for survival (Bowlby, 1973).

Attachment theory, as proposed by John Bowlby, conceives of attachment behaviors as a result of an evolutionary biobehavioral system between primary caregivers and young children. Attachment relationships that function well allow for children to explore their environment progressively with the knowledge that they may return to their parent or "secure base" in times of need (Roberts, Gotlib, & Kassel, 1996). The theory is that all infants develop some form of attachment based upon the behaviors of their central caregivers. The individual differences in those behaviors are believed to give rise to different forms of attachment in childhood and across the life span. These cognitive schemas that develop in infancy are thought to remain stable throughout adolescence and adulthood and influence interactions and interpretations of interactions throughout life (Ciechanowski, Sullivan, Jensen, Romano, & Summers, 2003).

This cognitive framework is a mental representation or guide for understanding the world, others, and one's self. Bowlby suggests that an individual's interactions with others are guided by recollections and expectations from this internal model; according to Bowlby (1969) the primary caregiver acts as a prototype for future relationships via the internal working model (Bowlby, 1969). Later Mary Ainsworth explored individual differences in attachment quality and was the first to identify three distinct attachment styles. Secure attachment was defined by infants who were confident and easily soothed by caregivers. Insecure resistant attachment was exhibited by infants who were clingy and dependent and unable to reunite with caregivers. Insecure avoidant attachment was shown in infants who withdrew and would cut off from caregivers upon reunion (Bowlby, Ainsworth, & Bretherton, 1992).

The two internal working models of insecure attachment identified are anxious insecure attachment and avoidant insecure attachment. Individuals who are high in anxious attachment have high anxiety in relationships, are easily distressed, feel unworthy, and worry excessively about their relationships. Individuals who are high in avoidant attachment are more likely to suppress their emotions, often react in an unresponsive way, and tend to avoid emotional intimacy (Cooper, Shaver, & Colling, 1998).

The concept of attachment is typically discussed in the context of very young children and infants and their relationships with caregivers. Attachment theory hypothesizes that internal working models that individuals develop during infancy determine their security as children as well as individual differences in adult representations of attachment (Waters, Hamilton, & Weinfield, 2000). Research by Waters et al. (2000) examined the stability of attachment from infancy to late adolescence and early adulthood and found that 72% of the participants received the same classification in adulthood that they did in infancy suggesting stability of attachment orientation over time. This finding provides strong support for Bowlby's expectation that individual's conceptualizations of attachment relationships can be stable across significant segments of the life span. Scharfe and Bartholomew (1994) reported similar findings in a study that looked at attachment stability over time.

While historically attachment research has focused on the implications of the parent-child relationship for social development, more

recent links suggest this relationship affects physical and psychological health as well. Recent empirical literature suggests that personal relationships and attachment styles have multiple health implications for adults (Feeney, 1999). Attachment styles in adult populations have been associated with a wide range of health related outcomes including negative attitudes (Roberts et al., 1996), psychological distress (Frey, Beesley, & Miller, 2006), depressive symptoms (Eng, Heimberg, Hart, Schneier, & Leibowitz, 2001), and anxiety disorders (Eng et al., 2001). In fact, a recent meta-analysis on attachment research found a consistent relationship between parental bonding and development of depressive symptoms and anxiety disorders (Lima, Mello, & Mari, 2010).

Roberts et al. (1996) investigated how attachment styles in adulthood might be indirectly associated with depressive symptoms. After surveying 225 college students they found that participants who were more secure tended to have fewer dysfunctional attitudes, greater self-esteem, which predicted fewer depressive symptoms. Data from this study indicated that the relationship between adult attachment style and depression was mediated by maladaptive beliefs about self-worth and self-esteem. The implications of this finding are such that adults who are not securely attached tend to have dysfunctional attitudes, and low self-esteem, which then contributes to depressive symptoms (Roberts et al., 1996).

The influence of attachment styles in romantic relationships has been studied in recent years. Simpson (1990) examined the impact of secure, anxious and avoidant attachment styles on romantic relationships. He followed 144 couples over a six-month period, assessing emotions, indicators of trust, interdependence, commitment and satisfaction. Data from this study indicated that those individuals who were more avoidant in attachment style reported that their relationships were defined by less trust, commitment and overall satisfaction. It was found that individuals who displayed anxious and avoidant attachment styles had more occurrence of negative emotions and even emotional distress than their securely attached counterparts (Simpson, 1990).

3. Differentiation of self: a product of family systems theory

Bowen's family systems' theory, originated in 1950, describes the family as a complex emotional unit. According to this theory, it is the very nature of a family to be intensely connected emotionally and this dynamic has a profound effect on each member. Family members profoundly affect each other's feelings, thoughts, and actions and solicit each other's approval, attention, and support and react to each other's expectations, needs, and distress (Bowen Center for the Study of Family, 2011).

According to Bowen's family system theory family relationships and dynamics determine how this perception of self and emotional system develops and the degree to which it does so. Once developed, the self and emotional wiring is believed to remain stable unless the individual makes a conscious long-term effort to change it (Bowen Center for the Study of Family, 2011).

Moreover, individuals who have a low level of differentiation from the family rely heavily on the acceptance and approval of others; so much so that they often change what they think and feel in order to conform. They are less able to regulate their emotions and have a difficult time separating their thoughts from intense emotional reactions. Individuals who have a high level of differentiation do not rely on others for acceptance and approval and while they recognize the necessity of some dependence on others, they are able to stay clear headed and calm in the face of conflict and rejection. Everyone is subject to problems in their lives; however, families and individuals who are less differentiated are more vulnerable to episodes of heightened chronic anxiety which contributes to mental and physical health problems (Bowen Center for the study of the family, 2011). Skowron and Friedlander (1998) developed the Differentiation of Self Inventory to

measure levels of differentiation. Emotional reactivity refers to the degree to which an individual is able to remain calm in response to great emotionality of others. Individuals who are poorly differentiated and therefore are likely more emotionally reactive tend to make decisions based on emotions rather than intellect. Emotional cutoff may occur when an individual is overwhelmed by emotion in the family and is described as being aloof and isolated from others (Skowron & Friedlander, 1998).

Hooper (2007) used attachment theory and family systems theory to explain the adverse effects of children taking on parenting roles. Family systems theory is believed to contribute to attachment theory to create an exceptional model to explore relationship processes (Hooper, 2007).

Few studies have empirically tested the structural relationships between attachment and differentiation of self. Demidenko, Tasca, Kennedy, and Bissada (2010) found attachment avoidance to be negatively associated with differentiation of self in a clinical sample of women with eating disorders. They also found attachment anxiety to be negatively related to differentiation of self. These results support developmentally based theories that propose that attachment dimensions embedded in early experiences with family have an impact on the development of one's identity (Demidenko et al., 2010).

Similarly, Thornberg and Lyvers (2010) found an inverse relationship between anxious attachment and differentiation of self. In this study, anxious attachment significantly predicted emotional reactivity. These data support the idea that anxious attachment predicts greater emotional reactivity and that having difficulty with emotional regulation may be related to psychiatric symptoms. Researchers suggest the need for future research on insecure attachment in relation to interpersonal functioning and substance abuse or other psychiatric issues (Thornberg & Lyvers, 2010).

Bowen's theory suggests that individuals who are less differentiated have poorer psychological adjustment and react with higher dysfunction in response to stress and thus suffer from more psychological and physical symptoms (Peleg-Popko, 2002). In support of this theory Peleg-Popko (2002) found that level of differentiation predicted psychological well-being in young adults in such a way that individuals who were highly differentiated had more favorable psychological outcomes whereas those who were highly differentiated reported lower levels of interpersonal conflict.

Hooper and DePuy (2010) found support for the predictive nature of differentiation of self on depressive symptoms, whereby emotional reactivity and emotional cutoff were associated with depression in the expected directions. The higher individuals were on these two DOS subscales, indicating lower levels of self differentiation, the more depression they reported. They also found differentiation of self to be a mediator between family conflict and depressive symptoms. This finding suggests that level of differentiation may be the link between how we relate with family members and depressive symptoms.

Few studies have examined attachment in a population of college students and no studies have empirically tested whether affect regulation serves as a mediator between dimensions of attachment and depressive symptoms (Wei et al., 2005).

Research done by Wei et al. (2005) tested a mediational model in which emotional reactivity was found to be a mediator between attachment anxiety and negative mood and interpersonal problems. Similarly, emotional cutoff was found to be a mediator between attachment avoidance and negative mood and interpersonal problems (Wei et al., 2005). It is important to note the difference between negative mood studied by Wei et al. (2005) and the clinical measurement of depressive symptoms in the current study. The present study extends this research by examining the possible mediating role of affect regulation strategies linking attachment insecurity styles and depressive symptoms.

The current study hypothesized that the association between anxious insecure attachment and depression would be mediated by emotional reactivity. It was expected that there would be a positive

indirect effect between anxious insecure attachment and depressive symptoms through emotional reactivity rather than emotional cutoff due to previous findings that anxious attachment is significantly related to a more reactive coping style and that this coping style would be related to higher levels of depression (Lopez, Mauricio, Gormley, Simko, & Berger, 2001). It was also hypothesized that the association between attachment avoidance and depression would be mediated by emotional cutoff. It was expected that there would be a positive indirect effect between avoidant insecure attachment and depressive symptoms through emotional cutoff rather than emotional reactivity due to the Wei et al. (2005) finding that emotional cutoff was a mediator in the relationship between attachment avoidance and negative mood (Wei et al., 2005).

4. Method

4.1. Participants

A total of 175 students from Central Connecticut State University participated in the study (125 females, 50 males). The age of participants ranged from 18 to 50 with over 92% falling between the ages of 18–25. Over 74% of participants were first and second year students; 80% were White, 13% Latino, and 7% African American. Participants were recruited through the Department of Psychological Science participant pool and they received course credit for their participation in the research. Approval was given by the Human Studies Council at Central Connecticut State University.

4.2. Measures

Attachment style was measured using the Experiences in Close Relationships Scale (ECRS; Fraley, Waller, & Brennan, 2000). The ECRS is a 36-item self-report measure of adult romantic attachment. The measure uses a 7-point Likert scale ranging from 1 (disagree strongly) to 7 (agree strongly) in which participant's rate how well the statement describes their typical feelings in romantic relationships. The ECRS was created from 14 other attachment measures available at the time and includes two attachment dimensions, Anxiety and Avoidance. The Anxiety subscale, which was used to measure anxious insecure attachment, includes 18 items and measures fear of rejection and pre-occupation with abandonment. A sample item from the Anxiety subscale is "I worry about being abandoned." The Avoidance subscale, was used to measure avoidant insecure attachment, includes 18 items and measures fear of intimacy and discomfort in getting close to others or dependence on others. A sample item from the Avoidance subscale is "I am nervous when partners get too close to me." Higher scores on each measure indicate higher attachment anxiety or avoidance. Brennan, Clark, and Shaver (1998) reported coefficient alphas of 0.91 and 0.94 for the Anxiety and Avoidance subscales, respectively.

Level of differentiation was measured using the Differentiation of Self Inventory (DSI; Skowron & Friedlander, 1998). This self-report instrument was developed to measure constructs from Bowen's family systems theory. The inventory is a 43-item self-report measure that focuses on significant relationships and current relationships with family members in the family of origin. A Likert response scale format is used, ranging from 1 (not at all true of me) to 6 (very true of me). The Differentiation of Self Inventory contains four sub-scales: Emotional Reactivity (11 items), I-position (11 items), Emotional Cutoff (12 items), and Fusion with Others (9 items). Given past research suggesting the possible mediating role of emotional reactivity and emotional cutoff between attachment and psychological well-being only the emotional reactivity and emotional cutoff subscales were used. An item from the emotional reactivity sub-scale is, "I wish that I weren't so emotional." An example item for emotional cutoff is "My spouse or partner could not tolerate it if I were to express to him or her my true feelings about some things." Scores on each subscale are totaled. Higher

total scores, therefore, reflected greater emotional reactivity or emotional cutoff. Internal reliabilities in the original study for the subscales of interest are as follows: ER = 0.84 and EC = 0.82 (Skowron & Friedlander, 1998).

Depression was measured using the Center of Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). The CES-D is a 20 item self-report scale that was designed to evaluate symptoms of depression in a general population. It consists of questions rated on a 4-point Likert scale format ranging from 0 (none of the time) to 3 (most or all of the time) and inquires as to the frequency with which each of the 20 events was experienced within the previous week. A sample item on the CES-D is “I felt that I could not shake off the blues even with help from my family or friends.” Scores for 4 items are reversed and then all 20 items are added to get the total score. Scores on the CES-D can range between 0 and 60 with a score above 16 indicating that the person has experienced some depression in the past week. The CES-D has established internal consistency alpha = 0.87 and construct validity (Lal & Bartle-Haring, 2011).

A demographic questionnaire created for the current study asked participants for background information such as gender, current age, race/ethnicity, and year in college.

4.3. Procedure

Individuals were recruited for research participation through the Online Psychological Science participant pool at Central Connecticut State University and completed the instruments online. This is an online tool that allows researchers to post their studies and potential participants can then sign up by internet to participate. Research participants were clearly informed that their participation in the study was solely on a volunteer basis and that they could stop at any time. Participants responded to the questionnaires using Select Survey, a web based survey program. The participants were asked to complete three survey measures as well as a short demographic questionnaire. Students were given class credit for participation.

5. Results

Means and standard deviations for attachment styles, differentiation of self and depressive symptoms are shown in Table 1, along with correlations among all variables. Examination of skewness showed no evidence that any variables were substantially skewed. Correlations showed significant relationships ($p < .05$) between all pairs of variables except avoidant insecure attachment and emotional reactivity.

We examined whether age and gender (see Table 1) were significantly related to both depression and either of the attachment or self-differentiation variables. Age did have a small relationship with avoidant attachment (younger people were significantly higher) but age did not significantly relate to self-differentiation or depression, so it could not act as a common cause (i.e., could not produce a spurious relationship). Gender related significantly to emotional reactivity

(females were higher) but to no other variables, so it also could not produce a spurious relationship. Therefore, we did not control for these variables in the mediation analyses.

Hypothesis 1 (H1) stated that emotional reactivity would mediate the relationship between anxious insecure attachment and depressive symptoms. Hypothesis 2 (H2) stated that emotional cutoff would mediate the relationship between avoidant insecure attachment and depressive symptoms. Preacher and Hayes’ (2008) bootstrapping approach (with their SPSS macro) was used to test the indirect effects. Both hypothesized mediation/indirect effects were tested in a single model with two predictors (anxious insecure attachment and avoidant insecure attachment), two mediators (emotional reactivity and emotional cutoff) and one outcome (depression). The model included and tested non-hypothesized indirect effects in addition to the hypothesized ones (see Fig. 1). Because the SPSS macro is set up for a single predictor we ran the model twice, each time with one attachment style specified as the predictor and the other as a covariate (as described by Hayes, 2013, p. 193).

Estimation involved several steps. First, path coefficients (see Fig. 1) were estimated using regression analysis. Second, the indirect effect for each hypothesis was calculated as the product of the two constituent path coefficients (e.g., for H1, the first path was from anxious insecure attachment to emotional reactivity, and the second path was from emotional reactivity to depressive symptoms). Third and finally, bootstrapped confidence intervals were calculated to test each indirect effect for significance. The confidence interval allows a significance test – if the 95% confidence interval does not include zero, the indirect effect is significantly different from zero ($p < .05$).

Results are shown in Table 2 and Fig. 1; Fig. 1 displays the unstandardized and standardized path coefficients, and Table 2 shows coefficients and CIs for the indirect effects. Regarding H1, the indirect effect of anxious insecure attachment on depressive symptoms through emotional reactivity was positive and significant with a coefficient of 0.08 (the 95% CI ranged from 0.03 to 0.14). The standardized regression coefficients were calculated at 0.71 for the ‘a’ path and 0.22 for the ‘b’ path, and the standardized indirect effect was 0.16. Hypothesis 1 was therefore supported; the indirect effect through emotional reactivity was significant and positive. Results also indicated that the direct effect of anxious insecure attachment on depressive symptoms was significant with a standardized coefficient of 0.25.

Results for H2 show that the indirect effect of avoidant insecure attachment on depressive symptoms through emotional cutoff was positive and significant with a coefficient of 0.06 (the 95% CI ranged from 0.03 and 0.12). The standardized coefficients were 0.39 from avoidant insecure attachment to emotional cutoff, and 0.30 from emotional cutoff to depressive symptoms, and the standardized indirect effect was 0.12. Hypothesis 2 was therefore supported; the indirect effect through emotional cutoff was significant and positive. Results also indicated that the direct effect of avoidant insecure attachment on depressive symptoms was not significant.

Also note that both non-hypothesized indirect effects were

Table 1
Means, standard deviations, and correlations for study variables.

Variable	Mean	SD	1	2	3	4	5	6	7
1. Anxious insecure attachment	56.20	21.85	0.94						
2. Avoidant insecure attachment	49.28	20.38	.52*	0.95					
3. Emotional reactivity	39.23	11.38	.59*	0.14	0.89				
4. Emotional cutoff	30.02	10.60	.61*	.60*	.54*	0.87			
5. Depressive symptoms	15.15	10.78	.61*	.43*	.55*	.63*	0.92		
6. Age ^a	1.31	0.73	−0.09	−0.16*	−0.02	−0.09	−0.12	−	
7. Gender (0 = M; 1 = F)	0.71	0.45	0.02	−0.07	.35*	0.01	0.07	−0.08	−

Note. Coefficient alphas appear on the diagonals (diagonal elements for age and gender are left blank).

^a Coding for age categories: 18–21 years = 1; 22–25 years = 2; 26–30 years = 3; 31–40 years = 4; 41–50 years = 5.

* $p < .05$.

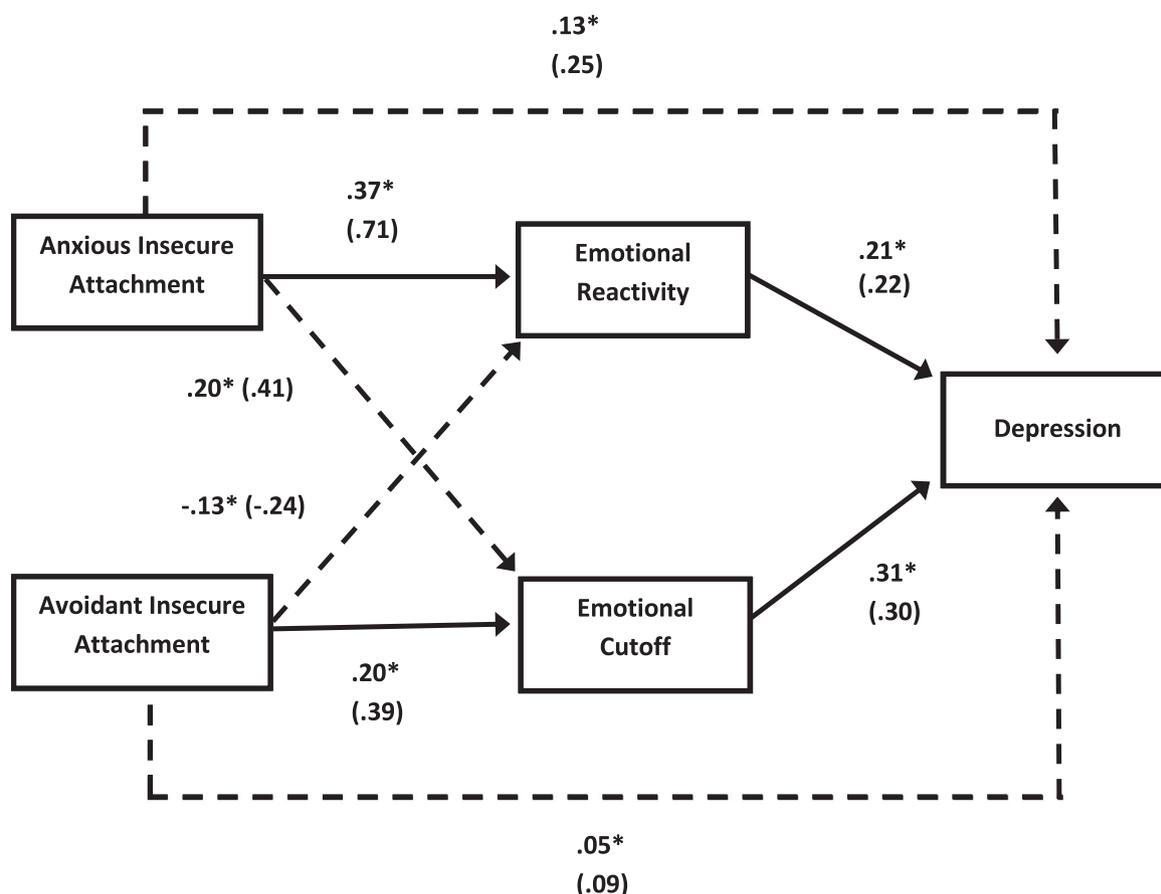


Fig. 1. Indirect effects of anxious insecure and avoidant attachment on depressive symptoms through emotional reactivity and emotional cutoff. Non-hypothesized paths are represented by dashed arrows. Unstandardized coefficients are shown with standardized coefficients in parentheses.

* $p < .05$.

statistically significant. The indirect effect of anxious insecure attachment through emotional cutoff was positive, while the indirect effect of avoidant insecure attachment through emotional cutoff was negative (see Table 2).

6. Discussion

The purpose of the present study was to help explain the mechanism through which insecure attachments are related to depressive symptoms, thus we investigated the indirect (mediating) effects of insecure attachment styles on depressive symptoms through affect regulation systems. More specifically, H1 which investigated the indirect effect of anxious insecure attachment on depressive symptoms through emotional reactivity was supported. Emotional reactivity refers to the degree to which an individual is able to remain calm in response to emotional reactions of others. It was proposed that emotional reactivity would mediate the relationship between anxious insecure attachment and depressive symptoms due to the tendency of these individuals to be more expressive of their distress in relationships (Wei et al., 2005), and that lower emotional reactivity has been shown to predict fewer psychological symptoms (Skowron et al., 2009). This finding suggests that individuals who exhibited a more anxious insecure attachment were more likely to be more emotionally reactive predicting higher depressive symptoms.

H2 which predicted that the indirect effect of avoidant insecure attachment on depressive symptoms would be mediated by emotional cutoff was also supported. Emotional cutoff refers to the degree to which individuals isolate themselves and their emotions when faced with a threatening emotional experience or intense feelings. It was

proposed that emotional cutoff would mediate the relationship between avoidant insecure attachment and depressive symptoms due to the tendency of these individuals to repress their distress in relationships and to cutoff their emotional reactions (Wei et al., 2005) and that emotional cutoff has been shown to negatively predict levels of psychological distress (Skowron et al., 2009). This finding suggests that individuals who exhibited a more avoidant insecure attachment were more likely to cutoff emotionally predicting higher depressive symptoms.

It is important to note the non-hypothesized finding that the effect of anxious attachment on depressive symptoms was mediated by emotional cutoff and the indirect effect was positive. This suggests that individuals who exhibited an anxious attachment style were more likely to cutoff their emotions, predicting higher depressive symptoms. These findings are in contrast to Wei et al. (2005) who did not find the relationship between attachment anxiety and negative mood to be mediated by emotional cutoff. Findings by Spokas, Luterek, and Heimberg (2009) suggest that individuals with social anxiety use emotional suppression to a greater degree than their non-socially anxious peers. The relationship was partially mediated by the belief that emotions should be kept in control and that showing emotions is a sign of weakness. It could be possible that those who are anxiously attached may also suppress their emotions which cut them off from important people in their lives. It would be important to further examine the possible relationships between anxious attachment, suppression of emotions and psychological well-being.

Another non-hypothesized finding was that the effect of avoidant insecure attachment on depression was mediated by emotional reactivity and the indirect effect was negative. This suggests that

Table 2
Indirect effects for attachment styles on depressive symptoms through emotional reactivity and emotional cutoff.

Predictor (Attachment)	Total effect	Direct effect	Total indirect effect	Path 'a' – predictor to mediator	Path 'b' – mediator to depression	Indirect effect (ab)	95% CI	
							Lower bound	Upper bound
Anxious insecure attachment Mediator: emotional reactivity	.26*	.13*	.14*	.37*	.21*	.08*	0.03	0.14
Mediator: emotional cutoff				.20*	.31*	.06*	0.03	0.11
Avoidant insecure attachment Mediator: emotional reactivity	.08*	.05*	0.04	–0.13*	–.21*	–0.03*	–0.06	–0.01
Mediator: emotional cutoff				.20*	.31*	.06*	0.03	0.12

Notes. Analyses are based on 5000 bootstrapped resamples. Bias corrected 95% confidence intervals are reported.
* $p < .05$.

individuals who exhibited an avoidant insecure attachment style were less likely to be reactive with their emotions, predicting higher depressive symptoms. This finding further supports research by Brenning, Soenens, Braet, and Bosmans (2011) that individuals who are avoidant in their attachment are much more likely to use emotional regulation strategies that suppress their emotions rather than display their emotions outwardly. They also found, consistent with the present study, that both avoidant insecure attachment representations were related to depressive symptoms (Brenning et al., 2011).

The current findings are consistent with previous research that has observed the relationship between adult attachment styles and psychological distress (Roberts et al., 1996). Additionally, the present findings are consistent with previous research that has linked insecure attachment styles to different affect regulation strategies as well as affect regulation strategies to psychological distress such as negative moods and interpersonal problems (Wei et al., 2005). These findings are also consistent with previous research that found support for lower emotional reactivity and emotional cutoff to be predictive of better psychological health outcomes (Skowron et al., 2009).

6.1. Contributions

The major contribution of the present study was that it was the first to investigate the mechanism by which attachment styles may influence depressive symptoms through affect regulation strategies. Previous research has focused on links between insecure attachment and affect regulation strategies and negative mood (Wei et al., 2005). However, this was the first time it was proposed that affect regulation may be the link between insecure attachment styles and depressive symptoms. Different affect regulation strategies have been linked to dimensions of insecure attachment (i.e. anxious insecure and avoidant attachment) (Fuendeling, 1998). Individuals who are more anxiously attached tend to express their distress and are emotionally reactive whereas individuals who are more avoidant in their attachment presentation tend to detach and cutoff from their emotions (Wei et al., 2005). The present study looked further into the relationship by specifically investigating an indirect effect and added to the existing literature in that it provided a partial explanation for why insecure attachment styles predict depressive symptoms. Additionally, the non-hypothesized finding that the effects of anxious attachment on depressive symptoms was mediated by emotional cutoff and the indirect effect was positive provides insight into where the literature might go from here. The other non-hypothesized finding was that the effect of avoidant insecure attachment on depression was mediated by emotional reactivity and the indirect effect was negative. Similarly, this suggests a great area of interest with questions remaining and provides direction for future research.

A second contribution of the present study is that it replicated several findings that have shown relationships among the variables. The results of the indirect effect for both hypotheses add to the pool of research that found relationships among insecure attachment, emotional reactivity and cutoff, and negative mood (Wei et al., 2005). The results also replicated research that provides evidence of the relationships between insecure attachment styles and negative mental health outcomes (Frey et al., 2006).

A third contribution of the present study is that it extended the generalizability of findings by focusing on a population of college students. Few research studies have examined attachment in a college aged population and this was the first study to empirically test whether distinct affect regulation strategies served as mediators between attachment and depressive symptoms in college students. The present study is one of the few attachment studies that focused on a population of college aged young adults and therefore the results can be generalized to that population.

6.2. Limitations

A limitation of the present study is that the design was non-experimental and cross-sectional; therefore, cause and effect conclusions cannot be drawn. Longitudinal research would provide more valid data on the impact of attachment insecurity and differentiation of self over time on outcomes such as depressive symptoms and it would be interesting and meaningful to see what role these variables play on health at other points in an individual's life. One could argue however that attachment is developed in infancy and has been found to be stable into adulthood and thus, it could be argued that self differentiation, emotion regulation and depressive symptoms occur after the development of attachment styles which could be considered a stable trait which suggests order of temporality. Also, self differentiation is a construct describing a process in childhood and adolescence one can argue would predict adult depressive symptoms.

A second limitation is the generalizability of the sample. The sample was from a predominantly white young adult population of undergraduate college students in the Northeastern United States. The results obtained may be difficult to generalize to other populations including other age groups, races, and ethnicities. Future research should explore these relationships among a more racially diverse college student population as well as an older more racially diverse population.

6.3. Implications

One theoretical implication of the research findings is that we gained a better understanding of the mechanism through which insecure attachment styles impact depressive symptoms. The research findings identify differentiation of self and emotional regulation as important variables to consider when understanding the pathway between insecure attachment presentations and depressive symptoms. This finding can be framed in terms of Bowen's Family Systems Theory by providing support to the theory that the way we develop as a "self" and connect emotionally has great implications for future functioning. High levels of differentiation and therefore greater emotional regulation is thought to lead to more favorable mental health outcomes (Bowen Center for the Study of Family, 2011). In the present study support was found for Bowen's theory; lower levels of differentiation predicted less emotional control which predicted less favorable mental health outcomes.

Another theoretical implication of the research findings is that the results support recent research findings linking early attachment bonds to physical and psychological health later in life (Feeney, 1999). Historically, attachment has focused on the implications of the parent-child relationship for social development in childhood. However, more recently, empirical literature suggests that personal relationships, beginning with parental bonds, have multiple health implications for adults (Feeney, 1999). The present finding that insecure attachment styles are related to outcomes in terms of depressive symptoms provides additional support for this theory.

Another implication of the findings relates to other variables that may be responsible for the relationship between insecure attachment styles and depressive symptoms. The present study did find support for affect regulation acting as a mediator between insecure attachment and depressive symptoms. Further research should help to uncover what other variables may mediate or moderate the relationship between insecure attachment styles and depressive symptoms.

One final practical implication of the present findings is that there may be ways to reduce depressive symptoms by enhancing possible protective factors that contribute to depression. Encouraging more emotional control and "self" identity could serve as a protective factor against depressive symptoms, even in the presence of an insecure style of attachment. Additionally, knowing ones romantic attachment style and differentiation could be used to identify students who are at an increased risk of depression. These both serve as critical tools that could

be used in therapeutic settings in college students. One example of this use is in family therapy outlined by Bowen Center for the Study of the Family (2011), in which one of the most important goals is in helping family members move to a better level of differentiation of self. It is essential to know that having an insecure style of attachment predisposes an individual to negative mental health outcomes. The use of attachment-based interventions in a therapeutic setting can be used to change this trajectory. Enhancing one's differentiation of self and teaching methods to increase one's feelings of security in relationships may protect against these outcomes and favor healthier development.

Declarations of interest

None.

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