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Attachment to Parents and Depressive Symptoms in College Students: The Mediating Role of Initial Emotional Adjustment and Psychological Needs

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Abstract

The aim of the present study was to explore the role of parental attachment in students' depressive symptoms. We have examined whether initial emotional adjustment and psychological needs would serve as a mediator of the relationship between attachment dimensions (anxiety and avoidance) and depressive symptoms.

A sample consisted of 219 students (143 females) randomly selected from the University of Rijeka, Croatia, with mean age 19.02 years. Participants provided self-report on the Experiences in Close Relationship Inventory and The Student Adaptation to College Questionnaire at the beginning of the first year of college, and The Basic Psychological Needs Satisfaction Scale and Beck Depression Inventory-II at the third year of college.

Results of hierarchical regression analyses confirm that emotional adjustment had a full mediation effect on anxiety dimension and partial mediation on avoidance dimension. Only a partial mediation effect of psychological needs for autonomy and relatedness between attachment and depressive symptoms was found.

The findings of this study give support to the researches indicating the importance of parental attachment for college students not only through its direct effects on depressive symptoms, but also through effects on the initial emotional adjustment and satisfaction of psychological needs. The results of the mediation analysis suggest that both attachment dimensions and emotional adjustment as well as psychological need satisfaction have a substantial shared variance when predicting depressive symptoms and that each variable also gives a unique contribution to depressive symptoms.

Keywords: parental attachment, attachment dimensions, psychological needs, depressive symptoms, college students

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Introduction

Transition to college is for many students a challenging developmental milestone that requires multiple adaptations and results in different subjective experiences. Some students are better able to adjust to the new experience unlike some others who would be more prone to develop psychological symptoms, such as depression. Roussis and Wells (2008) indicate high increase in depression among college students in the last decade. Depression as a common mental disorder in university students represents a risk factor for students' dropout or academic underachievement (Ibrahim, Kelly, Adams, & Glazebrook, 2013). Variability in students' psychological adjustment implies the importance of studying factors that contribute to specific reactions to the college experience (Pritchard, Wilson, & Yamnitz, 2007).

Although primary attachment theory intends to explain the relationship with parents in early childhood, it can be also applied to better understand the adjustment process for college students (Kenny & Rice, 1995). Researches supported the importance of parental attachments beyond childhood (Cutrona, Cole, Colangelo, Assouline, & Russell, 1994; Kenny & Rice, 1995; Vivona, 2000) and confirmed the influence of attachment quality to college students' adjustment (Fass & Tubman, 2002; Mattanah, Lopez, & Govern, 2011).

Secure attachment to parents is linked to a broad range of college adjustment outcomes from prediction of better relationships with others and greater self-worth to sense of academic competency and emotional adjustment (Larose, Bernier, & Tarabulsky, 2005; Rice, FitzGerald, Whaley, & Gibbs, 1995). In their meta-analysis Mattanah et al. (2011) stressed that the relationship between parental attachment and college student adjustment is small-to-moderate. Although it means that, besides attachment, other factors also contribute to student functioning, it also proves the significant role of emotional relations with parents even during the period of emerging adulthood.

Adjustment to a new college environment is a stressful situation in which students could benefit if they have supportive parents. For students who left home a secure attachment to parents provides a secure base by supporting student exploration and mastery of the college environment and by remaining available as a source of advice and comfort when needed (Kenny, 1987). Perception of parent availability and support can reduce anxiety, increase environmental exploration, and contribute to competence in new interactions (Kobak & Sceery, 1988). Students who perceive their parents as a secure base continue to seek them out in situations of stress as a source of support when needed which could contribute to their lower levels of distress during the college transition (Kenny, 1987; Kenny & Rice, 1995).

Attachment theory proposes that working models of self and the model of others develop through experiences with caregivers. These working models can be

generalized to new relationships, guiding cognition and behaviour (Bowlby, 1982). Relation with sensitive and consistently available caretakers results in the development of internal working model of self as worthy of love and a model of others as trustworthy and predictable while relationship with insensitive and unreliable caretaking may result in a view of self as unworthy and a view of others as untrustworthy (Bowlby, 1982). In the model of self and the model of other (Brennan, Clark, & Shaver, 1998) attachment is viewed in terms of two orthogonal dimensions: attachment anxiety and attachment avoidance. While attachment anxiety is related to fear of rejection and high emotional reactions to obtain attention and support from others, attachment avoidance refers to fear of intimacy and dependence, and keeping distance from others in order to avoid disappointment (Brennan et al., 1998). According to this model, high score on either one or both dimensions means insecure attachment, while a low score on both dimensions assumes secure attachment orientation (Brennan et al., 1998).

Among different determinants of depression, insecure attachment style, as well as dimensions of attachment anxiety and avoidance have been reported as one of the risk factors (Bifulco, Moran, Ball, & Bernazzani, 2002; Liu, Nagata, Shono, & Kitamura, 2009; Roberts, Gotlib, & Kassel, 1996; Wei, Heppner, & Mallinckrodt, 2003; Wei, Mallinckrodt, Russell, & Abraham, 2004; Wei, Russell, & Zakalik, 2005b). Consistent with Beck's cognitive model of depression (Beck, 1967), a negative view of self and others, associated with insecure attachment, may increase vulnerability to depression. Securely attached individuals view the social world as generally more positive, trustworthy, and benevolent compared to those high in either one or both attachment dimensions (Collins & Read, 1990). While there is consistency in linking insecure attachment styles with psychological well-being or disorder, there are still no consistent findings which insecure style or attachment dimension is more vulnerable (Bernier, Larose, Boivin, & Soucy, 2004; Bifulco et al., 2002; Kafetsios & Sideridis, 2006). Some studies show the links between depressive symptoms and anxious/ambivalent styles, and others highlight avoidant styles. Bifulco et al. (2002) found that insecure attachment was significantly related to clinical depression with little discrimination between types of insecure attachment styles, although avoidance in the angry-dismissive style was highly related to depression. Inconsistencies in linking attachment and depression could be attributed to the variation in the type of relationship on which the measures are based (general relationship, romantic relationships or relationships with parents) or to the differences that have been compounded by dimensional vs. categorical approaches to attachment assessment (Bifulco et al., 2002).

Besides a possible direct effect of attachment, researchers are also interested in mediators between attachment and depression. Several mediators of the relationship between attachment and distress were identified, such as dysfunctional attitudes and low self-esteem (Roberts et al., 1996), ineffective coping (Wei et al., 2003), maladaptive perfectionism (Wei et al., 2004), self-reinforcement, need for

reassurance from others (Wei, Mallinckrodt, Larson, & Zakalik, 2005a), self-worth (Kenny & Syrin, 2006), loneliness, and university integration (Carr, Colthurst, Coyle, & Elliott, 2013). The relationship between attachment style dimensions and depressive symptoms could also be mediated by basic psychological need satisfaction (Carr et al., 2013; Wei, Shaffer, Young, & Zakalik, 2005c). Unsatisfied needs result in ineffective strategies (e.g. maladaptive perfectionism) that could further result in depressive symptoms (Wei et al., 2005c).

One possible mechanism for satisfying basic psychological needs may be through individuals' attachment (Carr et al., 2013). Individuals who have a sense of secure attachment may experience satisfying their basic psychological needs (Deci & Ryan, 2000): autonomy (desire to self-organize experience and behavior, and to behave in accordance with one's integrated sense of self); competence (desire to interact with one's environment in an efficient way); relatedness (desire to feel connected to others). Self-determination theory (SDT) focuses on the factors that enable individuals to meet their psychological needs; in other words, people are more securely attached to those who meet their needs (La Guardia, Ryan, Couchman, & Deci, 2000). A secure base helps children to explore their environment with self-confidence, build a sense of autonomy and self-competence, and feel a sense of closeness with others (e.g., Pietromonaco & Barrett, 2000). Thus, amongst the principal reasons that attachment security relates to well-being is that secure attachments provide an arena in which persons are able to satisfy their basic psychological needs (La Guardia & Patrick, 2008).

Studies of mediators of the relationship between attachment and psychological adjustment could be important for counselling psychologists. If mediators (e.g., effective coping or basic psychological needs satisfaction) between attachment and adjustment are found, then counselling psychologists can help individuals relieve their depression by focusing interventions on target mediators, for example helping in meeting basic psychological needs (MacKinnon, Krull, & Lockwood, 2000; Wei et al., 2005c). This could be more easily achieved than attempting to alter the quality of attachment. According to the theory of attachment this is a more difficult process (Bowlby, 1982). Wei et al. (2005c) found that mediating role of basic psychological needs between attachment and depression depends on dimensions of attachment: psychological needs partially mediated the relationship between attachment anxiety and depression, and fully mediated the relationship between attachment avoidance and depression. The type of insecure attachment could be related to different aspects of college adjustment. That is why students with high levels of attachment anxiety and/or avoidance may need different and distinct interventions for improving their adjustment to college.

From the above review, it appears that there are relationships between attachment, psychological needs and well-being but still there are some inconsistent findings regarding possible distinct mediating effects between two attachment dimensions and depressive symptoms. If distinct mediators are found for each

dimension of attachment this mediators could be used as a specific targets in counselling intervention with students. Therefore the aim of this research was to explore possible direct and indirect effects of attachment in students' depressive symptoms. We have examined whether initial emotional adjustment and psychological needs would serve as a mediator of the relationship between attachment dimensions (avoidance and anxiety) and depressive symptoms. Unlike most studies that analysed attachment in romantic relationship, the present study is focused on attachment to parents as a possible direct or indirect determinant of psychological adjustment of college students. We were interested in expanding on previous researches by using prospective study design, respecting dimensional approach of attachment, analysing specific psychological needs, and controlling for gender as well as change in place of residence.

Based on theoretical perspective and previous empirical findings we have formulated several hypotheses: We expect that attachment to parents is important not only through its direct effect on depressive symptoms, but also indirectly through effects on initial emotional adjustment and satisfaction of psychological needs. Parental attachment could be a significant factor for emotional adjustment at the beginning of college and the initial emotional adjustment predicts later psychological well-being. Parental attachment could be significant for psychological needs which if unsatisfied could lead to depressive symptoms.

Method

Participants

The sample consisted of 219 students (143 females) randomly selected from the University of Rijeka, Croatia, with mean age 19.02 years ($SD=1.14$). Participants were selected using the method of random numbers according to the official list of first-year students. Forty-nine percent of participants lived with their parents, while the remaining students lived alone or with their relatives, friends or partners.

Measures

The participants reported on their age, gender, faculty and college year and residential status. Residential status refers to two questions: students were asked if they had changed their place of residence because of college as well as with whom they are living now.

Attachment was measured using a modified *Experiences in Close Relationship Inventory* (Brennan et al., 1998) that was adapted for a Croatian sample and shortened, while maintaining the psychometric characteristics of the original

instruments (Kamenov & Jelić, 2003). According to authors this modified scale may be also used for measurement of attachment to a family member. This shortened version of the questionnaire consists of 18 items, each rated on a scale from (0) *I do not agree* to (7) *I fully agree* to assess the extent to which the item corresponds to the person's general feelings towards his mother and father. The questionnaire has two subscales: avoidance (9 items) and anxiety (9 items), with a good reliability score (for avoidance $\alpha=.83$ for mothers and fathers; for anxiety $\alpha=.71$ for mothers and $\alpha=.69$ for fathers). Because of the high correlation between the corresponding dimensions of attachment to mother and father (for avoidance $r=.71$, for anxiety $r=.89$), combined scores for mothers and fathers on both dimensions were calculated. The anxiety dimension refers to the fear of rejection or abandonment (sample items: *I worry about being abandoned; I worry that she/he won't care about me as much as I care about her/him*), whereas avoidance reflects the experience of discomfort caused by closeness and addiction to others [sample items: *I feel comfortable sharing my private thoughts and feelings with her/him* (reverse coded); *I am nervous when she/he gets too close to me*]. Higher scores indicate more anxiety or avoidance. Correlation between avoidance and anxiety was .18 ($p<.01$). A high level on either dimension alone or on both dimensions in combination means insecure attachment orientation, while low levels of both dimensions is typical for secure attachment.

Adaptation to college was assessed using *The Student Adaptation to College Questionnaire* (SACQ) (Baker & Siryk, 1999). Croatian version of the questionnaire (Živčić-Bećirević, Smojver-Ažić, Kukić, & Jasprica, 2007) with 65-items on three subscales (academic adjustment, social adjustment and emotional adjustment) was applied. Items are rated on a 9-point Likert scale from (0) *does not apply to me* to (8) *fully applies to me*. In this study only emotional adjustment subscale was used ($\alpha=.91$). This subscale has 25 items related to students' psychological and physical feelings (sample items: *I have been feeling tense or nervous lately. I have felt tired much of the time lately*). All items were reverse coded. Higher scores indicate better emotional adjustment.

The Basic Psychological Needs Satisfaction Scale - general version is adapted from the Basic Psychological Needs Satisfaction - work version (Gagné, 2003). We used the Croatian version adapted by Brdar (2006). The scale has 21 items concerning the needs for competence, autonomy, and relatedness. On a 7-point scale participants indicate the extent to which the psychological needs are generally satisfied in their life. Examples of items are: *I feel like I am free to decide for myself how to live my life* (autonomy), *I really like the people I interact with* (relatedness), and *I often do not feel very capable* (competence). Cronbach alphas were .79 for autonomy scale (7 items), .80 for relatedness scale (8 items), and .63 for competence scale (6 items). Higher scores reflect greater satisfaction of needs.

Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996) was used to measure depressive symptom severity in students. It is a well-established self-report inventory, which consists of 21 items representing symptoms of depression such as sadness, crying, suicidal ideation, and loss of interest occurring in the past 2 weeks. Items are rated on a scale ranging from 0 to 3 with ascending severity, for example, *I do not feel sad* (0) to *I am so sad and unhappy I can't stand it* (3). The BDI-II has been shown to correlate highly with other measures of depression (Steer & Clark, 1997), supporting its construct validity. The English BDI-II demonstrated excellent internal consistency (Cronbach's alpha = .92). We have used the Croatian version of BDI-II (Beck, Steer, & Brown, 2009) which has also proved high internal consistency (Cronbach's alpha = .90), the same as we have found in the present sample. The total BDI-II score ranges between 0 and 63, with scores of 0 to 11 indicating minimal depression, scores of 12 to 19 mild depression, scores of 20 to 27 moderate depression, and scores of 28 to 63 severe depression, according to Croatian standardization (Beck et al., 2009).

Procedure

This study is part of a larger longitudinal study on risk and protective factors of student adjustment to college. Data on students' attachment to parents, adaptation to college and demographics were collected at the end of the first semester (the first year of study), while the data on psychological needs and depressive symptoms were collected at the third year of college when students are expected to finish the undergraduate cycle.

In order to match the data, students wrote their academic identification number on questionnaires while the name of the student was not written anywhere. Students were informed about the purpose and method of the data collection and voluntarily participated in the study. At any moment they could drop out without any consequences.

Results

According to descriptive data (Table 1) most students in our sample are emotionally well adjusted at the first year of study, as well as after three college years. Eighty percent of students had scores in the minimal range on BDI (lower than 12) (Beck et al., 2009).

Table 1. *Intercorrelations, Means and Standard Deviations for Relative Scores on the Attachment Dimensions, Emotional Adjustment to College, Psychological Needs, and Depressive Symptoms*

| Variables | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. |
|--|------|-------|-------|--------|--------|--------|--------|--------|
| 1. Gender | -.09 | -.15* | .05 | .06 | -.11 | -.02 | -.01 | -.12 |
| 2. Residential Status | - | .09 | .10 | -.29** | -.11 | -.06 | -.10 | .13 |
| 3. Anxiety Att. | | - | .19** | -.47** | -.19** | -.22** | -.23** | .29** |
| 4. Avoidance Att. | | | - | -.30** | -.23** | -.17* | -.14* | .28** |
| 5. Emotional Adj. | | | | - | .35** | .28** | .37** | -.40** |
| 6. P.N.Autonomy | | | | | - | .72** | .61** | -.58** |
| 7. P.N.Relatedness | | | | | | - | .62** | -.59** |
| 8. P.N.Competence | | | | | | | - | -.47** |
| 9. BDI | | | | | | | | - |
| <i>M</i> | - | 3.94 | 5.79 | 5.42 | 4.99 | 5.85 | 5.20 | 7.01 |
| <i>SD</i> | - | 1.48 | 2.08 | 1.18 | 0.77 | 0.86 | 0.88 | 7.32 |
| Effect of Change of Residence (<i>t</i> -value) | | 1.29 | 1.52 | 4.43** | 1.88 | 0.81 | 1.66 | 2.11* |

* $p < .05$; ** $p < .01$

The correlations between the depressive symptoms and all other psychological variables were significant. Both dimensions of attachment were significantly correlated with emotional adjustment and depressive symptoms, with the highest correlation between anxiety dimension and emotional adjustment. Both attachment dimensions had a significant but low negative correlation with all three psychological needs.

In order to analyse possible differences in psychological variables regarding change of residence a series of *t*-test were applied (Table 1). Students who stayed at home had better emotional adjustment ($M_{\text{stayed}}=5.75$; $M_{\text{left home}}=5.07$), and less depressive symptoms ($M_{\text{stayed}}=5.94$; $M_{\text{left home}}=7.93$). Cohen *d* for emotional adjustment was 0.59, and for BDI was - 0.28. Although effect of change of residence was significant, both groups of students had relatively low depressive symptoms.

To examine the predictive effects of attachment dimensions to parents and initial emotional adjustment on student's depressive symptoms at the third year of college, hierarchical regression analyses was performed. Change of residence and gender were used at the first step of analysis as control demographic variables. Dimensions of attachment to parents were used at the second step of analysis as a relatively stable characteristic and emotional adjustment was entered at the third step of analysis as indicator of current functioning (Table 2).

Table 2. Results of the Hierarchical Regression Analysis with Attachment and Emotional Adjustment as Predictors of Depressive Symptoms

| Predictors | BDI | | |
|-----------------------------------|------------|-------|--------------|
| | β | R^2 | ΔR^2 |
| Step 1 | | .02* | |
| Step 2 | | | |
| Avoidance dimension of attachment | .16* | .14** | .12** |
| Step 3 | | | |
| Emotional adjustment | -.28** | .18** | .04** |

Note. The β coefficients in the last step are shown. Step 1 - gender, change of residence; Step 2 - anxiety and avoidance attachment; Step 3 - emotional adjustment.

* $p < .05$; ** $p < .001$

The combination of all the variables explained 18% of depressive symptoms' variance. After controlling gender and change of residence dimensions of attachment to parents significantly explained 12% of depressive symptoms, and initial emotional adjustment in the third step additionally explained 4% of the variance. The both dimensions of attachment were significant positive predictors of depressive symptoms in the second step and only avoidance dimension remained significant in the final step when emotional adjustment was entered. In the final step emotional adjustment was significant negative predictor.

The results suggest the possible mediation effects for anxiety dimension which was further analyzed in accordance with suggestions of Baron and Kenny (1986). A variable can be considered as a mediator if (a) the independent variable significantly predicts the dependent variable, (b) the independent variable significantly predicts the mediator variable, and (c) the effect of the independent variable on the dependent variable is diminished when the mediator variable is controlled for (entered simultaneously in the regression equation). Two types of mediation can occur: Full mediation means that independent variable in the third step is no longer significant, while partial mediation means that independent variable is reduced in comparison with the first equation (Kenny & Sirin, 2006).

For our data all requested precondition were met. Anxiety dimension was significant predictor of initial emotional adjustment ($\beta = -.47, p < .01$), as well as depressive symptoms ($\beta = .30, p < .01$). When effects of both anxiety dimensions and emotional adjustment were analysed, only emotional adjustment was significant predictor of BDI (β anxiety = .12, $p > .05$). This confirm full mediation effect of emotional adjustment on anxiety dimension, while on avoidance dimension emotional adjustment had partial mediation effect (still significant but reduced β coefficient).

In order to evaluate the predictive effects of attachment dimensions to parents and psychological needs on depressive symptoms we conducted another hierarchical regression analysis. Change of residence and gender were used at the

first step of the analysis, dimensions of attachment to parents were used at the second step of the analysis and psychological needs were entered at the third step of the analysis (Table 3). The reason for entering the variables is the same as in previously explained hierarchical regression analysis.

Table 3. *Results of the Hierarchical Regression Analysis with Attachment and Psychological Needs as Predictors of Depressive Symptoms*

| Predictors | BDI | | |
|-----------------------------------|---------|-------|--------------|
| | β | R^2 | ΔR^2 |
| Step 1 | | | |
| Gender | -.13* | .02* | |
| Step 2 | | | |
| Anxiety Dimension of Attachment | .12* | | |
| Avoidance Dimension of Attachment | .14** | .14** | .12** |
| Step 3 | | | |
| P.n. Autonomy | -.27** | | |
| P.n. Relatedness | -.26** | .44** | .30** |

Note. The β coefficients from the last step are shown. Step 1 - gender, change of residence; Step 2 - anxiety and avoidance attachment; Step 3 - P.n. = psychological needs.

* $p < .05$; ** $p < .001$

The combination of all the variables accounted for 44% of depressive symptoms' variance. After controlling for gender and change of residence, dimensions of attachment to parents significantly explained 12% of depressive symptoms, and psychological needs additionally explained 30% of the variance. Both dimensions of attachment were significant positive predictors of depressive symptoms and they remained significant even in the final step although their β coefficient were reduced (β for anxiety in the second step was .25, $p < .001$ and β for avoidance was .23, $p < .001$). In the final step the psychological need for autonomy and for relatedness were significant negative predictors. Although insignificant in the first step, gender becomes significant in the last step. Female students, with high avoidance and anxiety attachment dimensions and with less satisfied psychological needs for autonomy and relatedness reported to have more depressive symptoms at the third year of college.

With the purpose of further elaboration of the mediating effects of psychological needs, separate mediation analyses were performed for all combinations of two attachment dimensions and three psychological needs. All requested preconditions were met (Baron & Kenny, 1986): anxiety and avoidance dimensions were significant predictors of all three psychological needs (standardized coefficients ranged from .15 ($p < .05$) to .23 ($p < .01$)). For the anxiety dimension, standardized coefficients were reduced from .29 to .18 in combination with the need for relatedness, from .29 to .18 in combination with the need for

autonomy and from .29 to .21 in combination with the need for competency. For the avoidance dimension, β coefficients were reduced from .27 to .16 (need for relatedness), from .27 to .15 (need for autonomy) and from .27 to .21 (need for competency). In all the analyses similar patterns of results were obtained: both attachment dimensions had smaller but still significant β coefficient in combination with one specific psychological need in comparison to their single effects. These results confirm only partial mediation effect of psychological needs for autonomy and relatedness between attachment and depressive symptoms.

Discussion

The findings of this study give support to the researches indicating the importance of parental attachment for college students in the period of late adolescence and emerging adulthood (e.g. Kenny & Sirin, 2006; Mattanah et al., 2011). Consistent with our predictions the results provide evidence that students' insecure attachment at the beginning of college may be an important factor related to vulnerability for psychological problems during three college years. Change of place of residence is also related to psychological well-being: students who changed place of residence had lower initial emotional adjustment as well as more depressive symptoms after three college years. These results corroborate the notions that transition to college is a stressful experience for students who leave home for college (Crede & Niehorster, 2012).

Our results confirm direct effects of attachment to parents on depressive symptoms which are consistent with previous findings (Wei et al., 2003, 2004). Significant contribution of both anxiety and avoidance dimensions to depressive symptoms is in accordance with studies that stressed the fearful style of attachment (Marganska, Gallagher, & Miranda, 2013). This style of attachment refers to high anxiety and high avoidance and involves a negative view of self and others. Longitudinal studies show that only the fearful style is associated with a new episode of major depression (Bifulco et al., 2006) and with a greater severity of depressive symptoms at 3-year follow-up (Conradi & de Jonge, 2009). The importance of both attachment dimensions for depressive symptoms could be explained through the role of internal working model consistent with cognitive model of depression (Beck, 1967). A negative view of self and others associated with insecure attachment may increase vulnerability to depression (Carnelley, Pietromonaco, & Jaffe, 1994). Insecure attachment appears to lead to depressive symptoms in adulthood through its impact on self-worth contingencies and self-esteem (Kenny & Syrin, 2006; Roberts et al., 1996).

Attachment to parents is important not only through its direct effect on depressive symptoms, but also through effects on the initial emotional adjustment and satisfaction of psychological needs.

In exploring the role of attachment in depressive symptoms at the third year of college we have considered how students were emotionally adjusted after a few months of college experience and regarding their change of place of residence and gender. Emotional adjustment was better in students with lower both attachment dimensions which illustrates the importance of secure parental attachment in coping with new college experience (Mattanah et al., 2011). Insecurely attached students undergoing significant life changes due to transition to college have lower emotional adjustment. Furthermore, poor initial emotional adjustment to college modestly contributes to later depressive symptoms. While it fully mediates the relationship between the anxiety dimension and depression, it had only partial mediation on avoidance dimension. It could be assumed that the effect of attachment anxiety diminished because of a close link between anxiety attachment and emotional regulation: individuals with higher attachment anxiety are emotionally expressive but often cannot regulate their emotions effectively (Cooper, Shaver, & Collins, 1998). Students who score high on attachment anxiety tend to react to stressful events with intense distress and to ruminate on threat-related worries (Mikulincer, Shaver, & Pereg, 2003). On the other hand, the reason why emotional adjustment had only partial mediation on avoidance attachment dimension could be explained through findings that those with avoidant attachment appear to use suppression as a predominant emotion regulation strategy (Gross & John, 2003), and suppression has been linked to depression vulnerability (Ehring, Tuschen-Caffier, Schnulle, Fischer, & Gross, 2010). Avoidant individuals try not to acknowledge negative emotions and consequently may act emotionally without a full knowledge of the reasons for these negative emotions (Cooper et al., 1998).

Consistent with our hypotheses we have found a negative association between both attachment dimensions and college students' satisfaction of psychological needs for autonomy, competence, and relatedness. This is in accordance with the findings of some other studies (Carr, Colthurst, Coyle, & Elliot, 2013; La Guardia et al., 2000; Wei et al., 2005c), that also found a negative association of attachment anxiety and attachment avoidance with basic psychological needs satisfaction. According to attachment theory a secure relationship with parents provides a context for accomplishing the developmental tasks and our results support the idea that attachment could be a promoter of satisfaction of needs for autonomy and relatedness (La Guardia et al., 2000; La Guardia & Patrick, 2008). If caregivers are sensitive to their children's signals of emotional or physical needs, then the children may feel more secure and develop a sense of autonomy and self-competence (Pietromonaco & Barrett, 2000). According to Wei et al. (2005c) individuals with high levels of attachment anxiety tend to have a negative working model of self and are not aware of their basic psychological needs. On the other hand, individuals with high levels of attachment avoidance are likely to have a negative model of others and tend to believe that others are unavailable to satisfy these needs.

A comparison of the mediating role of the initial emotional adjustment and psychological needs revealed that satisfaction of basic psychological needs at the third year of college explains depressive symptoms better than the initial emotional adjustment when attachment was controlled. According to Self Determination Theory satisfaction of psychological needs is essential for psychological growth and well-being (Deci & Ryan, 2000) why it is expected that insufficient satisfaction of needs is related to more depressive symptoms. The importance of psychological needs found in this study is in accordance with the results of Vansteenkiste, Lens, Soenens, and Luyckx (2006). When these basic psychological needs are met, a person experiences lower levels of depression (Wei et al., 2005c).

Our results suggest the importance of the needs for autonomy and relatedness for depressive symptoms. Satisfaction of psychological needs for autonomy and relatedness is a major developmental task in late adolescence and emerging adulthood and therefore it is essential for their psychological well-being. Finding on the importance of both needs can be related to theories of college student adjustment that have stressed the normativity of separation-individuation process as precondition for autonomy development, as well as the attachment theories which emphasize that autonomy could be developed along with supportive relationship with parents (Allen, Hauser, Bell, & O'Connor, 1994; Kenny & Rice, 1995). Here obtained high positive correlation between the needs for autonomy and relatedness add to the results of other studies on the connection of these two needs. The need for autonomy involves a sense of volition and initiative that does not imply detachment from others why fulfilment of need for autonomy does not preclude feeling related to others. Ryan and Lynch (1989) found that autonomy is positively associated with relatedness and well-being.

We found that both dimensions of attachment remained statistically significant predictors of depressive symptoms even after controlling for the indirect effects mediated through psychological needs for autonomy, relatedness and competence. Unlike our findings, Wei et al. (2005c) found direct relationships only between attachment anxiety (and not avoidance) and depression but their respondents rate their general experience in romantic relationship and not in relation to mother and father. Satisfaction of psychological needs in the period of emerging adulthood could be met through relations not only with parents but also with friends and romantic partners. This could be a possible explanation for the results that, even after controlling for the effect of psychological needs, attachment dimensions were still a significant predictor.

The moderate level of explained variance of depressive symptoms implicates that some other variables unrelated to basic needs satisfaction may be also important for the feelings of depression in college students with high attachment anxiety and avoidance, which is in accordance with the multifactorial model of depression. For understanding the etiology of depression biological, environmental,

intrapersonal and interpersonal factors are assumed to play a role (Goodman & Gotlib, 1999).

Findings from our study corroborate previous studies in providing some suggestions for counselling college students with emotional problems. In counselling students with depressive symptomatology it is important to acknowledge the nature of attachment to parents as well as initial emotional adjustment to college, and satisfaction of psychological needs. The importance of initial emotional adjustment for later depressive symptoms stressed the significance of counselling interventions with students at the beginning of college especially for students with higher anxiety attachment dimension. Conversely, individuals with a high level of attachment avoidance appear to suppress their negative emotions and deprive themselves of social support that might alleviate their distress which makes them more vulnerable to depressive symptoms (Gross & John, 2003). However, attempting to change the quality of attachment is difficult for those with high avoidance who are less prone to revise their working model (Kafetsios & Sideridis, 2006). Furthermore, in order to reduce depressive symptoms a counsellor can help students to meet their psychological needs for relatedness and autonomy through alternative methods and discharging old ineffective strategies (Wei et al., 2005c).

This study has some limitations. It is based on correlational data, self-reported measures and it suffers from common method variance obtained from measures completed by the same informant. Our results reflect the responses of predominantly well-adjusted students with satisfied psychological needs and low depressive symptoms at the third year of college which limits generalizations only to a normative sample. It is possible that the relation between attachment dimensions and depression is different in a clinical sample (Carnelley et al., 1994).

A possible strength of our study is randomly-selected representative sample of students from different study disciplines although it is questionable if it remains representative during three years because of participants' attrition. Our research was prospective which enables conclusions about the contribution of parental attachment to later psychological adjustment. Unlike similar studies on depressive symptoms in which the model with two attachment dimension related to romantic attachment was applied (Liu et al., 2009) our study is focused on parental attachment. To further explore the role of attachment in depressive symptoms, future studies could compare the contribution of attachment to partner, parents and friends. Altogether, our results suggest that both attachment dimensions and emotional adjustment as well a psychological need satisfaction have a substantial shared variance when predicting depressive symptoms. Each variable also makes a unique contribution to depressive symptoms. Additional studies have to further examine these shared and unique effects.

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Apego hacia los padres y síntomas depresivos de los estudiantes universitarios: El papel mediador de la adaptación emocional inicial y las necesidades psicológicas

Resumen

El objetivo de este estudio fue investigar el papel del apego de los padres en los síntomas depresivos de los estudiantes. Hemos investigado si la adaptación emocional inicial y las necesidades psicológicas servirían como mediador en la relación entre las dimensiones de apego (ansiedad y evitación) y los síntomas depresivos.

La muestra consistía en 219 estudiantes (143 chicas) seleccionados al azar de la Universidad de Rijeka, Croacia, con la edad media de 19.02 años. Los participantes han proporcionado un informe del Inventario de Experiencias en Relaciones Cercanas y el Cuestionario de Ajustamiento Estudiantil a la Universidad al inicio del primer año de la universidad, y la Escala de Satisfacción de Necesidades Psicológicas Básicas y el Inventario de Depresión de Beck II en el tercer año de la universidad.

Los resultados del análisis de la regresión jerárquica confirman que la adaptación tuvo un efecto mediador completo sobre la dimensión de ansiedad y la mediación parcial sobre la dimensión de evitación. Se ha encontrado sólo el efecto mediador parcial de las necesidades psicológicas para la autonomía y la relación entre el apego y los síntomas depresivos.

Los resultados de este estudio apoyan a los investigadores que indican la importancia del apego de los padres para los estudiantes universitarios no sólo a través de sus efectos directos sobre los síntomas depresivos, sino también a través de los efectos sobre la adaptación emocional inicial y la satisfacción de necesidades psicológicas. Los resultados del análisis mediador sugieren que tanto las dimensiones de apego y adaptación emocional, como la satisfacción de necesidades psicológicas, tienen una considerable variación compartida al predecir los síntomas depresivos y que cada variable también ofrece una contribución única a los síntomas depresivos.

Palabras claves: apego de los padres, dimensiones de apego, necesidades psicológicas, síntomas depresivos, estudiantes universitarios

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