THESIS TITLE: The Effects of Attachment and Need Satisfaction on Well-being
The Effects of Attachment and Need Satisfaction on Psychological Well-Being

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Thesis Abstract

Efforts to promote psychological well-being have been a concern for researchers. While psychosocial factors have been identified as indicators of well-being, limited research has been conducted on the effects of attachment styles and need satisfaction on well-being. The present study examined the effects of need satisfaction (autonomy, competence, and relatedness), on the relationship between secure attachment and psychological well-being. The primary path of analyses predicted that securely attached individuals will perceive greater need satisfaction in their life, which in turn will lead to greater well-being. Undergraduate psychology students attending California State University San Marcos who had experienced a romantic relationship participated in this study. The hypothesis was not supported. Results showed that need satisfaction does not mediate the relationship between dimensions of attachment and well-being. The results have implications for mental health professionals to develop interventions targeting those psychosocial factors among students.

Key Words: Well-being, secure attachment, insecure attachment, Need-Satisfaction, autonomy, competence, relatedness.
The Effects of Attachment and Need Satisfaction on Psychological Well-Being

There is a rapidly growing population of college students in the United States. Unfortunately, many students struggle with mental health concerns. According to a 2004 survey by the American College Health Association, nearly half of all college students report feeling so depressed at some point in time that they have trouble functioning, and 15 percent meet the criteria for clinical depression. Depression is one of many psychological problems students suffer while in college. The consequences of not paying attention to mental health issues in students can be devastating. It is important to identify both direct and indirect effects of psychosocial factors related to college students’ well-being, which can then lead to the development of preventive strategies. The present study examined direct and indirect effects of attachment and need satisfaction in students’ psychological well-being. The result will help healthcare professionals to better serve students, especially targeting those factors.

Self-determination Theory

This thesis combines self-determination and attachment theory to understand well-being. Self-determination theory postulates three fundamental human needs that if satisfied lead to well-being. But if not satisfied, those needs can lead to pathology and illness (Deci & Ryan, 1980; 1995; Deci, Ryan 2000). These psychological needs are the need for autonomy (or self-determination), competence, and relatedness. In Self-Determination Theory (SDT), autonomy is conceptualized as a sense of choice,
initiative, and endorsement of the activities one performs. The need for Competence is conceptualized as having a sense of mastery over one’s capacity in the environment. Relatedness refers to feelings of closeness to significant others. Deci and Ryan (1995; 1980) used the analogy of a plant to explain the function of those needs. They stated that a plant needs water, minerals, and light in order to grow. Depriving the plant of any of those elements will reduce growth in the plant. Deci and Ryan suggested that similar process takes place in humans. They added that those psychological needs are universal and optimal functioning is achieved when the three needs are met.

**Need for Autonomy**

Autonomy exists when people decide to engage in activities based on their free-choice. Humans have natural tendencies to engage in exploration, manipulation, and curiosity beginning at birth (Ryan & Deci, 1995, 1980; Decharms, 1968). Research on autonomy emerges from motivation orientations and choice. Baker (2004) investigated the relationship between motivational orientations and factors leading to psychological well-being (e.g., stress, adjustment to school). The results indicated that participants with higher intrinsic motivation reported greater psychological well-being, less stress, and were better adjusted to their school environment. One implication for those results is that students who score high in intrinsic motivation probably choose better ways to cope with school demands, or they have a higher desire to learn. Similarly, Hein and Hagger (2007) showed that
intrinsic motivation is linked to greater self-esteem when used as a mediator between goal achievement and self-esteem.

The link between intrinsic motivation and well-being has also been shown experimentally. Langer and Rodin (1976) investigated the effects of choice and personal responsibility among the elderly in a nursing home. Residents were assigned to a particular floor and room based on availability. A floor was randomly selected for each treatment. Participants in the treatment group received information emphasizing their responsibility and choice regarding the activities they could perform. Those in the control group received general information on the staff’s responsibility for them. Results showed that those in the treatment group reported greater happiness and alertness compared to those in the control group. The findings implied that people experience greater happiness when given choice in the activities they perform.

**Need for Competence**

From SDT’s perspective, competence refers to the sense of mastery and efficacy in one’s interactions with the environment. Levesque, Zuehlke, Stanek, and Ryan (2004) expand on the definition of competence saying that humans have the need to experience satisfaction when exercising their own capabilities. In 1959, Robert White emphasized the role of competence in motivating human behavior. He believed that the feeling of efficacy resulted from repeated experiences of competitive behaviors. The development of competence (e.g., walking) comes, in part from maturation and learning. Research on motivation suggests that people who
feel unmotivated are more likely to feel incompetent, whereas people who feel self-
determined are more likely to feel competent (Black & Deci, 2000; Deci & Ryan,
between autonomous motivations and academic competence in well-being. They
found a positive correlation indicating that each of those constructs predicted self-
esteeem and life satisfaction.

Need for Relatedness

Relatedness is the need to be connected with others. Humans have the need to
be related to others for biological and evolutionary reasons (Deci & Ryan, 2000);
relatedness had a survival function among members of hunter-gather societies by
allowing them to share resources and help protect their offspring. In addition to the
evolutionary perspective, Bowlby (1980) supports the need for relatedness with
attachment theory. Attachment theory states that infants need to have responsive and
sensitive caretakers who react to their needs in a timely and appropriate manner.
When that is the case, a child becomes securely attached, gaining a sense of security
and interest in exploring the environment around him. Although research on the need
for relatedness is limited compared to the need for autonomy and competence, within
the self-determination framework relatedness is regarded as a fundamental human
need.

Differentiating autonomy from independence

Self-determination theory views autonomy as a key to understanding the
quality of behavioral self-regulation and it distinguishes autonomy from
independence. Within SDT, autonomy means to be self-regulated or behave according to one’s own choice. Ryan and Deci (2006) explained that the opposite of autonomy is heteronomy which refers to regulations outside the self. That is, people can behave in a certain way because of external reasons such as rewards, or pressure. SDT specifically distinguishes autonomy from independence, noting that one can be autonomously dependent or forced into independence (Ryan, 1993).

Among the three human needs, autonomy remains a controversial issue for some psychologists. Cultural relativists have difficulties conceptualizing autonomy within the SDT framework. For instance, Bandura (1989) conceptualizes autonomy as being independent or individualistic. Oishi (2000) defined autonomy as acting independently of external forces but he left out whether or not one endorses internal impulses for one’s behavior. In addition, Markus and Kitayama (1991) have argued that autonomy, individualism, and independence are Western values that would only predict behavior and well-being among individuals raised in accord with those values. There is no doubt that cultures value independence differently; some value the individualistic pursuit of goals where as others value collectivistic ones. However, it is likely that people from collectivistic cultures experience alienation when they act collectivistic only out of coercion. Cross-cultural research indicates that people who suggested that people have an innate need to grow and master their environment; he behave autonomously in collectivistic cultures experience greater well-being (Chirkov, Ryan, and Willness, 2005; Chirkov, 2005).

**Need satisfaction and well-being**
Within SDT, extensive research has documented the positive outcomes of need satisfaction and well-being in children (Veronneau, Koestner, & Abela, 2005) and college students (Chirkov, Ryan, and Willness, 2005; Chirkov, 2005). Veronneau, Koestner, and Abela (2005) assessed the independent contribution of each psychological need to well-being in children. Regression analyses indicated that each need (autonomy, competence, and relatedness) was positively associated with current levels of well-being. Chirkov, Ryan, and Willness (2005) applied self-determination theory to investigate basic need support and well-being in Canadian and Brazilian college students. Specifically, they measured the degree of internalization of cultural values and well-being. Results showed that autonomy was positively related to well-being in both cultures and that the more students internalized their cultural values, the greater their psychological well-being.

Similarly, Chirkov (2005) investigated the relationship between degree of internalization of cultural norms and well-being among South Korean, Russian, Turkish, and North American students. He predicted that there would be a positive association between autonomy and well-being regardless of culture membership. The results supported the hypothesis. The more autonomous their cultural practices were, the greater their psychological well-being was regardless of culture membership. Levesque, Stanek, Zuehlke, and Ryan (2004) examined whether the relationship between positive feedback and well-being was mediated by autonomous motivation and perceived competence among American and German college students. Structural equations revealed that feedback was positively related to perceived
competence and autonomous motivation in both samples. They further found that autonomy was indirectly associated with well-being through its relationship with competence. In the present study, need satisfaction, including the need for autonomy, competence, and relatedness, was the mediator.

**Measurements of Well-being**

Well-being is an important concept in psychological research. It has been studied from both the subjective and objective perspectives. In 1950, the term of subjective well-being (SWB) was introduced as an indicator of quality of life (Ryff & Keyes, 1995). Subjective well-being measures are indicators of happiness and cognition. Among the most valid and reliable measures of SWB are the positive and negative affect scales (PANAS) as well as the life satisfaction scale. The PANAS measures positive and negative emotions. The life satisfaction scale assesses the degree to which people are satisfied with their lives. At the more objective level, the study of psychological well-being embraces a wider array of perspectives. Psychological well-being (PWB) draws on formulations of human development, mental health, and challenges in life (Keyes, Shmotkin, Ryff, 2002). Assessments of PWB includes measures of personal growth, purpose in life, positive relations with others, and depression. Participants respond to a self-report inventory designed to measure those dimensions. Respondents rate their questions in a 6-point Likert type scale format where 1 indicates strongly disagree and 6 indicates strongly agree.
Within SDT, well-being has been conceptualized using concepts from both subjective and objective perspectives: one emphasizes happiness and the other emphasizes human potential. Some researchers using the SDT perspective on well-being have measured well-being using the satisfaction with life, self-actualization, self-esteem, and depression scales (Chirkov, 2001; Chirkov et al., 2003; Chirkov, Ryan, & Willness, 2005). They combine the above scales to form an overall index of well-being. That is, they sum the standardized scores of the four well-being scales (the depression score is reversed) to obtain an overall score of well-being. These authors argued that the scales have good reliability and validity due to their extensive use in other studies. In the present study, well-being will be measured using subjective and objective measures including the Self-Esteem Scale, the Satisfaction with Life Scale, and the Center for Epidemiological Studies depression scale. Those scales have demonstrated good reliability and construct validity.

**Attachment in children and adults**

Attachment is a strong emotional bond that binds people together (Creasey, 2006). Attachment theory identifies three types of attachment relationships on the basis of caregiver and infant interactions (Ainsworth et al., 1978). The three attachment types are categorized as secure, anxious/ambivalent, and avoidant. Secure attachment is experienced when the caregiver is responsive and sensitive to the child’s needs. Anxious/ambivalent attachment results when the caregiver is inconsistently available for response when the child seeks attachment. Avoidant attachment results when the caregiver neglects or rejects care for the infant.
According to Ainsworth et al., securely attached children tend to explore their environments more compared to insecure children (anxious/ambivalent and avoidant). In addition, Bowlby (1980) suggests that infants develop working models, mental representations based on his or her interactions with the caregiver, which are carried into adulthood.

Attachment theory has been expanded beyond the field of development. Social psychologists have used attachment theory to explain human behavior from relationships with parents, peers, and romantic partners. Research in adults has focused on how the internal working models that all of us have constructed from our experiences in early relationships affect romantic relationships (Bartholomew & Horowitz, 1991). Attachment theory assumes that whether an adult is secure or insecure in his or her relationship may be a partial reflection of his or her attachment experiences in early childhood. Bartholomew and Horowitz proposed four types of internal working models associated with views of the self and other people. They propose that securely attached individuals develop positive views about themselves and others, and do not feel afraid about being in a relationship. Preoccupied individuals develop positive views about other people but feel unloved; they tend to become overly dependent on others. Dismissing individuals develop positive views of themselves, they do not trust other people, and they deny that they need relationships. Fearful individuals do not care about how they view themselves and others. They are afraid of being in intimate relationships.
Attachment in romantic relationships

Research on romantic love suggests that romantic love is an attachment process experienced differently by different people because of variations in their attachment histories (Mikulincer & Shaver, 2005; Hazan & Shaver, 1998; Fraley & Shaver; 1998). Hazan and Shaver (1998) investigated whether people with different attachment styles experience important relationships differently, and whether the respondents’ working model of the self affects their relationship, in a community sample. Results showed that secure lovers describe their most important love as happy, friendly, and trusting. They emphasized being able to accept and support their partner despite their partner’s faults. Avoidant lovers were characterized by fear of intimacy, emotional highs and lows and jealousy. The anxious/ambivalent subjects describe their love feelings as involving obsession, desired for union, emotional highs and lows, extreme sexual attraction and jealousy. Regarding differences in working models, Hazan and Shaver showed that secure lovers said romantic love exists and wanes after time but sometimes it lasts forever. Avoidant lovers said that romantic love does not exist and it is really hard to find a person to fall in love with. Anxious/ambivalent claimed that it is easy to fall in love but they rarely find what they call real love. Like secure lovers, anxious/ambivalent believe that romantic love wanes overtime.

Similarly, Fraley and Shaver (1998) investigated the attachment behavior expressed by different attachment styles in couples separating, and not separating, from each other, in a public airport. Results showed that the behaviors expressed
among separating couples were similar to those expressed by children when separated from their caregiver such as crying, clinging, holding hands, and hugs. However, there were behaviors, not observed in children but expressed by adults, such as mutual caregiving and expressions of sexuality. Regarding attachment style, Fraley and Shaver reported that highly avoidant people were less likely to seek and maintain proximity with their partners and to provide support for their partner. Anxious individuals showed more distress when separating from each other. They mentioned that couples who were involved in a romantic relationship for a short period of time expressed more protest behaviors.

**Attachment and well-being**

In most of the attachment literature, well-being is assessed using measures of depression, psychological distress, and marital satisfaction. Whiffen, Kallos-Lilly, and MacDonals (2001) examined the relationship between attachment and depression in couples. They found that depressed women rated themselves as more insecure and more fearfully attached compared to nondepressed women. Scoot and Cordova (2002) investigated the relationship between marital dysfunction, attachment style, and depressive symptoms among married couples. A sample of 91 married couples responded to measures of adult attachment styles in romantic relationships, depressive symptoms, and marital satisfaction. They predicted that there was no relationship between marital satisfaction and depression symptoms but that the relationship was moderated by attachment styles. Their hypothesis was supported. They found that wives who reported themselves low in secure attachment...
scored low in marital adjustment and high in depressive symptoms, whereas those high in secure attachment scored high on marital adjustment and low on depression. Husbands and wives who rated themselves as more secure rated their marriages as better adjusted. Anxious wives rated their marriages as more distressed, as did husbands who rated themselves as more avoidant.

Limited research has assessed the relationship between attachment styles and well-being using positive constructs for well-being such as life satisfaction, happiness, and self-esteem. Quimby and O'Brian (2006) investigated predictors of well-being among nontraditional female students. They assumed that many nontraditional female students experience psychological distress due to balancing family and academic roles. Findings showed that secure attachment, self-efficacy, and perceived social support predicted well-being. Securely attached females who were more confident in managing school work reported greater self-esteem, less psychological distress, and greater life satisfaction. Webster (1997) examined the association between attachment styles and well-being in a sample of community elderly adults. They found that participants who scored high on attachment security were happier than those who scored low.

La Guardia, Ryan, Couchman, and Deci (2000) investigated the mediating effect of need satisfaction on the relationship between attachment styles and well-being in college students within different attachment figures (e.g., mother, father, friend). Results showed that securely attached individuals reported greater well-being. They found a direct relationship between secure attachment and well-being.
(r = .50), a strong (r = .65) relationship between need satisfaction and secure attachment and a small (r = .25) relationship between need satisfaction and well-being. In testing for mediation, they reported mediation, in which the relationship between secure attachment and well-being was reduced from \( r = .50 \) to \( r = .34 \). At present, no study has focused exclusively on the relationship between attachment styles in romantic relationships, need satisfaction (autonomy, competence, and relatedness), and well-being. It is important to examine the relationship among those variables to improve our understanding of how individuals involved in a romantic relationship feel regarding their general psychological needs and how they perceived their overall well-being based on their attachment style. The findings can help counselors address issues on attachment styles and need satisfaction when promoting students’ well-being.

**Measurements of attachment**

Adult attachment has been measured using interviews, self-reports, observations, or a combination of those measures. According to Simpson (1998), the Adult Attachment Interview (AAI) assesses adults’ representations of early attachment experiences on which participants respond to 18 open ended questions. During the interview, participants were asked to discuss their feelings of separation and love from their attached figures such as mother, and father. Responses are tape-recorded and transcribed by experienced coders. The coders score and classify attachment into four different classifications: dismissing, secure, preoccupied, and unresolved.
Self-reports measures used to assess adult attachment include the Adult Attachment and the Attachment Styles Scale (Hazan & Shaver 1987; Collins & Read, 1990; Brennan, Clark & Shaver, 1998). Hazan and Shaver developed the Adult Attachment Scale, which is a categorical measure for attachment. In this scale, participants read descriptions of secure, avoidant, and anxious/ambivalent attachment styles and indicate the one that best describes how they feel in romantic relationships. It is important to mention that this scale has one item per attachment style and that in real research this may not be a desirable scale to use. According to statisticians, a scale needs to have at least three items to measure a domain.

Self-reports have been developed to assess attachment styles as a continuous variable. Collins and Read (1990) developed the Adult Attachment Scale which has 18 items representing three domains (closeness, dependence, and anxiety). The closeness subscale assesses comfort with closeness. The dependency subscale assesses the ability to depend on others in time of need, and the anxiety subscale assesses fears about separation or abandonment. Participants rate their responses on a 7-point Likert type scale where 1 indicates (strongly disagree) and 7 (strongly agree). The scale measures relational behavior, especially self-disclosure and reliance on attachment figures, in times of stress. Intercorrelations among the subscales had shown good reliability. Collins and Read also report good convergent and discriminant validity.

Brennan, Clark, and Shaver (1998) developed a 36-item attachment scale to capture whether the same kind of individual differences observed in infants might be
observed in adults. The authors used factor analysis to identify two factors, which they named attachment-related anxiety and attachment related avoidance. People who score high on attachment-related anxiety tend to worried whether their partner is available and responsive. People who score on the low end of this variable are more secure on the perceptions of their partners. Regarding attachment related avoidance, people who score high prefer not to rely on others. People on the low end of this dimension are more comfortable being intimate with others and feel more secure depending on others. A typical secure adult is low in those dimensions. Fareley, Waller, and Brennan (2000) revised the scale and called it the Experience in Close Relationships Revised Scale (ECR-R). They use item response theory to provide coefficient alphas for each item; the scale showed good internal reliability for each dimension.

**Present Study**

The purpose of the present study was to examine two models with regard to the linkages among dimensions of attachment, need satisfaction, and psychological well-being. A mediation model was also tested. The model is based on self-determination theory, which states that humans have three basic needs that need to be satisfied to achieve optimal well-being. The primary model proposes that there is a direct relationship between secure attachment and psychological well-being, and that need satisfaction could mediate the relationship. That is, securely attached students will score low in the dimension of attachment-related anxiety and avoidance. In addition, they would score high on need satisfaction and well-being. It
is predicted that securely attached individuals are more likely to experience greater need satisfaction because they perceived greater freedom of choice, feel more competent, and experience greater relatedness in their life; in turn, satisfaction of those needs enhanced well-being. In this study, attachment from romantic relationships was assessed because researchers have suggested that people tend to have true attachment relationships only with their parents and romantic partners (Hazan & Zeifman, 1994).

Method

Participants

Participants were 120 (92 females and 28 males) introductory psychology students at CSUSM. Their ages ranged from 18 to 50 years-old, with a \( M = 21.48 \), \( SD = 4.18 \). The ethnic composition of the sample was White (59.2%), Hispanic (19.2%), Asian American (8.3%), African American (2.5%) and other (10%). Their marital status included 91% who were single, and 8.3% who were married. Eighty percent indicated they were involved in a romantic relationship for at least three months and 52 percent indicated they were involved for more than a year. Participants received extra-credit for participating in the study.

Measures

Attachment styles. Secure attachment was measured using the Experience in Close Relationship (ECR-R) Scale (Fareley, Waller, & Brennan, 2000). This is a 36-item scale tapping two subscales: attachment-related anxiety, which has 18 items, and attachment-related avoidance, which also has 18 items. A sample item in the
related-anxiety scale stated "I’m afraid that I will lose my partner’s love" whereas a sample item in the related avoidance scale states "I find it difficult to allow myself to depend on romantic partners." Respondents rated their answers on a 7-point Likert type scale where 1 indicates strongly disagree and 7 strongly agree. To obtain responses for the attachment-related anxiety and the related avoidance, the average of a person’s responses were obtained from each subscale. The authors reported an internal consistency alpha level of .94 for the Avoidance subscale and .91 for the anxiety subscale. The validity of the scale is documented by factor analyses. In the present sample, Cronbach alpha was .93 for anxiety and .90 for avoidance.

*Psychological need satisfaction.* The Need Satisfaction Scale was used to measure need satisfaction in general (Deci et al., 2001). The scale has 21 items, tapping three needs (autonomy, competence, and relatedness). The autonomy subscale has seven items. A sample item in autonomy states, "I feel like I am free to decide for myself how to live my life." The competence subscale has 6 items. A sample item states "I have been able to learn interesting new skills recently." The subscale for relatedness has 8 items. A sample item states "people are generally pretty friendly towards me." Factor analyses demonstrated the extent to which the variables reflected the concept for autonomy, competence and relatedness. The internal reliability for autonomy was .65, competence .70, and for relatedness .76.

The *Social Connectedness Scale* was used to assess the degree of interpersonal closeness experience between individuals and their world (friends, peers, and society). The Scale consists of 20 items (10 positive and 10 negative)
rated on a 6-point Likert type scale ranging from strongly disagree (1) to strongly agree (6). A sample item is, “I feel close to people.” The scale has good internal reliability (.92) and prior evidence for validity (Lee, Keough, & Sexton, 2002). High scores represent greater relatedness or belongingness. Internal consistency for the scale was .92.

The Self-Esteem Scale (Rosenberg, 1965) assessed self-esteem. The scale has 10 items that assess general feelings of self-worth. A sample item is, “I take a positive attitude toward myself.” Responses were rated on a 4-point Likert type scale ranging from strongly agree (1) to strongly disagree (4). Internal consistency was reported as .86 and a 2 weeks test retest reliability coefficient of .85 was found (Bowling, 2005). Internal consistency for the scale was .86.

The Satisfaction with Life Scale (Diener, Emmons, Larson, & Griffin, 1985) assessed a person’s global judgment of life satisfaction. The scale consists of 5 items; a sample item is, “In most ways my life is close to ideal.” Respondents rated their answers on a 7-point Likert type scale where 1 indicates strongly disagree and 7 indicates strongly agree. Diener et al. (1985) found favorable psychometric properties for the SWLS, including a test retest reliability coefficient of .82 after 2 months with a sample of undergraduate students. In addition, they reported that scores on the SWLS correlated moderately highly with other measures of subjective well-being. Internal consistency for the scale was .85.
Depression. Depressive symptomatology was assessed using the Center for Epidemiological studies’ Depression scale (CES-D) (Radloff, 1977). Participants were asked to report the frequency of depressive symptoms within the past week, rating their responses on a 4-point Likert type scale ranging from 0 (rarely or none of the time) to 3 (most or all of the time). Radloff (1977) reported a coefficient alpha of .85 for internal consistency of the CES-D depressive scale when tested in the general population. Validity of the scale was supported by correlation with other self-measures. It correlated positively with the Bradburn Negative Affect scale and negatively with the Bradburn Positive affect. Internal consistency for the scale was .87, in the present study.

Procedure

Participants were told that the study consisted of completing a questionnaire designed to understand factors related to psychological well-being. They were informed that the survey had questions regarding demographics (e.g., age, gender, time involved in a romantic relationship) perceptions about romantic relationships, their general feelings for free choice, competence and relatedness, and well-being. Participants were tested individually in psychology labs after providing informed consent. They were treated according to the guidelines of the Ethical Code of Conduct of the American Psychological Association (2001). That is, students were told that they have the right to leave from the study at any time without being
penalized. Participants were debriefed and thanked for their participation in the study.

**Power analysis.**

A priori power analysis was conducted to determine the number of subjects needed to obtain a medium effect. According to Mattew, Fritz, and Mackinnon (2007), 120 participants were needed to obtain a statistical power of .8 (medium effect) at a significance level of .05 (two-tail test).

**Path analysis**

The statistical procedure used to analyze the data in the present study was multiple regression analysis emphasizing the four causal steps test discussed by Baron and Kenney (1986). Sobel test was used to test for mediation. The purpose of the Sobel test was to determine whether a mediator carried the influence of the criterion variable to the outcome variable. A mediator is a variable that explains the relationship between a predictor or criterion and an outcome variable. In the proposed model, need satisfaction was the mediator.

**Hypotheses**

There are four steps necessary to test whether need satisfaction in college students mediates the relationship between attachment and well-being (see Figure 1). Dimensions of attachment-related anxiety and avoidance were used to run two regression analyses. Attachment-related anxiety was the predictor variable in one model and attachment related avoidance in another model. First, the relationship between attachment-related anxiety and well-being (depression) was tested based on
the prediction that secure attachment will predict well-being. Second, the effect of secure attachment on need satisfaction was tested based on the assumption that secure attachment predicted need satisfaction. Third, the effect of need satisfaction on well-being controlling for secure attachment was tested based on the prediction that need satisfaction predicted well-being when controlling for secure attachment. Each of those effects must be significant. The final and most important step establishes whether need satisfaction actually mediates the relationship between attachment and well-being. A similar procedure was done in the second model.

The amount of mediation was determined as the amount of reduction in the effect of attachment-related anxiety and avoidance and well-being when controlling for need satisfaction. When the effect of need satisfaction was controlled for in the analysis, the effect on attachment-related anxiety and avoidance on well-being should be reduced. Sobel test was used to verify that the degree of mediation was significant.

Results

Preliminary Analyses

Descriptive statistics including means, standard deviations, reliabilities, possible and actual scores are presented in table 1. Overall, average scores on the attachment-related anxiety scored low \((M = 51, SD = 21.15, N = 120)\) as well as in attachment related avoidance \((M = 45, SD = 16.58, N = 120)\) suggesting that respondents had a secure attachment style. In the need satisfaction scale, respondents scored moderately high \((M = 94.61, SD = 6.96, N = 120)\) indicating a good sense of
need satisfaction in their life with respect to autonomy, competence and relatedness. Well-being measures showed that participants scored high in self-esteem ($M = 23.30$, $SD = 4.75$, $N = 120$) and life satisfaction ($M = 26.38$, $SD = 6.09$, $N = 120$) but low in symptoms of depression ($M = 12.75$, $SD = 8.66$, $N = 120$). Overall, participants felt securely attached when involved on a romantic relationship, they show a moderate degree of need satisfaction, a high degree of self-esteem and life satisfaction, and low symptoms for depression.

Principal Axis Factor analyses were performed to assess the structure of the well-being scales. Thirty five items designed to measure well-being were factor analyzed with a direct Oblimin rotation procedure (Delta = 0). A scree plot determined 2 factors (total variance Explained = 37.12%). Factor one was labeled depression (Variance = 24.88%). Factor two was labeled happy life (12.24 %). Each factor loading had a value greater than .30. Factor 1 had 15 items and factor 2 had 16 items. Table 2 presents factor loadings. The correlation between the 2 factors was $r = -.26$ indicating that each factor assesses a different construct. The internal reliability for depression was .83 and for happy life was .77.

Zero order correlations were run between the two factors (depression and happy life), self-esteem, life satisfaction and depression. The depression factor was significantly negatively correlated with self-esteem, ($r = -.25$, $p <.01$) and life satisfaction ($r = -.27$, $p <.01$) but significantly positively correlated with depression, ($r = .61$, $p < .01$). Those correlations indicate that those who experience more
depression reported lower self-esteem and lower life satisfaction. The happy life factor was significantly positively correlated with self-esteem, \( r = .86, p < .01 \) and life satisfaction \( (r = .89, p < .01) \) but negatively correlated with depression \( (r = - .27, p < .01) \). Those correlations indicated that people who experienced a happy life are more likely to experience greater self-esteem and life satisfaction and less depression.

Zero order correlations were run between the independent and outcome variables. As expected, attachment-related anxiety was positively related with depression \( (r = .35, p = .001) \), as well as attachment-related avoidance \( (r = .23, p = .01) \). There was no correlation between attachment-related anxiety and need satisfaction \( (r = -.03, p = .74) \). There was a negative correlation between attachment-related avoidance and need satisfaction \( (r = -.22, p = .001) \) and a weak negative correlation between need satisfaction and depression \( (r = -.11, p = .21) \). Social connectedness was positively related to happy life \( (r = .51, p = .001) \) and autonomy \( (r = .43, p = .001) \). Autonomy was positively related to happy life \( (r = .49, p = .001) \). See table 3.

Regression Analyses

H1: It was hypothesized that secure attachment would predict well-being with need satisfaction as a mediator. The hypothesis was not supported. Dimensions of attachment-related anxiety and attachment related avoidance were used as continuous variables rather categorical. Distribution of scores in the attachment-
related anxiety and avoidance dimensions indicated that participants scored low in attachment-related anxiety and avoidance.

Attachment-related anxiety and avoidance were entered into the model as predictor variables and factor one, depression, was entered as the outcome variable. Factor two, labeled happy life in the factor analyses, was not analyzed with dimensions of attachment because this would require four regression analyses, which may increase type II error.

The mediation model tested followed Baron and Kenny’s (1986) causal steps. See figure 2. First, a regression determined that the relationship between attachment-related anxiety and depression was significant, \( b = 1.88, t = 4.09, p = .001 \). Second, the relationship between attachment-related anxiety and need satisfaction was not significant, \( b = -.181, t = -.332, p = .740 \). Third, need satisfaction did not correlate significantly with depression after controlling for attachment-related anxiety, \( b = -.094, t = -1.21, p = .228 \). Fourth, the most critical test, tested whether need satisfaction mediated the relationship between attachment-related anxiety and depression. When need satisfaction was controlled for, the correlation between attachment-related anxiety and depression still significant, \( b = 1.87, t = 4.06, p = .001 \). Finally, Sobel test revealed no significant partial mediation \( z = .317, p = .750 \). Those results indicate that need satisfaction is not a mediator between attachment-related anxiety and depression.

Next, attachment related avoidance was entered as the predictor variable in a second mediation model (see Figure 3). First, a regression analyses determined that
the relationship between attachment related avoidance and depression was not significant, \( b = 1.55, t = 2.54, p = .012 \). Second, the relationship between attachment related avoidance and need satisfaction was not significant, \( b = -.170, t = -2.50, p = .014 \). Third, need satisfaction did not correlate significantly with depression after controlling attachment related avoidance, \( b = -.06, t = -.730, p = .47 \). Fourth, need satisfaction did not mediate the relationship between attachment related avoidance and depression when controlling for need satisfaction, \( b = 1.45, t = 2.30, p = .02 \). Sobel test showed that there is no significant partial mediation between attachment related avoidance and attachment-related anxiety when controlling for need satisfaction \( z = .694, p = .490 \). These results suggested that need satisfaction is not a mediator between attachment related avoidance and depression.

**Secondary Analyses**

In addition to the proposed model, exploratory regression analyses tested two additional models. The first model tested whether self-esteem mediated the relationship between attachment-related anxiety and depression (see Figure 4). First, there was a significant relationship between attachment-related anxiety and depression; \( b = .243, t = 8.01, p = .001 \). Second, there was a significant relationship between attachment-related anxiety and self-esteem, \( b = -.118, t = -6.70, p = .001 \). Third, the relationship between self-esteem and depression controlling for attachment-related anxiety still significant \( b = -.617, t = -4.14, p = .001 \). Fourth, self-esteem mediated the relationship between attachment-related anxiety and
depression, \( b = .170, \ t = 5.10, \ p = .001 \)). Finally, Sobel test showed that there was a significant partial mediation \( z = 3.48, \ p = .001 \). These findings suggest that self-esteem helps to explain the process for which attachment related anxious people may feel depressed.

In the second model, autonomy was used as the mediator between social connectedness and happy life (see Figure 5). First, there was a significant correlation between social connectedness and happy life \( b = .30, \ t = 6.42, \ p = .001 \). Second, social connectedness significantly correlated with autonomy, \( b = .004, \ t = 5.20, \ p = .001 \). Third, autonomy significantly correlated with happy life when controlling for social connectedness, \( b = 24.15, \ t = 4.00, \ p = .001 \). Fourth, Sobel test indicated that there was a significant partial mediation \( z = 2.82, \ p = .001 \). Those findings suggest that autonomy partially mediates the relationship between social connectedness and happy life.

Discussion

It was hypothesized that need satisfaction would mediate the relationship between secure attachment and well-being. The hypothesis was not supported. Dimensions of attachment were used to test the relationship between attachment-related anxiety, attachment-related avoidance, need satisfaction, and well-being as indicated by measures of depression. On average, participants scored low in both the attachment-related anxiety and avoidance dimensions suggesting that respondents felt securely attached. These findings are in line with Attachment theory, which
states that low anxious/amvibalent individuals tend not to worry whether their partner is available, and responsive. Participants also scored low in attachment-related avoidance indicating that they feel more comfortable being intimate with others and feel more secure depending on others.

In addition, correlations among attachment-related anxiety, related avoidance, need satisfaction, and depression indicated that related anxiety and avoidance were positively related to depression but had no effect on need satisfaction. When testing whether need satisfaction mediated the relationship between secure attachment and well-being, as indicated by depression, the mediation model was not supported. One plausible explanation for lack of mediation is that the attachment measures assessed insecure attachment rather than secure attachment, as observed among the strong correlation between attachment-related anxiety and avoidance. Research using these dimensions to assess secure attachment categorize participants into either secure or insecure (Burnette et al., 2007) or used them along with a continuous scale including the four prototypes (Pielage, Luteijn, & Arrindell, 2005). Still others used them to investigate insecure attachment and its relation to negative constructs of well-being such as psychological distress (Declercq & Williemsen, 2006).

It is interesting to observe that the most reliable and valid measures used to assess attachment styles in romantic couples tend to be biased towards the negative aspect of attachment. Future research should focused on developing accurate and valid measures to assess secure attachment so we may need more accurately study
the benefits of positive, secure attachment rather than negative insecure attachment. In addition, future research on attachment theory should compare dating and married couples who are involved in a relationship for at least 6 months to assess length of relationship, attachment style and attachment behaviors on relationship satisfaction and well-being. It would be interesting to know whether married couples express similar or different attachment behaviors than dating couples and whether the expressed behaviors vary as a function of length of relationship such research will improve our understanding on attachment differences on romantic couples.

Another explanation for lack of mediation is that attachment dimensions were either not correlated or weakly correlated with need satisfaction (the mediator); in order to have mediation, there should be a significant relationship between attachment dimensions, need satisfaction, and depression. However, in the tested paths those conditions were not met. It is likely that there was a specification error. That is, the mediator may be a variable that does not belong in the model and there may be an omitted variable that belongs into the model, such as self-esteem. Future research using mediation variables should assess that the strength of the relationships between predictor and the mediator as well as relationship between the mediator and the outcome variable. Those relationships should be theoretically established and strong in order to function as potential mediators.

It is important to discuss the relationship between attachment dimensions and depression. There was a significant positive correlation between attachment-related anxiety and depression indicating that highly anxious people experience more
symptoms of depression. One reason for those findings is that anxious people feel dependent on others, so when their romantic relationship is threatened they overactivate their attachment system by showing behaviors as excessive jealousy; as a result of their insecure behaviors their romantic partner may end up rejecting them. Those behaviors can lead to the development of depression. Previous research reports that highly anxious individuals experienced more distress in close relationships (Fraley & Shaver, 1998). They tend to worry that their partner will not be available in time of need, and/or that they will lose their partner’s love. In addition, attachment research in married couples claimed that anxious wives reported more depressive symptoms and low marital adjustment (Scoot & Cordova, 2002).

Similar results were found for attachment related avoidance and depression. However, the strength of this relationship was smaller. An explanation for this finding is that avoidant individuals tend to be emotionally distant from romantic partners because they do not feel comfortable depending on others. It is possible that their emotional state is less affected than for anxious people; therefore they reported less symptoms for depression. According to attachment theory, avoidant individuals tend to avoid emotional closeness with romantic partners to protect themselves from being emotionally hurt. In addition, avoidant people are characterized by lack of trusting others so it possible that they do not reveal their true feelings when reporting information about their well-being.

In addition to the above correlations, exploratory regression analyses were conducted to explore other variables as possible mediators. Exploratory regression
analyses showed that self-esteem partially mediated the relationship between attachment-related anxiety and depression. There was a positive significant relationship between attachment-related anxiety and depression and a negative significant relationship between attachment-related anxiety and self-esteem, indicating that anxious people tend to report more depressive symptoms and lower self-esteem. Also, there was a negative significant relationship between self-esteem and depression. These results indicated that people who scored high on attachment-related anxiety tend to have lower self-esteem, which, in turn leads to depression. A possible explanation is that highly anxious people tend to have negative models of the self so they focus their mental resources on negative thinking that may lower their self worth and develop depressive symptoms. The above regression model is consistent with a mediation model which suggests that insecure adult attachment is associated with low self-esteem and higher symptoms of depression (Roberts, Gotlib & Kassel 1996). Another explanation is that the relationships among the predictor, mediator, and outcome variables were significant and the strength of those correlations were modest.

A second mediation model tested the relationship between social connectedness and happy life using autonomy as a mediator. Results revealed that autonomy partially explains the relationship between social connectedness and happy life. People who have a greater sense of social connectedness tend to experience greater autonomy, which in turn leads to a greater sense of happiness. One explanation for those results is that people who experience a greater sense of social
connectedness have a stronger sense of freedom about how to live their lives, especially approaching their activities as something they enjoy doing. This leads them to judge their life as happier. These results are in line with previous research indicating that autonomous people experience greater well-being (Kasser & Ryan, 1999; Reis, et al. 2000) and people who feel socially connected experience greater self-esteem (Lee, Drapper, & Lee, 2001).

It is important to address the limitations of this study. First, the use of self-report may bias the information provided because responses may not be candid. Self-report measures tap adults’ conscious beliefs of themselves in romantic relationships and participants may provide socially desirable responses rather than their true behavior. Second, this study is based on correlational data so the results do not establish causal relationships. It could be that those who experience a high degree of attachment-related anxiety are more likely to become depressed. Third, the findings cannot generalize to the general population because the sample was homogenous in terms of age, race, gender, and marital status. The present sample included college students who had been involved in a romantic relationship for at least three months so results do not generalize to students who have not being involved in a romantic relationship.

The present study has several strengths. First, the findings contribute to our knowledge on romantic attachment and well-being, confirming that people with different attachment styles experience romantic relationships differently. Second, this study assessed attachment styles in romantic relationships, which may help to
control for variances due to other attachment figures such as family and peers. Third, the measures used to assess attachment style in romantic relationships had good reliability and validity. It is important to use reliable and valid scales in research because those factors decrease error and increase the likelihood of finding significant results. The attachment-related anxiety and avoidance scales are derived from virtually all self-report adult romantic attachment measures and are more precise at capturing important individual differences in adult romantic attachment. Fourth, observations were collected independently rather than in groups, which helps decrease error. Fifth, exploratory analyses provided the base to conduct more research on those topics given their promising findings.

Implications for counselors

University students face many mental health challenges throughout their carriers. Depression and issues related to romantic relationship are major ones. Findings in this study suggest that low anxious and avoidant students may be willing to seek help when experiencing emotional problems. However, that may not be the case for highly anxious and highly avoidant students because they are more likely to suffer from depression due to their negative ways of adjusting to threaten situations. Attachment theory is a valuable tool to help students solve those mental issues. Research shows that secure attachment is beneficial to one’s psychological health while insecure attachment is more detrimental (Mikulincer & Shaver, 2005). School counselors should incorporate attachment theory to identify students’ degree or type of attachment and to develop interventions accordingly. For example, highly anxious
students may be more likely to develop depression because they exaggerate problems in close relationships. Counselors familiar with attachment theory would provide better service to those students because counselors would know how highly anxious students respond to stressful situations. In addition, Counselors will know that it could be more of a challenge to help avoidant individuals because they do not trust others, and this might prevent the student from revealing their true feelings to the counselor.

In conclusion, attachment dimensions showed that anxious and avoidant individuals in romantic relationships are more likely to fail to meet their needs for autonomy, competence, and relatedness; this in turn may lead them to experience greater symptoms of depression. Exploratory findings suggest self-esteem helps to explain the process through which highly anxious people experience greater symptoms of depression. A second exploratory finding suggested that people who have a greater sense of social connectedness experience more autonomy in their life; as a result, they feel happier.
References


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Table 1

Means, standard deviations, chronbach’s alpha, actual and possible scores.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Cronbach’s alpha</th>
<th>Possible scores</th>
<th>Actual scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>51.55</td>
<td>21.15</td>
<td>.93</td>
<td>18-126</td>
<td>18-97</td>
</tr>
<tr>
<td>Avoidance</td>
<td>45.72</td>
<td>16.58</td>
<td>.90</td>
<td>18-126</td>
<td>18-109</td>
</tr>
<tr>
<td>Need-Satisfaction</td>
<td>94.61</td>
<td>6.96</td>
<td>.85</td>
<td>21-147</td>
<td>73-119</td>
</tr>
<tr>
<td>Autonomy</td>
<td>37.60</td>
<td>5.50</td>
<td>.65</td>
<td>7-49</td>
<td>24-48</td>
</tr>
<tr>
<td>Competence</td>
<td>33.08</td>
<td>5.35</td>
<td>.70</td>
<td>6-42</td>
<td>18-42</td>
</tr>
<tr>
<td>Relatedness</td>
<td>47.33</td>
<td>6.25</td>
<td>.76</td>
<td>8-56</td>
<td>29-56</td>
</tr>
<tr>
<td>Social connectedness</td>
<td>97.03</td>
<td>13.85</td>
<td>.92</td>
<td>20-120</td>
<td>53-119</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>23.30</td>
<td>4.75</td>
<td>.86</td>
<td>0-30</td>
<td>11-30</td>
</tr>
<tr>
<td>Life-Satisfaction</td>
<td>26.38</td>
<td>6.10</td>
<td>.85</td>
<td>5-35</td>
<td>7-35</td>
</tr>
<tr>
<td>Ces-d</td>
<td>12.75</td>
<td>8.66</td>
<td>.87</td>
<td>0-60</td>
<td>0-41</td>
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<td>Scale and items</td>
<td>Rotated factor loadings</td>
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<td></td>
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<td></td>
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<td>-----------------------------------------------------</td>
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<tr>
<td></td>
<td>Factor 1</td>
<td>Factor 2</td>
<td></td>
<td></td>
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<tr>
<td><strong>Depression</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt sad</td>
<td>.907</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>I felt depressed</td>
<td>.862</td>
<td>.120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I could not shake the blues</td>
<td>.850</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt lonely</td>
<td>.780</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I had crying spells</td>
<td>.678</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I was bother by things usually not bother me</td>
<td>.632</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I did not felt like eating</td>
<td>.603</td>
<td>.125</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel my life had been a failure</td>
<td>.548</td>
<td>-.260</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I could not get going</td>
<td>.529</td>
<td>-.179</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I had trouble keeping my mind on a task</td>
<td>.486</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>I enjoyed life</td>
<td>-.460</td>
<td>.372</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt people dislike me</td>
<td>.383</td>
<td>-.211</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I talked less than usual</td>
<td>.377</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt fearful</td>
<td>.364</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My sleep was restless</td>
<td>.353</td>
<td>-.210</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Happy Life</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I’m satisfied with life</td>
<td></td>
<td>.771</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On the whole I’m satisfied with my life</td>
<td></td>
<td>.767</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My life is close to my ideal</td>
<td></td>
<td>.760</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I take a positive attitude toward myself</td>
<td></td>
<td>.696</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conditions of my life are excellent</td>
<td></td>
<td>.672</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I gotten important things in my life</td>
<td>-.103</td>
<td>.579</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If I could live my life over, I would change almost nothing</td>
<td>.560</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I feel I’m a person of worth in an equal plane as others</td>
<td>.558</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I’m inclined to feel that I am a failure</td>
<td>-.534</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I’m able to do things as well as most other people</td>
<td>.529</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel I was good as others</td>
<td>.528</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I felt hopeful about the future</td>
<td>.491</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I wish I could have more respect for myself</td>
<td>.479</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I certainly felt useless at times</td>
<td>-.455</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt I have good qualities</td>
<td>.381</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3

Zero order correlations between independent and dependent variables.

<table>
<thead>
<tr>
<th>Measures</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Anxiety</td>
<td></td>
<td>.48**</td>
<td>-.03</td>
<td>.48**</td>
<td>.47**</td>
<td>.31**</td>
<td>-.03</td>
<td>.40**</td>
<td>.35**</td>
</tr>
<tr>
<td>2. Avoidance</td>
<td></td>
<td></td>
<td>.22*</td>
<td>.25**</td>
<td>.40**</td>
<td>.33**</td>
<td>.30**</td>
<td>.34**</td>
<td>.23*</td>
</tr>
<tr>
<td>3. Need Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td>.20*</td>
<td>.58**</td>
<td>.54**</td>
<td>.43**</td>
<td>.49**</td>
<td>-.11</td>
</tr>
<tr>
<td>4. Autonomy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.51**</td>
<td>.48**</td>
<td>.58**</td>
<td>-.20*</td>
<td>.27**</td>
</tr>
<tr>
<td>5. Competence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.64**</td>
<td>.43**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Relatedness</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Social Connectedness</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>8. Happy life</td>
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<td></td>
<td></td>
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<tr>
<td>9. Depression</td>
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<td></td>
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</tbody>
</table>

* correlation is significant at the 0.05 level (2-tailed).
** correlation is significant at the 0.01 level (2-tailed).
Figure Caption

*Figure 1.* Regression Model using Need Satisfaction as Mediator between Secure Attachment and Well-Being.

*Figure 2.* Regression Model using Need Satisfaction as Mediator between Attachment-related Anxiety and Depression.

*Figure 3.* Regression Model using Need satisfaction as a mediator between Attachment-related Avoidance and Depression.

*Figure 4.* Regression Model using Self-esteem as Mediator between Attachment-related Avoidance and Depression.

*Figure 5.* Regression Model using Autonomy as Mediator between Social Connectedness and Happy-life.
Figure 1.

[Diagram showing the relationship between Need Satisfaction, Secure attachment, and Well-being]
Figure 2.

[Diagram showing the relationships between Need Satisfaction, Attachment-related Anxiety, and Depression with correlation coefficients: -0.03 from Need Satisfaction to Attachment-related Anxiety, -0.11 from Need Satisfaction to Depression, and 0.35 from Attachment-related Anxiety to Depression.]
Figure 3.

attachment-related avoidance → need satisfaction → depression

-0.23

need satisfaction → depression

-0.11

attachment-related avoidance → depression

0.23
Figure 4.

![Diagram showing relationships between Self-Esteem, Attachment-related Anxiety, and Depression with correlation coefficients -0.53, -0.55, and 0.60.]
Figure 5.

Attachment, Need Satisfaction and Well-being

Social Connectedness

Autonomy

.43

.50

Happy Life

.51
Appendices
Appendix A

College Students well-being survey

Section 1: Romantic Relationships. In this section, you will be asked general questions about how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Write the number in the space provided, using the following rating scale:

1  2  3  4  5  6  7
Disagree  neutral/Mixed  Agree
Strongly  Strongly

1. I prefer not to show a partner how I feel deep down.
2. I worry about being abandoned.
3. I am very comfortable being close to romantic partners.
4. I worry a lot about my relationships.
5. Just when my partner starts to get close to me I find myself pulling away.
6. I worry that romantic partners won't care about me as much as I care about them.
7. I get uncomfortable when a romantic partner wants to be very close.
8. I worry a fair amount about losing my partner.
9. I don't feel comfortable opening up to romantic partners.
10. I often wish that my partner's feelings for me were as strong as my feelings for him/her.
11. I want to get close to my partner, but I keep pulling back.
12. I often want to merge completely with romantic partners, and this sometimes scares them away.
13. I am nervous when partners get too close to me.
15. I feel comfortable sharing my private thoughts and feelings with my partner.
16. My desire to be very close sometimes scares people away.
17. I try to avoid getting too close to my partner.
18. I need a lot of reassurance that I am loved by my partner.
19. I find it relatively easy to get close to my partner.
20. Sometimes I feel that I force my partners to show more feeling, more commitment.
21. I find it difficult to allow myself to depend on romantic partners.
22. I do not often worry about being abandoned.
23. I prefer not to be too close to romantic partners.
24. If I can't get my partner to show interest in me, I get upset or angry.
25. I tell my partner just about everything.
26. I find that my partner(s) don't want to get as close as I would like.
27. I usually discuss my problems and concerns with my partner.
28. When I'm not involved in a relationship, I feel somewhat anxious and insecure.
29. I feel comfortable depending on romantic partners.
30. I get frustrated when my partner is not around as much as I would like.
31. I don't mind asking romantic partners for comfort, advice, or help.
32. I get frustrated if romantic partners are not available when I need them.
33. It helps to turn to my romantic partner in times of need.
34. When romantic partners disapprove of me, I feel really bad about myself.
35. I turn to my partner for many things, including comfort and reassurance.
36. I resent it when my partner spends time away from me.
Section 2: This section will ask you about your perceptions of free choice, competence and relatedness.

Please read each of the following items carefully, thinking about how it relates to your life, and then indicate how true it is for you. Use the following scale to respond:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all true</td>
<td>somewhat true</td>
<td>very true</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

____1. I feel like I am free to decide for myself how to live my life.

____2. I really like the people I interact with.

____3. Often, I do not feel very competent.

____4. I feel pressured in my life.

____5. People I know tell me I am good at what I do.

____6. I get along with people I come into contact with.

____7. I pretty much keep to myself and don't have a lot of social contacts.

____8. I generally feel free to express my ideas and opinions.

____9. I consider the people I regularly interact with to be my friends.

____10. I have been able to learn interesting new skills recently.

____11. In my daily life, I frequently have to do what I am told.

____12. People in my life care about me.

____13. Most days I feel a sense of accomplishment from what I do.

____14. People I interact with on a daily basis tend to take my feelings into consideration.

____15. In my life I do not get much of a chance to show how capable I am.
16. There are not many people that I am close to.

17. I feel like I can pretty much be myself in my daily situations.

18. The people I interact with regularly do not seem to like me much.

19. I often do not feel very capable.

20. There is not much opportunity for me to decide for myself how to do things in my daily life.

21. People are generally pretty friendly towards me.
**Section 3**

**Directions:** Following are a number of statements that reflect various ways in which we view ourselves. Rate the degree to which you agree or disagree with each statement using the following scale (1 = Strongly Disagree and 6 = Strongly Agree). There is no right or wrong answer.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Mildly Disagree</th>
<th>Mildly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. I feel comfortable in the presence of strangers
2. I am in tune with the world
3. Even among my friends, there is no sense of brother/sisterhood
4. I fit in well in new situations.
5. I feel close to people
6. I feel disconnected from the world around me
7. Even around people I know, I don't feel that I really belong
8. I see people as friendly and approachable
9. I feel like an outsider
10. I feel understood by the people I know
11. I feel distant from people
12. I am able to relate to my peers
13. I have little sense of togetherness with my peers
14. I find myself actively involved in people’s lives

15. I catch myself losing a sense of connectedness with society

16. I am able to connect with other people

17. I see myself as a loner

18. I don’t feel related to most people

19. My friends feel like family

20. I don’t feel I participate with anyone or any group
Section 4: This section will ask you to respond to feelings of self-worth, life satisfaction, and mood.

Instructions: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. If you strongly disagree, circle SD.

1. On the whole, I am satisfied with myself. SA A D SD
2. At times, I think I am no good at all. SA A D SD
3. I feel that I have a number of good qualities. SA A D SD
4. I am able to do things as well as most other people. SA A D SD
5. I feel that I do not have much to be proud of. SA A D SD
6. I certainly feel useless at times. SA A D SD
7. I feel that I’m a person of worth, at least on an equal plane with others. SA A D SD
8. I wish I could have more respect for myself SA A D SD
9. All in all, I am inclined to feel that I am a failure SA A D SD
10. I take a positive attitude toward myself SA A D SD
Directions: Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number in the line preceding that item. Please be open and honest in your responding.

1 = Strongly Disagree
2 = Disagree
3 = Slightly Disagree
4 = Neither Agree or Disagree
5 = Slightly Agree
6 = Agree
7 = Strongly Agree

1. In most ways my life is close to my ideal
2. The conditions of my life are excellent.
3. I am satisfied with life.
4. So far I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.
Directions: The 20 items below refer to how you have felt and behaved during the last week. Circle your response

1. I was bothered by things that don’t usually bother me.
   0. Rarely or none of the time (< 1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

2. I did not feel like eating; my appetite was poor.
   0. Rarely or none of the time (< 1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

3. I felt that I could not shake off the blues even with the help of my family or friends.
   0. Rarely or none of the time (< 1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

4. I felt that I was just as good as other people.
   0. Rarely or none of the time (< 1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

5. I had trouble keeping my mind on what I was doing.
   0. Rarely or none of the time (< 1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

6. I felt depressed
   0. Rarely or none of the time (< 1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

7. I felt everything I did was an effort
   0. Rarely or none of the time (< 1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

8. I felt hopeful about the future
   0. Rarely or none of the time (< 1 day)
   1. Some or a little of the time (1-2 days)
Attachment, Need Satisfaction and Well-being

2. Occasionally or a moderate amount of the time (3-4 days)
3. Most or all the time (5-7 days)

9. I thought my life had been a failure
   0. Rarely or none of the time (<1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

10. I felt fearful.
   0. Rarely or none of the time (<1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

11. My sleep was restless.
   0. Rarely or none of the time (<1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

12. I was happy.
   0. Rarely or none of the time (<1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

13. I talked less than usual.
   0. Rarely or none of the time (<1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

   0. Rarely or none of the time (<1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

15. People were unfriendly.
   0. Rarely or none of the time (<1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

16. I enjoyed life.
   0. Rarely or none of the time (<1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)
17. I had crying spells.
   0. Rarely or none of the time (< 1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

18. I felt sad.
   0. Rarely or none of the time (< 1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

19. I felt that people dislike me.
   0. Rarely or none of the time (< 1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)

20. I could not get going.
   0. Rarely or none of the time (< 1 day)
   1. Some or a little of the time (1-2 days)
   2. Occasionally or a moderate amount of the time (3-4 days)
   3. Most or all of the time (5-7 days)
Section 5: Demographics:

Id Number________________

1. How old are you?
   ___________years old

2. Gender
   ___Male    ___Female

3. Ethnicity
   ___White    ___Hispanic/Latino
   ___African American    ___Asian American
   ___Native American    ___Other (specify)__________

4. What is your marital status?
   ___Single    ___Divorced    ___Widow
   ___Married    ___Separated

5. Are you currently involved in a romantic relationship (e.g., dating, married)?
   ___Yes    ___No
   If yes, how long? ___________ Months_________ Years_______

6. In the past, have you been involved in a romantic relationship (e.g., dating, married)?
   ___Yes    ___No
   If yes, how long? ___________ Months_________ Years_______