CONCEPTUALIZING QUALITY OF COLLEGE LIFE

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The objectives of this study were to mathematically model the quality of college life (QCL) concept and to study the associations between attachment style, emotion regulation abilities, psychological needs fulfillment and QCL via structural equation modeling. Data was collected from 507 undergraduate students (men = 178, women = 329; age *M* = 21.78 years, *SD* = 4.37). This data was used to provide evidence for the validity of the College Adjustment Scales (CAS) as a measure of quality of college life. The CAS demonstrated good convergent validity with the World Health Organization Quality of Life measure (WHOQOL), Subjective Well-being and Psychological Well-being Scales. Results: Students who were insecurely attached were as likely to feel adequate in their academic and professional endeavors as securely attached students. However, insecurely attached students had lower QCL levels, lower fulfillment of psychological needs and more emotion regulation difficulties than securely attached students. The results also indicated that Anxious Attachment and Avoidant Attachment were positively and strongly associated. Nonetheless, Anxious Attachment and Avoidant Attachment affected QCL through different mechanism. Emotion regulation mediated the path between Anxious Attachment and QCL while the fulfillment of psychological needs mediated the path between Avoidant Attachment and QCL. The fulfillment of psychological needs also mediated the path between emotion regulation and QCL. The described pattern of results was found for three separate models representing 1) the student's attachment with their romantic partner, 2) best friend and 3) mother. Additionally, the study's findings suggest a change in primary attachment figure during the college years. Emotion regulation, the fulfillment of psychological needs and QCL were all affected more strongly by the student's attachment style with their romantic partner and best friend compared to their attachment style with their parents.

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CHAPTER 1

INTRODUCTION

1.1 Quality of Life

Quality of college life (QCL) can be conceptualized as a subdomain of a broader construct, quality of life (QOL). Thus, measures for both constructs likely share a significant relationship and conceptual overlap at the factor level. This makes QOL relevant to the study of QCL until proven otherwise; therefore, the concept of QOL is reviewed in this document before the concept of QCL is introduced.

QOL refers to a broad construct and research area (Katschnig, 2006). It includes concepts like “life satisfaction, functioning, morbidity, social relationships, work performance and [or] adverse effects of treatment” (Gladis et al., 1999, p. 321). There are many definitions of QOL (Erickson & Patrick, 1993, p. 22; Harper & Power, 1998, p. 551; Lawton, 1983, p. 1), and these definitions tend to be somewhat general and abstract which is likely related to the essential nature of the QOL concept. For instance, Katschnig’s (1997, p. 6) provided a definition that represents current knowledge on QOL; he indicated that QOL is "a loosely related body of work on psychological well-being, social and emotional functioning, health status, functional performance, life satisfaction, social support, and standard of living, whereby normative, objective, and subjective indicators of physical, social and emotional functioning are all used.” In spite of the existence of several definitions and measurement approaches, researchers agree about two fundamental features of the QOL concept**.** Those features are subjectivity and multidimensionality. Subjectivity seems to be an important QOL component because “people react differently to the same circumstances, and they evaluate conditions based on their unique expectations, values, and previous experiences” (Diener et al., 1999, p. 277). Furthermore, the

QOL construct “appears to exist in the subjective perception of the respondents, independent of their situation” (Power et al., 1999, p. 504) as supported by the relatively invariant factorial structure of the World Health Organization Quality of Life (WHOQOL, a QOL measure) across 15 diverse countries. In contrast, objective measures seem to be poor predictors of QOL (Haas, 1999). In addition, objective and subjective indicators of QOL are only slightly related. The second feature of QOL, multidimensionality, can be observed in most QOL definitions and measures (e.g. CASP-19, Hyde, 2003; Ryff’s Psychological Well-Being Scales, Ryff, 1995; WHOQOL; World Health Organization, 1998; Table 1.1).

Table 1.1

Multidimensional Measures of Quality of Life (Keyes et al., 2002; Ryff, 1995; World Health Organization, 1998)

Measures	Domains
WHOQOL	Physical
	Psychological
	Social functioning
	Living environment
Psychological Well-Being	Self-acceptance
	Positive relationships
	Autonomy
	Environmental mastery
	Purpose in life
	Personal growth
Subjective Well-Being	Life satisfaction
	Positive affect
	Negative affect

For example, the world health organization measures QOL by inquiring how people feel about their physical health, psychological health, social relationships, and the environment.

Research results with the WHOQOL also support that some second order factors of QOL have a greater effect on general QOL than others (Lee et al., 2005). For instance the Physical Health factor (.46) has the greatest impact on general (i.e., broad overall assessments of) QOL followed by the Psychological Health (.23), Social Relationships (.21), and the Environment factor (.13). Notably, the mentioned factors explained most of the variance of a general QOL item (Lee et al., 2005) suggesting that these dimensions accurately represent important domains that determine whether people perceive life as being good.

Well-being is a concept closely related to QOL and, perhaps, an integral component of QOL (Ring et al., 2007). In fact, much of our QOL knowledge comes from the well-being literature; thus, keeping in mind the domains that form the well-being concept helps clarify what some researchers are discussing when they write about a person's QOL. Well-being is usually conceptualized as two separate but related constructs: psychological well-being and subjective well-being (Comptom et al., 1996; Keyes et al., 2002; Ryan & Deci., 2001). Psychological well-being refers to self-realization and finding meaning in one's life. Thus, the concept of psychological well-being suggests that better QOL may be achieved through striving for self-realization and by living a meaningful life. More specifically, psychological well-being suggest that a person's QOL depends on their level of self-acceptance, purpose in life, personal growth, positive relationships with others, environmental mastery and autonomy. In contrast, subjective well-being focuses on pleasure, and happiness (Ryan & Deci, 2001, p. 151; Ryff et al., 2004). Thus, a subjective well-being conceptualization suggests that QOL can be increased by living a hedonic focused life, which could be quantified as having high levels of life satisfaction and positive affect, and low levels of negative affect (Keyes et al., 2002). Research supports that both concepts are needed to provide a complete picture of well-being; however, it is still unclear how

subjective well-being and psychological well-being influence each other over time (Keyes et al., 2002), or whether they evaluate a person's QOL from different time perspectives (e.g. short-term vs. long-term).

1.2 Quality of College Life

The literature reviewed up to this point was based on diverse samples and varied QOL perspectives. The review outlined current views of the QOL construct in general as well as its multidimensional and subjective nature and the relationship between QOL and well-being. The current section reviews another important and emerging area of QOL, quality of college life (QCL), which represents QOL research conducted with college students who tend to experience a unique set of life circumstances.

Quality of college life is an understudied sub-domain of QOL (Posadzki et al., 2009; Yu & Lee, 2008). Nonetheless, this line of research is important for those interested in designing interventions to improve the satisfaction of university students, which seems to be dropping at large research universities (Wilson, 1991). Moreover, studying QCL is important because college can be a challenging experience as evidenced by the lower QOL scores of undergraduate students compared to their working counterparts and by the relationship between QOL and perceived health (N = 947; r = .38 to .46; Vaez et al., 2004). A better understanding of QCL also has the potential to foster research-based interventions to decrease attrition and academic failure.

Some authors have studied QCL by using general QOL scales with college populations. Although this approach is viable, some researchers advocate for more specialized QCL measurement. In this regard, the QCL literature points to two different lines of research. One line of research focuses on cognitive and affective satisfaction with the college experience (Yu &

Lee, 2008) while the other views QCL in terms of individual and societal factors related to the college experience. Research focused on satisfaction with the college experience is most relevant to people interested in institutional research who are likely to conceptualize QCL as the students' satisfaction with the quality of the institution's academic level, student engagement, facilities and services (Sirgy, 2007). QCL as satisfaction with the college experience is briefly reviewed here; however, the present study is more concerned with QCL as a comprehensive construct of college well-being.

Two measures have been developed to study QCL in terms of satisfaction with the college experience. One 31-item measure of QCL was developed and validated with a sample of 526 college students. It looked at positive affect related to learning, frequency of negative affect, quality of interaction with other students, and quality of interaction with professors (Roberts & Clifton, 1992). A 70-item measure, Quality of College Life of Students (QCLS), was developed (N = 2,812; Sirgy et al., 2007; Table 1.2) and validated (N = 1,480; Sirgy et al., 2010) with a sample of undergraduate students attending 10 universities from diverse countries, and it focuses on students' satisfaction within four related areas (r's = .44 to.49) of the university life: academic, social, facilities and services, and overall QCL satisfaction.

Based on this survey, Sirgy et al., (2010) proposed and supported a model of institutional QCL in which satisfaction with the Facilities and Services domain directly affected Satisfaction with the Academic and Social domains; in turn, the Academic and Social domains directly affected overall Satisfaction with College Life. Notably, satisfaction with the academic domain had a small direct effect on Satisfaction with College Life compared to the other structural paths in the model. In addition to having good fit statistics, the mentioned model significantly predicted life satisfaction (.72), which is a robust indicator of QOL. The path from Satisfaction

with College Life to life satisfaction suggested that this QCL measure probably taps into overall QOL even though it ignores important areas of QCL related to psychological health (Benjamin, 1994; Disch et al., 1999).

Table 1.2

Quality of College Life Domains (Sirgy et al., 2007)

Domain	Sub-Domain
Academic	Faculty
	Teaching method
	Classroom environment
	Workload
	Academic reputation
	Academic diversity
Social	On-campus housing
	International programs and services
	Spiritual programs and services
	Clubs and social organization
	Athletics
	Recreational activities
Facilities and Services	Library services
	Transportation and parking services
	Healthcare
	Bookstore
	Telecommunications
	Recreational center
Overall QCL Satisfaction	

In contrast, researchers that view QCL as being affected by personal and societal factors tend to conceptualized QCL as a more general construct that goes beyond satisfaction with the college experience and is, therefore, more in line with the QOL literature reviewed in the previous section of this document. The following QCL definition is a good example of this line

of research: QCL is the "student[‘s] short-term perception and happiness with multiple life domains in light of salient psychological and contextual factors, and personality meaning structures" (Benjamin, 1994, p. 229). Significant work has been done to define QCL as a general indicator of college well-being; however, this line of research lags behind in terms of measurement since, to my knowledge, a measurement instrument that goes beyond satisfaction with the academic institution has not been developed. Nonetheless, several dimensions have been proposed to encompass the well-being of college students. For instance, Benjamin (1994) proposed nine inter-correlated QCL domains based on data collected from focus groups (Table 1.3).

Table 1.3

Domains and Sub-Domain of Quality of College Life (Benjamin, 1994)

Domain	Sub-Domain
Social	Parents/Family
	Friends
	Romantic partner
	Support/acceptance
	Demands/conflict
Finances	Employment options
	Awards/scholarships
Individual	Identity
	Motivation/aspiration
	Values
	Attitudes
	Self-esteem/confidence
	Stress/pressure
	Background/experience
	Vocational goals

(table continues)

Table 1.3 *(continued)*.

Domain	Sub-Domain
Living Arrangements	Advantages
	Disadvantages
	Structure
	Gender mix
	Maturation
	Location
	Group membership
Academic	Work load
	Faculty/TA
	Grades/evaluation
	Structure
	Program
	Level/year
	Facilities/equipment
	Affective response/time
	Skill/knowledge
	Time use/management
University Services	Access
	Utility
	Extracurricular
Gender	Safety/security
	Difference role models
	Role models
University Administration	Course
	Bureaucracy complexity
	Student organizations
	Scheduling
Other	Health situation
	Adjustment
	University entry/exit

And Disch et al. (1999) suggested several QCL domains, which were ranked ordered from most important to least important by 720 undergraduate students as follows: future career issues, physical health, academic issues, mental health issues, use of time, consumer/finance issues, social behavior, sexual behavior, living issues (safety, security), current employment issues, crime/violence issues, multicultural diversity, gender issues, alcohol use/abuse, drug use/abuse, and sexual orientation (Table 1.4).

Table 1.4

Quality of College Life Domains (Disch et al., 1997)

Domain	Sub-domain
Career and Employment Issues	Job/career after graduation
	Working while in school
Use of Time	Time management
	Study time
Physical and Mental Health Issues	Diet and exercise
	Self-esteem
Consumer and Finance Issues	Cost of education
	Cost of housing
Living Issues	Cost
	Conditions
	Safety/security
Social and Sexual Behavior	Safe sex/birth control/condoms
	AIDS/HIV
Crime and Violence Issues	Personal safety and security
	Sexual/violent assault and rape
Learning Styles	Improving grades/performance
	Study skills
Multicultural and Gender Issues	Communication
	Equality issues
Drug and Alcohol Consumption	Consequences of use/abuse
	Family/friend use/abuse

QCL was also hypothesized to be comprised of three different but interrelated levels: societal, institutional and within person. The societal level refers to areas outside of the students' school experience like income. Income is likely to affect QCL as it affects peoples' lives in general. For example, people with low-income tend to have shorter life spans, more instances of depression and schizophrenia as well as more family violence. People with low-incomes are also likely to marry younger and divorce more frequently, and they tend to be less likely to desire higher education. When admitted to a higher education program, low-income students tend to perform less well on the academic and social arenas compared to affluent students. Institutional factors are also likely to play a major role on the students' QCL given that institutions (through policies as well as people) attempt to change students' values, attitudes, knowledge, and thought processes. Some institutional variables that are likely to have an effect on QCL are GPA, attrition rates, assimilation into the social and academic aspects of the university/college life, as well as perceptions of institutional unfairness. At the student level are different measures of well-being that inquire about the person's private experiences and their relationships with others (Benjamin, 1994).

Currently, most research on QCL comes from studies measuring well-being or QOL in undergraduate students. One clear finding from this line of research is that Subjective Well-being and Psychological Well-being are two different but overlapping concepts. In other words, autonomous people who have high mastery of their environment and strive for self-realization (to name just a few aspects of psychological well-being) tend to have high levels of satisfaction with life; however, measuring someone's level of life satisfaction may relate little information about that person's level of autonomy, environmental mastery and self-realization (and vice versa). It is likely that both well-being concepts complement each other, and that both subjective

and psychological well-being need to be measured to obtain a complete picture of well-being (Compton et al., 1996; Keyes et al., 2002; Ring et al., 2007). Measuring both types of well-being might also suggest areas of improvement likely to lead to a more positive perception of QOL.

The results of previous research also support that the QOL of college students is affected by diverse life domains (Benjamin, 1994); for instance, student's personality characteristics seem to affect ratings of subjective well-being. Students scoring high on sociability tend to report high levels of positive affect and life satisfaction while students scoring high on impulsivity tend to report high levels of negative affect (Emmons & Diener, 1986). In addition, mood and daily life events also predict life satisfaction (Pilcher, 1998). Other aspects that increase life satisfaction in this population are having high self-esteem, high romantic relationship satisfaction, and having good living conditions (N = 240; Chow, 2005). Students (and people in general) also tend to report higher levels of well-being when they focus on intrinsic values such as "self-acceptance, affiliation, [and] community feeling" compared to extrinsic values such as "financial success, appearance, [and] social recognition" (Schmuck et al., 2000, p. 225). Nonetheless, financial resources are important to all college students (M_{age} = 20.6, SD = 4.29) with students reporting higher SES also reporting higher grade point averages compared to students reporting lower SES (Chow, 2005). On the other hand, financial problems that increase the difficulty of accomplishing personal goals or the level of challenge of personal projects seems to affect the life satisfaction of older students (M = 28.38) but not the life satisfaction of younger students (M = 20.34) who are likely to receive more financial support from their parents (Makinen & Pychyl, 2001).

The literature reviewed up to this point highlights that Well-being, QOL, and QCL are related and complex psychological concepts as they represent the inter-relations of complex

multilevel, multidimensional**,** and overlapping constructs. Moreover, these domains are affected by intrapersonal, interpersonal and environmental factors. Several mechanisms hypothesized to affect QCL are reviewed in the remaining of the Introduction. Those mechanisms are attachment style, emotion regulation, and the fulfillment of three basic needs (autonomy, competence, and relatedness) as specified by self-determination theory (Ryan & Deci, 2001).

1.3 Quality of College Life and Attachment Style

1.3.1 Attachment Theory

Attachment styles are viewed by a number of researchers as the basis for personality development (Bowlby, 1969; Bretherton, 1985). They can be understood as internal working models of relationships as they are internalized representations of the world, other people, the self and interpersonal relationships. Internal working models are hypothesized to affect feelings, attention, memory, and cognition. They are also hypothesized to guide behaviors, determine perception of experiences and future behavior (Main & Kaplan, 1985).

Three attachment styles were identified during the initial attachment studies with children: secure, insecure and ambivalent. Children classified as securely attached sought comfort, proximity and contact with their attachment figure when the attachment figure returned after a brief separation as specified by the Ainsworth Strange Situation. After a period of contact with the attachment figure, securely attached infants returned to exploring their environment. In contrast, insecure-avoidant children expressed less distress than children with other attachment styles during separation, and they actively avoided and ignored the attachment figure when reunited. Insecure-ambivalent children received the attachment figure with anger, and resistance.

They seemed to be unable to let the attachment figure comfort them (Ainsworth, 1979; Bartholomew, 1990; Main & Kaplan, 1985).

Later on, Main et al. (1985) as reviewed by Hwang et al. (2009), described four relatively stable attachment styles: secure, anxious-preoccupied, dismissive-avoidant and fearful-avoidant. Adults with avoidant attachment styles were classified into two different attachment styles, fearful and dismissive, to differentiate between people who are aware of their desire to be in contact with others and those who are not. The description of the securely attached person, child or adult, is congruent with the previously provided definition. Main et al. described anxious-preoccupied people as those who have a tendency to feel anxious when separated from the attachment figure, feel anxious about exploring the environment and tend to be overly dependent. In contrast, people with dismissive-avoidant personality styles are likely to feel threaten by interpersonal closeness and attempt to live their lives without it. Finally, people with fearful-avoidant attachment styles expect interpersonal rejection; consequently, they stop trying to achieve meaningful relationships (Bartholomew et al., 1991; Hwang et al., 2009). The mentioned attachment styles have also been conceptualized as being formed by different combinations of positive and negative internal working models of the self and others, which was supported by the results of a study with a small sample of undergraduate students ($N = 70$; Bartholomew & Horowitz, 1991). This view of attachment suggest that securely attached people have positive models of the self an others; people with an anxious-preoccupied attachment style have negative models of self and positive models of others; people with an avoidant-fearful attachment style have negative models of themselves and others; and people with an avoidant-dismissive attachment style have positive views of themselves and negative views of others (Bartholomew, 1990). Based on the reviewed attachment style literature, it is reasonable to

propose that the described attachment styles are important in determining people's level of QCL. For instance, they describe people's capacity to relate to themselves and others (Bartholomew, 1990) and provide the basis to give meaning to past, present and future experiences. Moreover, as is described in the next few paragraphs, attachment styles are related to students' characteristics related to (and likely to determine) QCL.

Research results based on undergraduate student samples suggest that people who are securely attached are likely to have better relationships with themselves and others. Specifically, attachment security is positively correlated with levels of intimacy in relationships, warmth, self-confidence, self-esteem, balance of control in friendships and level of involvement, sociability**,** engaging in fulfilling adult relationships, and lack of serious interpersonal difficulties (Bartholomew, 1990; Bartholomew & Horowitz, 1991). Therefore, it is likely that securely attached individuals have an easier assimilation process to the college environment, and that they receive more social support than insecurely attached individuals. These characteristics in conjunction with higher levels of self-esteem suggest that securely attached individuals probably have better QCL levels compared to insecurely attached students.

In contrast, anxious-preoccupied students tend to seek social interactions and be overly expressive and dominant. They also show higher levels of personal insecurity, have difficulty forming close relationships and relying on others. They report feeling more distressed than securely attached and dismissing-avoidant students. An anxious-preoccupied attachment style is also positively related to self-blame, interpersonal dependence, high need of approval, emotional expressiveness, level of romantic involvement, level of disclosure, tendency to rely on others, care giving, and crying frequently. Women are clasiffied as anxious-preocupied more often than

men (Bartholomew, 1990; Bartholomew & Horowitz, 1991). The described characterizes are likely to decrease the students' perception of their QCL level.

Dismissive-avoidant and fearful-avoidant people tend to view interpersonal relationships as sources of conflict and negative affect, which makes it easier for them to decide to avoid people altogether (Bartholomew, 1990; Bartholomew & Horowitz, 1991). Students with a dismissive-avoidant attachment style deemphasize their interpersonal needs in order to maintain a good self-image. Moreover, their feelings and thoughts about self-sufficiency seem to create a false sense of emotional stability. Thus, it is not surprising that they report the same level of distress as securely attached students while, at the same time, report feeling lonely and lacking familial support. In addition, peers view dismissive-avoidant students as hostile and anxious, behaviors probably based on frustrated attachment needs. Dismissing-avoidant undergraduate students tend to be self-confident, exert high levels of control in relationships, and have low levels of emotional expression, warmth, care giving, self-disclosure, romantic involvement, and reliance on others (Bartholomew, 1990; Bartholomew & Horowitz, 1991). This group of students would likely report high levels of QCL as a result of denial.

In general, Bartholomew & Horowitz (1991) noted that even though people were divided into attachment style categories based on their predominant presentation, most people seemed to have characteristics from all attachment styles. Nonetheless, similar conclusions were reached when the data was analyzed with attachment styles as continues variables compared with attachment styles as categorical variables (Bartholomew & Horowitz, 1991).

1.3.2 Undergraduate Students' Attachment Style and Quality of College Life

Research specifically focused on the relationship between attachment and QOL is scarce;

however, being securely attached is an important resilience factor across a person's life span. Securely attached people display less emotional distress, negative affect, and physical symptoms as well as more positive relationships, stability, trust, commitment, satisfaction, independence and more willingness to seek support (i.e., better overall QOL; La Guardia et al., 2000). Besides, attachment styles are significantly related to the social (e.g. self-esteem and social support) and physical (e.g., fatigue, somatic symptoms) domains of QOL (Hwang et al., 2009). The relationship between attachment and the social domains of QOL is not surprising given the reviewed literature on the connection between attachment relationships and internal working models of self and others. Similarly, identification of a relationship between attachment and the physical domains of QOL is suggested by the literature on the negative physiological effects of attachment trauma in the brain and the nervous system (Allen, 2001).

Additional studies supporting the link between attachment and QCL are reviewed on the remaining of this section. For instance, a positive relationship between life satisfaction and attachment to parents and friends was found on a sample of 587 middle school students. Findings from this study suggested that parental attachment and life satisfaction (r = .53) are more strongly associated than peer attachment and life satisfaction (r = .34). Students were also more likely to have a stronger attachment bond with their mothers than with their fathers. The only gender difference was that girls (M = 4.04, SD = .70) reported higher levels of attachment to peers compared to boys (M = 3.62, SD = .66; Ma & Huebner, 2008).

The effect of attachment on people's well-being does not seem to stop after childhood. In fact, it has been proposed that attachment styles are likely to be stable throughout the college years (Kenny, 1990). However, the stability of attachment styles was questioned by a recent study by Hiester and colleagues (2009). They recruited 271 university freshman students and

found that scores on a parental attachment measure increased for women entering college while it decreased for men who started college while living at home. The results indicated that women who scored high on attachment security reported better college adjustment at Time 1 (2 weeks) compared to women with low scores on attachment security. For men, the results suggested that securely attached students were less likely to experience psychological distress; and they were more likely to have an easier time adapting to college both at Time 1 and at Time 2 (10 weeks). For both men and women, attachment scores predicted 28% of the variance of a self-competence measure, and 31-32% of the variance of a measure reflecting psychological distress. In addition, attachment scores predicted 30% of a college adjustment measure for women and 16% for men. For women, decreased communication and increased alienation predicted psychological distress while trust negatively predicted psychological distress for men. Furthermore, those students who experienced a significant decrease in attachment security from Time 1 to Time 2 also experienced lower perceived self-worth, lower academic competence, and higher levels of distress compared to students who did not experience a change and those who experienced an increase in attachment security (Hiester et al., 2009). In sum, these results highlight that in addition to affecting psychological distress, perceived self-competence and self-worth, attachment security is intrinsically related to the students' ability to adapt to the university environment.

A longitudinal study supported that securely attached 12-month-olds were viewed by their teachers as more socially desirable during early elementary school. They also had more secure relationships with friends at age 16. In addition, securely attached individuals and their romantic partners reported that securely attached individual had more positive daily emotional experiences with their romantic partner during their early 20s, less negative affect during conflict

resolution, and were more collaborative with partners when working on a task than less securely attached individuals (Simpson et al., 2007). This study supports that early attachment has an impact in early adulthood relationships. These later relationships are likely to be relevant to the students' level of quality of college life.

Other studies also support the presence of a significant relationship between attachment security and college adjustment. Mattanah et al. (2004)**,** in a structural equation modeling study based on a sample of 404 undergraduate students, found equal support for two models explaining the relationship between attachment security, separation/individuation, college adjustment, social adjustment and personal-emotional adjustment. One of the supported models proposed that a person's level of separation-individuation partially mediated the predictive paths from parental attachment to college adjustment, social adjustment and personal-emotional adjustment. The latter model differed from the former model in that separation-individuation fully mediated these relationships. Furthermore, the same models applied to men and women suggesting that men and women tend to experience equal levels of independence and attachment needs/preferences. At the same time, other researchers (Parade et al., 2010; $N = 385$) have found that men who over emphasize independence and women who over emphasize attachment tend to have lower college adjustment scores compared to students with an average emphasis on both traits. In addition, college students who are securely attached to their parents are likely to make friends easier and to be more satisfied with their friendships than those students who are not securely attached to their parents. These two studies suggested that college students who are securely attached and who experience a balance between separation and individuation tend to be more adept at adjusting to college, meeting people, and joining groups. They also have less psychological distress and somatic symptoms than students who are not securely attached and those students

who experience difficulties with separation and individuation. A study with a college student (*N* = 225) population also suggests that students with high levels of psychological well-being tend to have secure attachment styles while students with low levels of psychological well-being tend to have insecure attachment styles (Haggerty et al., 2010).

More insight into attachment and QCL was provided by La Guardia and her colleagues (2000). They found the level of security across relationships for undergraduate students (*N* = 448) was significantly, positively, and moderately related to well-being. Their results also suggested that men reported greater well-being and a more positive view of themselves, their roommate, and romantic partners compared to women. On the contrary, women reported greater attachment security with their best friends, and they were more willing to rely on others (best friend, romantic partner, father) compared to men. Interestingly, college students reported greater attachment security with their best friends, followed by lower levels of reported security to their mothers, romantic partners and fathers. This last finding highlights the importance of friendships during college as well as a change in attachment patterns from childhood to young adulthood. Moreover, the level of relationship satisfaction and attachment security within each type of relationship was associated with how the quality of the relationship positively affected well-being through the fulfillment of autonomy, competence, and relatedness (La Guardia et al., 2000).

Another study with a small sample of undergraduate students (*N* = 192) indicated that the relationship between attachment insecurity and well-being varied depending on the type of attachment insecurity present: Anxious or avoidant. For example, self-compassion mitigated the effect of attachment anxiety on subjective well-being while emotional empathy to others mitigated the effect of attachment avoidance on well-being. These results were confirmed with a

smaller sample of community adults (Wei et al., 2011). These results suggest that important psychological processes (e.g., compassion, empathy) are involved in the association between attachment and well-being. They also highlight the presence of different relationships patterns between attachment avoidance and well-being compared to attachment anxiety and well-being. Several studies with minority students also provide support for additional psychological processes involved in the association between attachment and well-being. These studies suggest that parental and peer attachment predict self-esteem and psychological distress while self-worth mediates the relationship between attachment and psychological distress (Garriott, 2010), and a sense of coherence mediates the effect of insecure peer and parental attachment on depression as well as the effect of college challenges (academic, social, financial, & general) on depression (Ying, 2007).

The reviewed studies showed a moderate relationship between secure attachment, satisfying relationships and well-being in general. These studies also suggested that compassion, empathy, self-worth and coherence mediated the relationship between attachment insecurity and well-being. In addition, the student's level of separation and individuation mediated the relationship of parental attachment with college adjustment. The section titled QCL and Attachment Style also pointed to a change in main attachment relationships, and it highlighted the importance of the students' attachment style during the college years. It emphasized the advantages securely attached students had over insecurely-attached students in terms of psychological health and healthy relationships with others, which are indicators of good QCL.

Exploring the effect of attachment style on the quality of life of undergraduate students is important because attachment styles affect people's perceptions of themselves, others and the world, which in turn affect their behavior (Powers, 2005). However, little is known about the

effect that attachment style has on college students since most attachment research has been conducted with infants and young children (McLeod, 2008). Moreover, much can be gained by exploring the mechanisms through which attachment style affects quality of college life. This knowledge would be particularly useful to college counseling centers. For instance, researchers can aid providers in such centers by identifying psychological processes involved in both attachment style and college specific quality of life as areas that need to be explored in the context of conflict resolution. In fact, understanding how attachment style relates to the students' QCL it likely to be important since attachment style and the therapeutic alliance have been shown to have similar effects on therapy outcomes (even though they are only slightly related to each other). Moreover, attachment style can be modified with psychological treatment (Levy et al., 2011).

1.4 Emotion Regulation

> Emotion regulation consists of the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals… emotion regulation does not refer to a unitary phenomenon but is rather a broad conceptual rubric encompassing a range of loosely related process [such as]… physiological arousal, neurological activation, cognitive appraisal, attention processes and response tendencies… while the discrete emotion may 'play the tune' of a person's emotional response, these emotion regulation processes significantly influence its quality, intensity, timing, and dynamic features and thus significantly color emotion experience. (Thompson, 1994, p. 25, 27, 30)

Earlier emotion regulation research emphasized the negative consequences of failing to regulate emotions. However, emerging research emphasizes the advantages of utilizing adequate emotion regulation skills (Thompson, 1994). Emotion regulation is a term used to describe people's ability to choose how and when to experience and express emotions, it can function inside and outside of awareness, and it may antecede or precede an event. People can prepare for

emotional events (e.g. job interview) by changing their interpretation of the event beforehand or by choosing which situations to be a part of. After someone decides to engage in a situation, they can decide to change it (i.e. changing conversational topics), focus on certain aspects of the situation and/or attach selected meaning to the event (e.g. it is only one test). Once emotions are triggered, people can choose how to react or not react. All strategies to regulate emotion are not equally effective. For instance, changing the appraisal of the situation is likely to change the entire chain of emotional reactions in such a way that a successful reappraisal decreases the experiential, physiological and behavioral responses to an event. A regulation strategy like suppression decreases the behavioral expression of the emotion, decreases the experience of positive affect but not of negative affect, and it increases physiological arousal. In addition, people who have a tendency to suppress report the same levels of negative emotions and lower levels of positive emotion than people who do not usually engage in suppression. In contrast, people who manage their emotion through reappraisal tend to experience more positive affect compared to people who do not engage in reappraisal to change their emotional experiences. Moreover, using suppression to manage emotions decreases well-being while using reappraisal increases it (Gross, 2002)

Support for the effect of emotion regulation on well-being was provided in a literature review by Tugade and Fredrickson (2007). They proposed that regulating and, maintaining positive emotions, looking for positive outcomes within bad experiences and attaching meaning to daily life events increases resilience and well-being. Furthermore, being able to regulate emotions is central to having good relationships with others. For example, research findings suggest that people who tend to suppress their emotions are less liked in social situations, and

they tend to have less social support than those who do not have a tendency to suppress emotions (Gross, 2002; Lopez et al., 2005).

Attachment is also essential in the development of coping resources, as previously discussed, and emotion management skills (Thompson, 1994). Undergraduate students from cohesive and high functioning families tend to have better coping resources and feel more adequate at regulating emotions than students from less well-functioning families. Students who expect to manage their negative emotions successfully tend to have more positive emotions and less negative emotions after experiencing conflict with their parents (McCarthy et al., 2004). Additional findings from McCarthy et al. highlighted that securely attached undergraduate students also had lower levels of stress related symptoms than less securely attached students. However, the relationship between attachment and stress symptoms was mediated by the students' ability to prevent and cope with unwanted situations as well as by their beliefs in their ability to regulate negative emotion. Overall, the findings reported by McCarthy et al. indicate that securely attached students are more adept at preventing stressful situations, which in turn predicts an increased belief in their ability to manage negative emotions and less stress related symptoms. Taken together, the reviewed research suggests that emotion regulation is an important psychological process when examining the broad construct of QCL, and may be fundamentally linked to attachment (McCarthy et al., 2006).

1.5 Quality of College Life and the Basic Psychological Needs of Autonomy, Competence and Relatedness

Self-determination theory (SDT) proposes that a person's level of well-being depends on their ability to fulfill their needs for autonomy, competence, and relatedness (Ryan & Deci, 2001). Autonomy refers to people's need to "experience choice in the initiation, maintenance,

and regulation of human behaviors". Competence refers to people's need to see themselves as individuals who effectively interact with their environment, and relatedness implies people's need to have positive and significant relationships (Guay et al., 2003, p. 165). Not surprisingly, the literature suggests that these basic needs are positively related to attachment, QOL (Milyavskaya & Koestner, 2011; Patrick et al., 2007) and to some QCL domains (Guay et al., 2003).

The studies reviewed in this section provide support for autonomy, competence and relatedness as potential predictors of QCL. However, only one study directly assed the effect of these needs on a college specific issue by looking at career indecision on a sample of 834 undergraduate students. This study found that students with supportive parents and peers, instead of controlling parents and peers, had higher levels of autonomy and competence and were less likely to experience career indecision (Guay et al., 2003). Other studies study small sample of undergraduate students (N = 67) also found that students who met their needs for autonomy (r = .34), competence (r = .58) and relatedness (r = .39) experience better overall well-being (Reis et al., 2000), and that the fulfillment of autonomy, competence and relatedness needs is significantly associated with well-being. More specifically, people with higher levels of needs fulfillment tended to have greater levels of self-esteem, positive affect, vitality, relationship satisfaction and relationship commitment (r = .42 to .72) as well as more understanding responses to conflict (r = .32). On the other hand, they experienced lower levels of negative affect, less relationship conflict and a lower likelihood of reporting an avoidant or anxious attachment style (r = -.43 to -.61). This study also revealed that people's level of competence had the greatest impact on individual well-being compared to autonomy and relatedness levels (Patrick et al., 2007). A follow up study suggested that as a person's level of needs fulfillment

increases so does their relationship satisfaction and commitment (Patrick et al., 2007). In addition, an attachment related study with a sample of undergraduate students (N = 448) suggested that people with greater fulfillment of their basic needs are more likely to be classified as being securely attached as well as having a positive view of themselves and others. Relatedness was the variable most strongly associated with attachment style followed by autonomy and competence respectively. Moreover, people's level of well-being was associated with both attachment security and needs satisfaction (La Guardia et al., 2000). Taken together the results support that well-being, attachment security and possibly QCL share a significant relationship with autonomy, competence and relatedness.

1.6 Research Gap

Researchers have identified several well-being and quality of life models that represent how people judge the general quality of their lives (Keyes et al., 2002; Ryff, 1995; The WHOQOL Group, 1998) as well as internal working models of how individuals perceive themselves, others, and the general effects of these internal working models on people's relationships with themselves, and others (Bartholomew, 1990; Bartholomew & Horowitz, 1991; Bowlby, 1969). They have also identified the basic role of attachment style on emotion regulation (McCarthy et al., 2004, 2006), and three basic psychological needs that are key to people's well-being (Ryan & Deci, 2001). In addition, existing theory and research findings suggest how all these mechanisms/processes are likely to affect each other. For instance, psychological theory suggests that people's attachment style is formed based on early childhood experiences with a caregiver (Bowlby, 1969), and that attachment style is key to the development of emotion regulation skills (Thompson, 1994). People are also likely to use their emotion

regulation skills to fulfill their basic psychological needs (Cassidy, 1994; Thompson, 1994). In addition, emotion regulation skills (Tugade & Fredickson, 2007) and attachment style (Wei et al., 2011) affect well-being directly. Finally, the fulfillment of needs is likely to significantly predict well-being.

The next step in the research process is to test a model that can mathematically represent and thus integrate all these psychological domains (attachment, emotion regulation, QOL/QCL, and fulfillment of needs). This model can be used to comprehensively examine how all these psychological domains are empirically related, and perhaps to relate these domains to a large college student sample. However, this comprehensive model cannot be examined until a mathematical model of quality of college life is tested first and foremost. This is a necessary step because undergraduate college students experience unique circumstances compared to same age young adults (Vaez et al., 20004). Moreover, an accurate understanding of the psychological life of college students in terms of their QCL can be central to providing effective academic and psychological services to this population (Levy et al., 2011).

CHAPTER 2

METHOD

2.1 Participants

Five hundred ninety three students enrolled in the study, 507 started taking the survey and 503 participants completed the study by answering all the questions. On average students finished the questionnaire, 356 items, in 55 minutes (*SD* = 95). The mode was 38 minutes. These times reflect the amount of time students were in the survey's website and not necessarily the amount of time they spent taking the survey.

The sample was formed by 178 men (35.11%) and 329 women. The students' mean age was 21.78 years (*SD* = 4.37). Twelve of the participants were not born in the U.S. Most of the participants reported being single (*n* = 441, 86.98%). A few reported living with a romantic partner (*n* = 30, 5.92%), being married (*n* = 30, 5.33%), divorced or separated (*n* = 9, 1.77%). Also, 76 (14.99%) of the participants were African-American, 22 (4.34%) American-Indian or Alaska Native, 45 (8.88%) Asian, 264 (52.07%) European-American, 99 (19.53%) Hispanic and 1 was (.2%) Pacific Islander. Students were taking an average of 13.80 (*SD* = 2.75) credit hours at the university and working an average of 10.38 hours (*SD* = 13.14). Most of the participants (462, 91.12%) reported having siblings. In addition, 138 (27.22%) identified themselves as freshman, 107 (21.1%) sophomores, 142 (28.01%) juniors, and 120 (23.67%) seniors. The sample also had students from several colleges: 49 (9.70%) students were part of the College of Public Affairs and Community Service, 314 (62.17%) from the College of Arts and Sciences, 14 (2.77%) from the College of Business, 57 (11.28%) from the College of Education, 12 (2.37%) from the College of Engineering, 14 (2.77%) from the College of Music, 8 (1.38%) from the College of Visual Arts and Design, 7 (1.38%) from the School of Journalism, 25 (4.95%) were

undecided, and 5 (.99%) did not report a valid major. Moreover, 217 of the participants reported psychology as their major. That is 42.97% of the total sample or 69.10% of the students from the College of Arts and Sciences reported psychology as their major.

This was a convenient and self-selected sample. However, the sample did not differ in age (difference = -.72 years) from the university's population. It also approximated the university's multi-ethnic distribution while over-representing African-American (difference = 2.28%), American-Indian (difference = 2.96%), Hispanic (difference = 4.07%) and Asian students (difference = 2.08). The sample also accurately represented sophomore students, students form the College of Education and the College of Public Affairs and Community Service. Nonetheless, this sample differed on several aspects from the general population of undergraduate students at the large public university where the data was collected. It overrepresented women (difference = 12.59%), freshman (difference = 9.22%), juniors (difference = 3.01%), and students in the arts and sciences (difference = 31.74%), particularly psychology students (difference = 38.69%). It underrepresented seniors (difference = -10.33%), students from the College of Business (difference = -.11.49%), College of Engineering (difference = -1.98%), College of Music (difference = -1.78%), College of Visual Arts and Design (difference = -4.82%) and the School of Journalism (difference = -1.39%; Clark, Barton & Fuentes). The sample did not represent students from the College of Information and the College of Merchandising, Hospitality and Tourism. Moreover, students not interested in gaining extra-credit and those least engaged with their education are likely to be underrepresented. The difference in participation between more engaged and less engaged students might have been mitigated by a policy held by some psychology courses requiring students to attain extra-credit points to obtain a passing grade.

2.2 Measures

2.2.1 Poor Quality of College Life: College Adjustment Scales

QCL was measured with the College Adjustment Scales (CAS**;** Anton & Read, 1991). This measure has 108 questions, 9 scales, 12 items per scale, and it is rated on a 4-point Likert-type scale. The CAS was developed to identify those issues that most often hinder college adjustment. The identified issues were anxiety level, likelihood of depression, suicidal ideation, substance abuse (drugs or alcohol), problems with self-esteem, interpersonal problems, family related problems, problems with academic performance, and career planning issues. Items were developed to tap into the behavioral expressions of each identified area. The initial items were given to 224 students. Internal consistency reliability was calculated after deleting problematic items (item-total correlation = .80 to .92). Afterwards, the CAS was normed on 1,446 college students from different geographical locations within the U.S. Five studies with small sample sizes suggest that the CAS differentiates between clinical and non-clinical populations of students. This measure also has convergent and divergent validity in relation to the State and Trait Anxiety Inventory, Beck Depression Inventory, Beck Hopelessness Inventory, the NEO Personality inventory (Anton & Read, 1991), and the College Maladjustment Scale of the Minnesota Multiphasic Personality Inventory-2 (MMPI-2). However, only Depression and Self-Esteem scales significantly predicted college maladjustment scores when the CAS' scales were entered in a stepwise multiple regression ($R^2 = .81$, $p < .01$; Campbell et al., 2006).

Possible limitations of the CAS are the strong inter-correlations between the scales (Anton & Read, 1991). Nonetheless, strong correlations between the scales might represent the real nature of the measured constructs. For example, it is not surprising that there is a correlation of .77 between scales measuring depression and anxiety. Researchers have also suggested that

the CAS's inter-item correlations for the scales were probably inflated by social desirability and by the small sample size used to calculate these statistics within the development sample (N = 224; Pinkney, 1992). Factor analysis of the CAS indicated that one factor accounted for most of the measure's variance (Eigenvalue F1 = 5.13, Eigen value for all other factors = <. 85), which was viewed by the authors as a possible limitation (Campbell et al., 2000). However, this may be a strength when observed from a different viewpoint. That is, the proposed factorial solution could be accounted by the scales' loadings on a higher-order multidimensional construct (e.g., QCL).

Table 2.1

Quality of College Life and the College Adjustment Scales

College Adjustment Scales	Benjamin, 1994	Disch et al., 1997	WHOQOL	Well-Being
Anxiety		Mental health	Psychological	
Depression		Mental health	Psychological	Subjective well-being
Suicidal ideation		Mental health		
Substance abuse		Drug and alcohol consumption		
Self-esteem	Individual domain	Mental health	Social	Psychological well-being (self-acceptance)
Interpersonal problems	Social domain		Social	Psychological well-being (positive relationships)
Family related problems	Social domain		Social	Psychological well-being (positive relationships)
Academic performance	Academic domain	Learning style		
Career planning issues	Individual domain	Career and employment issues		

Note. College Adjustment Scales (Anton & Read, 1991), WHOQOL-BREF (The WHOQOL Group, 1998), Satisfaction with Life Scale (Diener et al., 1985), PANAS (Watson and Clark, 1988), Psychological Well-being Scales (Ryff and Keyes, 1995).

Overall, the CAS seems to have adequate psychometric properties and it was chosen to measure QCL given the domains it assesses. More specifically, there seems to be significant theoretical overlap between the reviewed QCL literature and the domains measured by the College Adjustment Inventory (Table 2.1). However, the CAS has not been extensively studied in the literature as a QCL scale. It is also important to keep in mind that the CAS was designed to measure areas that signal difficulties with college adjustment; thus, higher scores on this measure are indicative of poor QCL while low scores on this measure are indicative of good QCL.

2.2.2 Quality of Life: World Health Organization Quality of Life (WHOQOL)

The WHOQOL-BREF is an abbreviated version of the WHOQOL-100, which was developed by the World Health Organization's Quality of Life Group. They collected data in 15 different countries, and they selected the physical, psychological, social relationships, and environment domains (Table 2.2) as being important to the quality of life of people in all 15 countries. Data used in selecting the final items for the abbreviated version was collected in 18 countries. The items were selected based on the following criteria: Items represented a large proportion of variance of the domain the items were selected from; items explained a large proportion of variance of the general QOL and general health items; items had the same factorial structure as the original WHOQOL-100; and items differentiated between healthy and ill people.

The final version of WHOQOL-BREF is formed by 26 items rated on 5-point Likert-type scale. Twenty-four items represent the original twenty-four facets of QOL, one item measures perceived general QOL, and another item measures general health.

Table 2.2

Domains Measured by the WHOQOL-BREF (WHO group, 1998)

Physical Health	Psychological	Social Relationships	Environment
Pain and discomfort	Positive feelings	Personal relationships	Freedom, physical safety, and security
Sleep and rest	Thinking, learning, memory and concentration	Social support	Home Environment
Energy and fatigue	Self-esteem	Sexual activity	Financial resources
Mobility	Bodily image and appearance		Health and social care: accessibility and quality
Activities of daily living	Negative feelings		Opportunities for acquiring new information and skills
Dependency on medical substances and Medical aids	Spirituality/religion/ personal beliefs		Participation in and opportunities for recreation/leisure activity
			Physical environment (pollution/noise/traffic/climate)
			Transportation

The new measure also discriminated between healthy and ill samples. The domains had good internal consistency (α = .66 to .84) and shared strong correlations with the domains of the original WHOQOL-100 (r = .89 to .95). Two to eight week re-test reliability correlations ranged from .66 to .87. The factorial solution of the brief measure followed the factorial solution of the complete measure: One second order factor (QOL) and four first order factors (Physical, Psychological, Social relationships, and Environment). The factorial structure was also invariant across samples, and the domains accounted for 61.5 to 68.4% of the variance of a composite formed by the general QOL item and the general health item. The Physical domain accounted for a greater proportion of the composite's variance (.31 − .38), followed by the Psychological (.29 −

.31), Environment (.20 − .21), and the Social Relationships domain (.13 − .17; WHOQOL Group, 1998).

A different study reported adequate Cronbach's alpha for the physical (.82), psychological (.81), and environment domains (.81); however, the social relationships domain (.68) had less adequate internal consistency. This study also supported that the WHOQOL-BREF differentiated between healthy and ill samples in most countries. When the total sample was analyzed, the items within each domain did not correlate strongly with other domains. Nonetheless, different patterns within countries were found when samples were analyzed separately. Common domain cross-loadings were identified for the energy, activities of daily living and work items. These items were originally from the physical domain but correlated strongly with the psychological domain. The same was found to be true for self-esteem, which was originally from the psychological domain but correlated strongly with all other domains (Skevington et al., 2004). The WHOQOL domains accounted for 42% of the general QOL item variance, 41% of the general health item variance, and 52% of the variance of a composite formed by the general QOL and general health items. The psychological (ß = .29) and the environment (ß = .25) domains accounted for most of the variance on the general QOL item while the physical (ß = .43) and the psychological (ß = .17) domains accounted for most of the variation on the overall health item. In addition, the physical (ß = .32) and the psychological domains (ß = .26) were the stronger predictors of a composite formed by the general QOL and general health items. Adequate fit indexes were reported for a factorial solution representing four first-order factors and one second-order factor. The item loadings on the first-order factors ranged from acceptable to excellent (Physical = .40 to .82; Psychological = .56 to .75; Social

Relationships = .59 to .77; Environment = .59 to .64) while loadings for the second-order factor were excellent (.83 to .95; Skevington et al., 2004).

2.2.3 Subjective Well-Being

Subjective well-being was measured with the Satisfaction with Life Scale (SWLS) and the Positive and Negative Affect Schedules (PANAS).

2.2.3.1 Satisfaction with Life Scale

The SWLS is a 5-item 7-point Likert-type scale developed with undergraduate students (Cronback's α = .87, item-total-correlations = .57-.75; Diener, Emmons, Larsen and Griffin, 1985). The SWLS is unidimensional. It has good internal reliability (.80-.89) across samples and good test-retest reliability at two weeks (.83), one month (.84), two months (.82-83), ten weeks (.50) and 4 years (.54). In addition, changes in the SWLS' total score vary with changes in people's lives while other measures such as anxiety and depression remain relatively unchanged (Vitaliano et al., 1991). The SWLS has good convergent and divergent validity with several measures including the Life Satisfaction Index- form A (r = .81). Moreover, the SWLS filled out by participants and by the participants' peers seem to share a significant correlation (.54; Pavot et al., 1991; Pavot & Diener, 1993, Wallace et al., 2002).

2.2.3.2 Positive Affect and Negative Affect Schedule

The PANAS was developed as two 10-items 5-point Likert-type scales. One scale measures positive affect (PA) while the other scale measures negative affect (NA). The development study of the PANAS had three samples: 194 undergraduate students answered how

they felt during the past few weeks; 50 undergraduate students answered how they felt during the past few days; and 53 adults answered the questions based on how they felt the day they filled out the questionnaire. The final version of the PANAS was given to large samples. Participants answered the items in regards to seven different time-points. People reported higher levels of positive affect compared to negative affect. The results also indicated that the PANAS had high levels of internal consistency reliability regardless of timeframe (PA: .89 to .90; NA: .84 to .87). A weak correlation between Positive Affect and Negative Affect (r = -.13 to -.23) was also reported.

The PANAS can be used to track diurnal variations in mood when used with short timeframe directions; however, test-retest reliability (.84 − .90) tends to increase as the timeframe specified on the measure increases. Furthermore, Watson and Clark (1988) suggested that "the stability coefficients of the general ratings are high enough to suggest that they may in fact be used as trait measures of affect" (p. 1065). Similar psychometric properties were found with a clinical sample. However, participants in the clinical sample had significantly higher and more variable NA (M = 26.6, SD = 9.2) compared to the normative group (M = 18.1, SD = 5.9). External validity was supported by the correlations between PA, NA and the Hopkins Symptom Checklist (Positive affect: r = -.19 to -.29; Negative affect: r = .65 to .74); the Beck Depression Inventory (Positive affect: r = -.35 to -.36; Negative affect: r = .56 to .56); and the State Trait Anxiety Inventory- Anxiety Scale (Positive affect: r = -.35; Negative affect: r = .51; Watson & Clark, 1988).

The PANAS' reliability and construct validity has been supported by many researchers; however, the factorial structure of the PANAS seems to be up for debate. Watson and Clark (1988) reported that two factors (item loadings of .50 and higher) accounted for most the

PANAS' variance (87.4 to 96.1%). Crawford and Henry (2004) tested several factorial models. Their preferred model allowed the PA and NA factor to correlate, and the error terms within each scale to correlate. Nevertheless, the size of the correlation between PA and NA (-.30) suggested these two constructs are mostly independent from each other. Crawford and Henry (2004) also found that the PANAS has measurement invariance in regards to demographic characteristics (Crawford & Henry, 2004). A recent article on the factorial structure of the PANAS found this measure to be formed by three uncorrelated factors: PA, NA, and a third general factor which the authors named Affective Polarity. The general factor was formed by items that also loaded on the PA or NA factors and it seems to measure approaching (high score) and withdrawing (low score) behavioral tendencies. Nonetheless, the third factor is not correlated with PA or NA, which suggests that it accounts for unique variance (Leue, & Beauducel, 2011).

2.2.4 Psychological Well-Being: Psychological Well-Being Scales

Psychological well-being was measured with Ryff's Psychological Well-being Scales. A theoretically based measure derived from interdisciplinary theories of psychological health. The scale covers the following dimensions: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth (Ryff, 1995). There are several versions of Ryff's Psychological Well-being Scales: The original 20-item per scale version, and the abbreviated 14-items, 9-items, 7-items and 3-items per scales versions. This study used the 7-item per scale version, which was also used in the Midlife in the Unites States (MIDUS-II) study. The scale has a total of 42 items and it is rated on a 7-point Likert-type scale. The 7-item per scale version has adequate internal consistency when used with older women (N = 518) and middle age adults (N = 8493; Positive Relations α = .78 to .81; Autonomy α = .70 to .72;

Environmental Mastery α = .72 to.75; Personal Growth α = .78; Purpose in Life α = .71 to .79; Self-Acceptance α = .79 to .82; C. Ryff, personal communication, July 28, 2011).

Ryff and Keyes (1995) proposed a model with six first order factors loading into a second order factor. However, this factorial structure has been confirmed by some researchers and rejected by others (Springer & Hausen, 2006). A study using different abbreviated versions of the RPWS found six first order correlated factors to be the best factorial solution. This study also found that six of the correlations between the latent variables were above .9. In addition, fit for the factorial solution improved when a negative word factor was added. Fit also improved when the error terms for adjacent questions and three pair of item were allowed to correlate. However, using a negative word factor and allowing the error terms to correlate did not decrease the strength of the latent correlations between environmental mastery, purpose in life, self-acceptance, and personal growth (Springer & Hausen, 2006).

2.2.5 Interpersonal Attachment Style: Experiences in Close Relationships-Relationship Structure Questionnaire

Attachment style was measured using the Experiences in Close Relationships – Relationship Structure (ECR-RS) questionnaire, which is a modification of the widely used Experiences in Close Relationships (ECR) scale. The ECR-RS looks at attachment anxiety (worrying about the availability and responsiveness of attachment figure) and avoidance (uncomfortable opening up and depending on others) in people's relationships with their mother, father, romantic partner and closest friend. This scale views attachment security and insecure in dimensional terms. Higher scores of attachment anxiety or avoidance suggest low levels of attachment security and vice versa (Fraley, 2005). Nine items scored on a 7-point Likert-type scale assess attachment within each type of relationship, making the scale 36-items long.

The ECR-RS was developed through an online survey were 21,838 people responded to 40 modified items from the ECR. Participants were married or in dating relationships and, they were mostly young Caucasian females. The results of factor analyses suggested that attachment within each type of relationship loaded on two factors: anxiety and avoidance. Consequently, the authors analyzed the data by forming an Anxiety (α = .88 to .91) and Avoidant composites (α = .87 to .98). The results suggested most participants were securely attached to their mothers, romantic partners and friends. Nevertheless, participants in general tended to have an avoidant attachment style with their fathers. In terms of gender, men were more likely to report attachment avoidance across relationships compared to women. Moreover, people who had a high attachment avoidance score tended to have a high attachment anxiety score (Fraley et al., 2011).

On a second study, Fraley et al. (2011) collected data from 388 participants in order to establish the ECR-RS' convergent and concurrent validity. Participants had similar demographic characteristics to the previous sample. This study compared the ECR-RS to the ECR and found them to be weakly correlated except for a the strong correlations between the RS-romantic avoidance scales and the ECR. This suggests that the ECR mostly measures romantic attachment even though it is used as a general attachment measure. Both measures also indicated that insecurely attached people scored lower on relationship commitment, satisfaction and investment. They also viewed alternative partners as more desirable and had higher levels of depression.

2.2.6 Emotion Regulation: Difficulties in Emotion Regulation Scale

The Difficulties in Emotion Regulation Scale (DERS) is a theoretically based measure of

emotion regulation. The items within this scale look at the behavioral, cognitive, and emotional tendencies of individuals who are experiencing a negative mood. More specifically, the DERS looks at modulation of affective arousal, affect awareness, and the understanding and acceptance of emotions. In addition, the DERS intends to measure people's ability to choose how to behave regardless of their current emotional state, and their ability to access to the emotion regulation strategies they perceive as effective. The initial DERS was a 41 item 5 point Likert-type scale. However, five items were removed after the first validation study with a sample of undergraduate students. A six-factor solution allowing for inter-factor correlations was chosen to represent the data. These factors also represent the emotion regulation processes measured by this survey. The six factors and the internal consistency of the items within each factor were as follow: Non-acceptance of Emotional Responses (Non-acceptance; α = .85), Difficulties Engaging in Goal-Directed Behavior (Goals; α = .89), Impulse Control Difficulties (Impulse; α = .86), Lack of Emotional Awareness (Awareness; α = .80), Limited Access to Emotion Regulation Strategies (Strategies; α = .88), and Lack of Emotional Clarity (Clarity; α = .84). The DERS construct validity was supported by its relationship with the Generalized Expectancy for Negative Mood Regulation Scale, and the Acceptance and Action Questionnaire. Furthermore, the DERS accounted for additional variance on experiential avoidance, and emotional expressiveness compared to scales developed to measure these constructs. Predictive validity was established by using the DERS to predict self-harm among men and women, and intimate partner violence among men. The only gender difference found by this study was that women reported higher levels of emotional awareness compared to men (Gratz & Roemer, 2004). The DERS also demonstrated similar psychometric properties with an adolescent community sample and a Turkish sample (Neumann et al., 2010; Ruganci & Gencoz, 2010).

2.2.7 Basic Needs: Basic Needs Satisfaction Scale

The 16 item 5 point Likert-type General Need Satisfaction Scale was used to measure Autonomy, Competence and Relatedness. This scale was adapted from a measure of needs satisfaction at work (Gagné, 2003). The development sample was formed by undergraduate students who answered 24 items rated on a 7-point Likert-type scale. Autonomy (α = .69) and Relatedness (α = .86) were measured with 7 items, and Competence was measured with 8 items (α = .71; *r* = 61 to .66). Gagné, who adapted this measure, formed a general satisfaction index (α = .89) by averaging the scores of the three basic needs. Currently, the General Need Satisfaction Scale has been abbreviated to 21 items. However, a reduction to 16-items has been proposed based on theory and the psychometric properties of the measure with three separate samples of undergraduate students (e.g. Item 7 and 16 appeared to be the same, only item 7 was retained as it seemed more representative of Relatedness). Data obtained with this scale tends to be kurtotic, and it can be explained by three need related factors and one negative word effect factor. Nonetheless, a study reported that most of the items' variances were not explained by their respective factors. The loadings of the Competence and Relatedness items on the negatively worded factor tended to be usually stronger than for the need factors. The sub-scales correlations were as follow: Autonomy and Competence (*r* = .60 to .82), Autonomy and Relatedness (*r* = .70 to .81), and Competence and Relatedness (*r* = .57 to .78). The subscales also had relatively low reliability: Autonomy (α = .60 to .68), Competence (α = .55 to .62), and Relatedness (α = .78 to .82; Johnston, & Finney, 2010). Johnston et al. (2010) also tested the external validity of this basic needs measure at the latent construct level. They concluded that this measure differentiated between three subscales of the Ryff's Psychological Well-Being Scales (Johnston et al., 2010).

2.3 Procedures

A questionnaire including the described measures was created and distributed using Qualtrics®, a computer program designed to format and distribute questionnaires online (Qualtrics Labs Inc., 2011-2012). Data collection lasted two consecutive academic semesters: fall 2011 and spring 2012. Undergraduate students found the study through SONA, a website designed to recruit students for the psychology department's studies. All undergraduate students aged 18 and older seeking to gain extra-credits for psychology courses were eligible to participate. Students had access to the study's title and description before signing up. They requested a password by emailing the student investigator after signing up for the study. Afterwards, they logged into the SONA system, the universitiy's online research participation pool, and clicked on a link to be redirected to Qualtrics. Students were asked to read the informed consent and agree to participate in the study before answering the questionnaire. Students were allowed to take the survey from any computer and at any time before the end of the academic semester.

2.4 Data Analytic Strategy

SAS 9.3® (SAS Institute Inc.) was used for data preparation and all the analyses presented in this paper except for multiple imputations. Imputations were conducted with a SAS® add-on program named Imputation and Variance Estimation Software (IVEware, Raghunathan et al., 2002). This software was developed at the University of Michigan, and it does multiple imputations using chain bivariate equations (ICE or MICE), a types of imputations that do not assume multivariate normality (UCLA).

All variables were recoded to indicate higher levels of the domain being measured. For

example, a high score on life satisfaction indicates the student reported high levels of life satisfaction. Similarly, a high depression score suggests the student reported high levels of depression. Additionally, data within the scales was summarized using composites or parcels. For instance, a depression composite was calculated for the College Adjustment Scales (CAS) by adding all the depression items within the scale to calculate one score. Creating composites is generally regarded as a good practice when used to summarize unidimensional measures, and when the goal is to understand the nature of the construct of interest and not the structure of a set of items. Using composites is a good practice within the current study because all the composites appeared to empirically represent unidimensional measures, and the study sought to understand the relationship between theoretical factors. In addition, using composites instead of items increases the internal reliability and stability of the measured constructs, improves normality, and increases the stability of parameters estimated via structural equation modeling as well as model fit (Holt, 2004; Little, Cunningham, Shahar, & Widaman, 2002). All the composites used in this study were normally distributed except for the CAS's Suicidal Ideation composite. Nevertheless, some structural models were specified at the item level. Item level models are clearly identified in the Method and Results sections (Chapter 2 and 3). In addition, factors were named based on the areas measured by the composites loading into the factor.

Model parameters were estimated using unweighted least squares diagonal weighted least squares, a robust procedures that provides more accurate parameter estimates and fit statistics with non-continuous and non-normally distributed variables (Mindrila, 2010). This procedure was chosen instead of maximum likelihood because all the measures included in this study lacked multivariate normality as assessed by Mardia's multivariate kurtosis (MMK). Variables are considered not to be multivariate normal when MMK is greater than plus or minus 1.96

(Mardia, 1970). Results based on this procedure were similar to the results obtained with maximum likelihood except that the robust modeling results had better fit statistics. Model fit was assessed with two absolute fit indexes **(**standardized root mean square residual or SRMSR and goodness-of-fit index or GFI), and one incremental fit index (Bentler-Bonnett normed fit index or NFI). The SRMSR looks at the difference between the observed and predicted correlation matrix. Values lower than .10 indicate good fit. The GFI represents "the proportion of the variability of the covariance matrix explained by the model" with values over .90 representing good fit (Kline, 2005, p.144). The NFI compares the model to a null model (all measured variables are uncorrelated) and values over .95 suggest good fit (Kenny, 2012). The SRMSR for the models reported in this study ranged between .01-.09, the GFI ranged between .97-.99, and the NFI ranged between .94-.99. This was not the case for two rejected attachment models discussed later in the Results section (Chapter 3). of this document (SRMSR = .11, GFI .92-.93, NFI = .78-.80). The values of specific fit indexes can be found at the end of the Results section and below each figure.

2.5 Measurement Validation, Hypothesis and Research Questions

The results of hypothesis testing are reported in the Results section (Chapter 3) and they are organized by the following category groups.

2.5.1 Validating the College Adjustment Scales as a Quality of College Life Measure

Hypothesis 1: Quality of college life, quality of life as measured by the WHOQOL, psychological well-being and subjective well-being are all aspects of quality of life. Therefore, they should be moderately to strongly related to each other.

Research Question 1: Is quality of college life a subdomain of quality of life as measured by the WHOQOL or a quality of life measure on its own?

2.5.2 Attachment Style and Psychological Needs

Research Question 2: Which attachment relationship (e.g. mother, friend) is more conductive to the students' psychological needs fulfillment?

2.5.3 Attachment Style and Quality of College Life

Research Question 3: Which attachment relationship is more conductive to the students' quality of college life?

2.5.4 Attachment Style and Emotion Regulation

Research Question 4: Which attachment relationship is more conductive to the students' emotion regulation abilities and practice?

2.5.5 Psychological Needs as Predictors of Quality of College Life

Hypothesis 2: People with high levels of autonomy, competence and relatedness will score higher on quality of college life.

2.5.6 Final Models

Hypothesis 3: People with higher scores on the emotion regulation difficulties scale will also have higher scores within the poor quality of college life scale.

Hypothesis 4: Emotion regulation will mediate the relationship between attachment style and quality of college life.

Hypothesis 5: The fulfillment of needs will mediate the relationship between attachment styles and quality of college life.

Hypothesis 6: The fulfillment of needs will mediate the relationship between emotion regulation and quality of college life.

CHAPTER 3

RESULTS

3.1 Measures

3.1.1 College Adjustment Scales

The College Adjustment Scales (CAS) was completed by 505 participants. Nine variables were reverse coded and nine composites were formed based on information provided by the CAS manual (Anton & Read, 1991). Each composite was formed by the sum of nine non-overlapping items. Those composites were: Academic problems (*M* = 22.91, *SD* = 6.95, *Min* = 12, *Max* = 46, mean inter-item correlation or *MIC* = .39), anxiety (*M* = 21.23, *SD* = 7.51, *Min* = 12, *Max* = 48, *MIC* = .42), interpersonal problems (*M* = 19.46, *SD* = 6.02, *Min* = 12, *Max* = 41, *MIC* = .31), depression (*M* = 18.42, *SD* = 5.94, *Min* = 12, *Max* = 43, *MIC* = .38), career problems (*M* = 18.55, *SD* = 7.37, *Min* = 12, *Max* = 46, *MIC* = .50), suicidal ideation (*M* = 13.94, *SD* = 3.93, *Min* = 12, *Max* = 46, *MIC* = .44), substance abuse (*M* = 15.45, *SD* = 5.46, *Min* = 12, *Max* = 46, *MIC* = .46), self-esteem issues (*M* = 23.66, *SD* = 5.22, *Min* = 12, *Max* = 43, *MIC* = .33), and family problems (*M* = 18.18, *SD* = 5.28, *Min* = 12, *Max* = 41, *MIC* = .27). The CAS' composites shared correlations between .31and .73, and the CAS' items had excellent internal consistency reliability with the current sample (α = .89; *MIC:* .22). Nonetheless, the suicidal ideation composite was not normally distributed (skewness = 3.26, kurtosis = 14.08). Loadings ranged between .46-.89 (Appendix E).

3.1.2 World Health Organization Quality of Life

The World Health Organization Quality of Life (WHOQOL) measure was completed by 503 students. Three variables were recoded and four composites were formed by finding the

mean of the items within each composite and then multiplying the result by 4. The final scores were obtained by transforming the total composites scores from a 4-20 scale to a 0-100 scale as directed by the scoring manual (The WHOQOL Group, 1996). The scaling was done to make the composite scores of the WHOQOL-BREF comparable to the composite scores of the WHOQOL-100. The physical health composite was formed by 7 items (*M* = 75.16, *SD* = 15.15, *Min* = 13, *Max* = 100, *MIC* = .32), the psychological domain by six items (*M* = 66.33, *SD* = 17.86, *Min* = 6, *Max* = 100, *MIC* = .45), the social relationships domain by 3 items (*M* = 68, *SD* = 21.49, *Min* = 6, *Max* = 100, *MIC* = .43), and the environment domain by eight items (*M* = 71.46, *SD* = 15.68, *Min* = 19, *Max* = 100, *MIC* = .32). In addition to the composites, the WHOQOL includes an overall QOL item (*M* = 4.21, *SD* = .76, *Min* = 1, *Max* = 5) and a general health item (*M* = 3.63, *SD* = 1.01, *Min* = 1, *Max* = 5). The composites and two overall items were normally distributed. The composites shared correlations between .49 and .67 (*MIC* = .29; Appendix B). The factorial structure of the WHOQOL was calculated based on previous findings (Lee et al., 2005; Ohaeri et al., 2007). The mentioned four composites were loaded into a latent factor named WHOQOL. The loadings ranged from .64 – .83. The WHOQOL factor was also a good predictor of the general QOL item (Path = .69).

3.1.3 Satisfaction with Life Scale

The Satisfaction with Life Scale (SWLS) was completed by 507 students. The SWLS (*M* = 5.06, *SD* = 1.20, Min = 1, Max = 7, MIC = .58, α = .87) is a unidimensional measure; however, two composites (*M* = 4.95, *SD* = 1.30, Min = 1, Max = 7, MIC = .57; *M* = 5.22, *SD* = 1.23, Min = 1, Max = 7, MIC = .55) were formed by randomly distributing the items into two groups and finding the mean of each group of items. This was done to make the scale amenable to structural

equation modeling. The two composites were strongly related (r = .78). Confirmatory factor analysis indicated the following equally constrained loadings: Composite 1 (.88), Composite 2 (.88).

3.1.4 Positive Affect and Negative Affect Schedule

The Positive Affect and Negative Affect Schedule (PANAS) was completed by 505 students. Positive affect (M = 32.61, SD = 8.17, Min = 10, Max = 50, MIC = .47) and negative affect (M = 20.4, SD = 7.38, Min = 10, Max = 50, MIC = .41) composites were formed by finding the sum of the 10-items within each scale (Watson, Clark, & Tellegan, 1998). The composites shared a weak correlation (-.24), and the overall scale had adequate internal consistency relativity (α = .66, MIC = .14). This scale was first modeled at the item level to provide support for the MIMIC model reviewed below, but it was modeled at the composite level when used within larger models. A three factor MIMIC model was calculated following the factor structure selected by Leue and Beaudel's (2011). However, four negative affect items had negative loadings while the remaining six items had positive loadings on the Negative Affect factor. A two factor solution was chosen. Positive Affect and Negative Affect were weakly correlated (r = -.30).

3.1.5 Psychological Well-Being Scales

Ryff's Psychological Well-being Scales (PWBS) were completed by 503 students (Appendix A). Six composites were formed by the average of 7 items: autonomy (M = 4.85, SD = .98, Min = 1, Max = 7, MIC = .22), environmental mastery (M = 4.85, SD = 1.08, Min = 2, Max = 7, MIC = .34), positive relations (M = 5.41, SD = 1.02, Min = 2, Max = 7, MIC = .30),

personal growth (*M* = 5.24, *SD* = .97, *Min* = 3, *Max* = 7, *MIC* = .25), self-acceptance (*M* = 4.96, *SD* = 1.22, *Min* = 1, *Max* = 7, *MIC* = .40), and purpose in life (*M* = 5.43, *SD* = 1.46, *Min* = 2, *Max* = 7, *MIC* = .32). The composites shared correlations between .55 and .85 (α = .88, *MIC* = .24; Appendix B). The composites were loaded into one factor named PWBS following the model presented by Keyes, Shmotking and Ryff (2002). Loadings ranged from .55-.85.

3.1.6 Experiences in Close Relationships-Relationship Structure Questionnaire

The Experiences in Close Relationships – Relationship Structure questionnaire (ECR-RS) was completed by 503 students. Four attachment avoidance composites, one for each type of relationships studied (mother, father, romantic partner, best friend), were formed by averaging six items. Four items per avoidant composite were recoded. Avoidant attachment was measured within the following relationships: Mother (*M* = 2.73, *SD* = 1.56, *Min* = 1, *Max* = 7, *MIC* = .63), father (*M* = 3.54, *SD* = 1.77, *Min* = 1, *Max* = 7, *MIC* = .67), romantic partner (*M* = 1.82, *SD* = 1.02, *Min* = 1, *Max* = 7, *MIC* = .55), and best friend (*M* = 2.21, *SD* = 1.16, *Min* = 1, *Max* = 6, *MIC* = .57). Four attachment anxiety composites were calculated. Each composite was formed by averaging three items for the following relationships: Mother (*M* = 1.58, *SD* = 1.15, *Min* = 1, *Max* = 7, *MIC* = .68), father (*M* = 2, *SD* = 1.54, *Min* = 1, *Max* = 7, *MIC* = .73), romantic partner (*M* = 2.31, *SD* = 1.63, *Min* = 1, *Max* = 7, *MIC* = .74), and best friend (*M* = 2.12, *SD* = 1.43, *Min* = 1, *Max* = 7, *MIC* = .82). A global avoidance composite (*M* = 2.68, *SD* = .95, *Min* = 1, *Max* = 6, *MIC* = .20) was calculated by averaging the participant's scores in all four avoidance composites. A global anxiety composite (*M* = 1.96, *SD* = 1.01, *Min* = 1, *Max* = 7, *MIC* = .32) was calculated following the same procedure described above. Lower scores on attachment avoidance and anxiety signaled attachment security.

Table 3.1

Experiences in Close Relationships – Relationship Structure (ECR-RS)

	Total (Av.)	Mom (Av.)	Dad (Av.)	Date (Av.)	Bf (Av.)	Total (Ax.)	Mom (Ax.)	Dad (Ax.)	Date (Ax.)	Bf (Ax.)
Total Avoidance	1									
Mom (Av.)	0.69	1								
Dad (Av.)	0.74	0.27	1							
Date (Av.)	0.56	0.21	0.18	1						
Best friend (Av.)	0.54	0.17	0.13	0.29	1					
Total Anxiety	0.55	0.38	0.41	0.29	0.31	1				
Mom (Ax.)	0.39	0.56	0.13	0.15	0.13	0.69	1			
Dad (Ax.)	0.42	0.1	0.59	0.12	0.09	0.72	0.35	1		
Date (Ax.)	0.32	0.22	0.18	0.36	0.11	0.77	0.37	0.33	1	
Bf (Ax.)	0.4	0.23	0.15	0.16	0.5	0.68	0.29	0.23	0.37	1
M	2.69	2.73	3.55	1.83	2.21	1.96	1.58	2	2.31	2.13
SD	0.95	1.56	1.77	1.02	1.16	1.01	1.16	1.54	1.64	1.43

N = 505. Av: Avoidance, Ax: Anxiety.

The Relationship Structures Questionnaire items also had high internal consistency reliability (α = .72, *MIC* = .22). The correlation between the composites ranged from weak (.09) to strong (.77; Table 3.1). Questions related to attachment style with a romantic partner were only available to the 268 participants who were in a relationship at the time of the study. The remaining 237 participants had missing data on the attachment variable related to romantic relationships. This data was imputed using the procedure described at the beginning of Chapter 3. Similar results were obtained with listwise and imputed data.

The factorial structure for each type of relationship was calculated separately following the structure presented by Fraley et al. (2011) modeled at the item level with Anxiety and Avoidance as correlated factors. I attempted to create an overall avoidance and an overall anxiety attachment factor by loading the composites representing avoidance within each type of relationship to the Avoidance factor and the anxiety composites to the Anxiety factor; however, this model had poor fit which suggests that attachment style should be studied for each type of relationship separately to reduce the chances of introducing misspecification errors to the models. The results also suggest that attachment avoidance and attachment anxiety relate to each other differently based on the type of relationship studied.

3.1.7 The Difficulties in Emotion Regulation Scale

The Difficulties in Emotion Regulation Scale (DERS) was completed by 503 participants. Eleven variables were recoded and six composites were formed (Gratz & Roemer, 2004). The sum of five items formed the difficulty in goal directed behavior (*M* = 13.24, *SD* = 4.81, *Min* = 5, *Max* = 25, *MIC* = .57) and no emotional clarity composites (*M* = 10.29, *SD* = 3.76, *Min* = 5, *Max* = 24, *MIC* = .47). The sum of six items formed the non-acceptance of emotions (*M* = 11.19, *SD* = 5.54, *Min* = 6, *Max* = 30, *MIC* = .63), impulse control (*M* = 10.40, *SD* = 4.44, *Min* = 6,

Max = 29, *MIC* = .54) and lack of awareness composites (*M* = 14.80, *SD* = 4.99, *Min* = 6, *Max* = 29 *MIC* = .46). The sum of eight items formed the no emotion regulation strategies scale (*M* = 14.95, *SD* = 6.39, *Min* = 8, *Max* = 36, *MIC* = .53). The correlations between the composites ranged between .07 and .68 (Appendix B). The items' overall internal consistency reliability was .82, and the overall mean inter-item correlation (MIC) was .31.

The factorial structure for this scale was calculated based on results published by Gratz and Roemer (2004). However, the model selected contrasted Gratz et al.'s in that the awareness and clarity composites were combined by finding their mean. This was done because the lack of clarity composite had poor loadings when entered by itself and combining the difficulties with emotional awareness and clarity composites resulted in a better fitting model. In addition, the original conceptualization of the DERS defined lack of awareness and clarity of emotion as one domain (Gratz et al., 2004). Another difference between the selected the model and the model proposed Gratz & Roemer (2004) was that the factorial structure for this study was calculated using composite scores and not at the item level. The loading ranged from .46 to 94 (Appendix E).

3.1.8 The General Needs Satisfaction Scale

The General Needs Satisfaction Scale was completed by 503 participants. Five variables were recoded and three composites were formed (La Guardia et al., 2000). The autonomy composite was formed by the mean of three items (*M* = 5.46, *SD* = 1.13, *Min* = 1, *Max* = 7, *MIC* = .46), the competence composite (*M* = 5.05, *SD* = 1.10, *Min* = 1, *Max* = 7, *MIC* = .36) by the mean of six items, and the relatedness composite (*M* = 5.63, *SD* = .93, *Min* = 2, *Max* = 7, *MIC* = .40) by the mean of seven items. The composites shared correlations between .61 and .67

(Appendix B). The overall measure had high internal consistency reliability with the current sample. (α = .84, *MIC* = .35).

The factorial structure of this scale was calculated following a model proposed by Johnston and Finney (2010). The model has 16 items and 4 related factors: Autonomy, Competence , Relatedness and a Negative-Item Method Effect (Appendix E); nevertheless, it is worth noting that the General Needs Satisfaction Scale was modeled differently when used as part of larger, more comprehensive, models. Within comprehensive models basic needs were used as either observed variables or as composites loading on one factor. This distinction is clearly marked for the modeling results in the remaining part of Chapter 3.

3.2 Validating the College Adjustment Scales as a Quality of College Life Measure

Correlations between the composites measuring poor QCL (CAS), subjective well-being (PANAS, SWLS), psychological well-being (PWBS), and quality of life (WHOQOL) were mostly in the moderate to strong range and in the expected direction (Appendix D). The factorial structure for subjective well-being, psychological well-being and quality of life were calculated to facilitate the validation of the College Adjustment Scales as a measure of poor QCL (Appendix E). However, negative affect items were removed from the subjective well-being model before finding a latent correlation between the Subjective Well-Being and Poor QCL factors because negative affect items were highly correlated to all the Poor QCL composites. The factorial correlation between Poor QCL and Subjective Well-Being (r = -.70; Figure 3.1), Psychological Well-Being (r = -.75; Figure 3.2) and quality of life were large in magnitude (r = -.76; Figure 3.3).

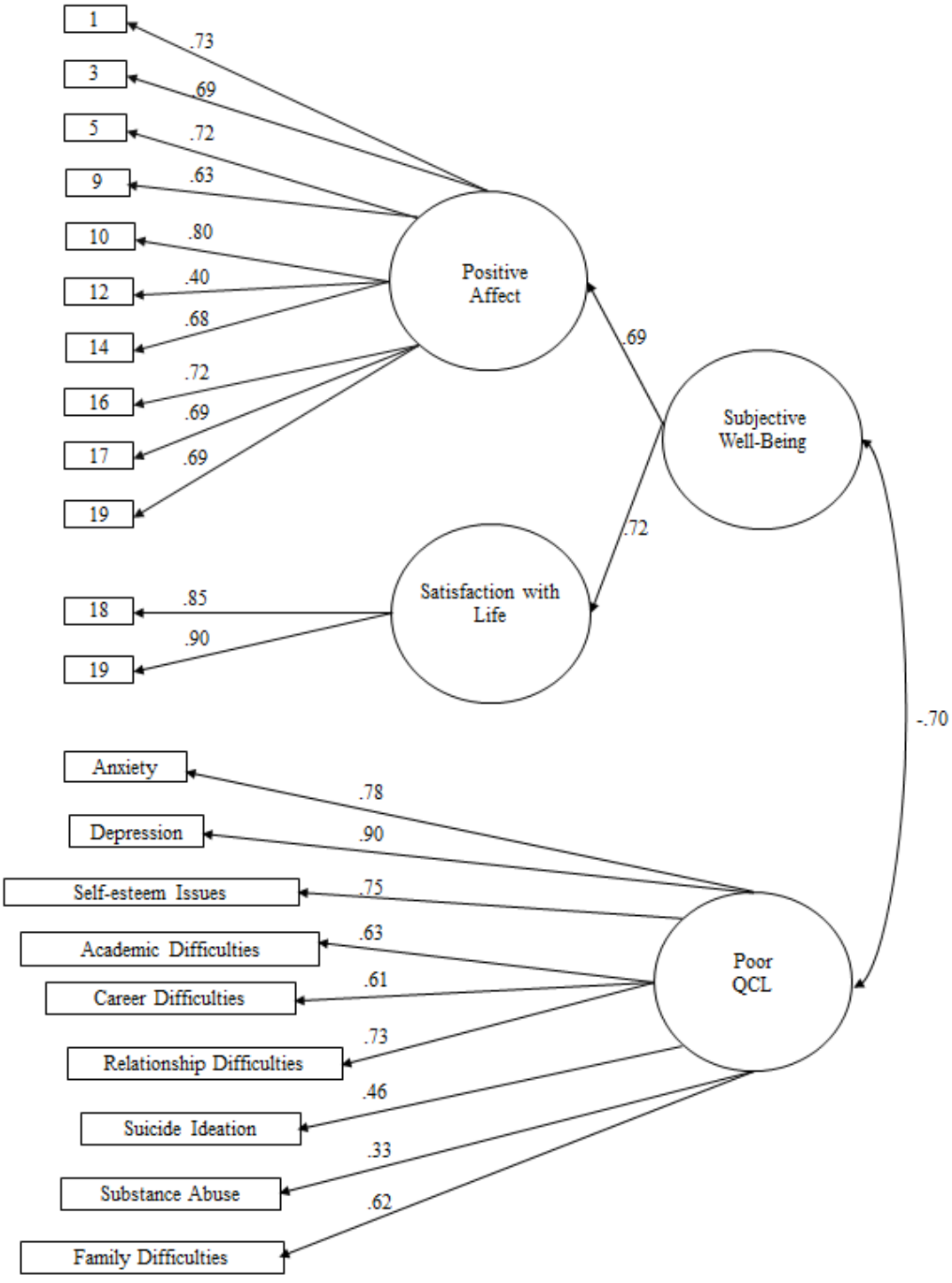

Figure 3.1. Factorial correlation between Subjective Well-Being and Poor Quality of College Life (N = 505, *SRMSR* = 0.06, *GFI* = .97, *NFI* = .96).

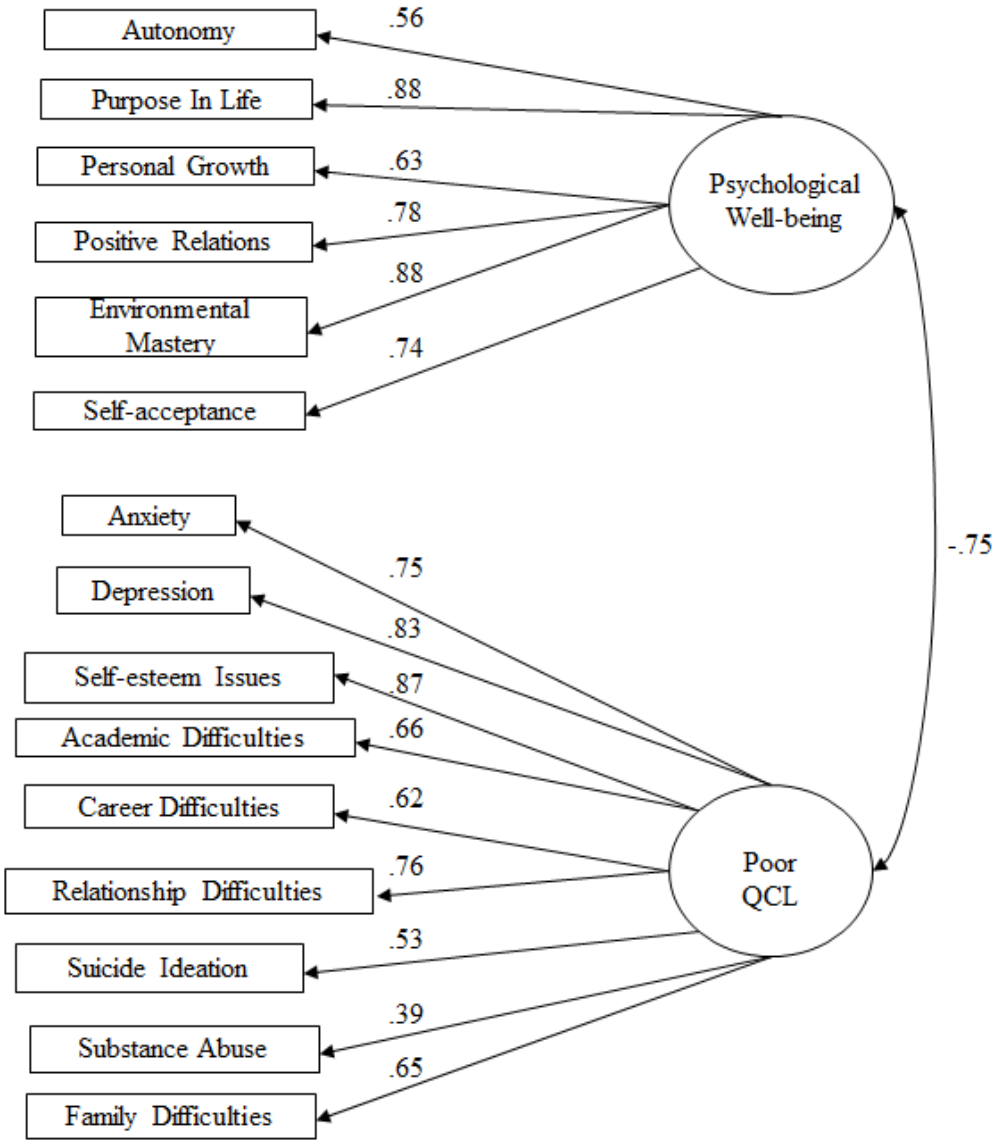

Figure 3.2. Factorial correlation between Psychological Well-Being and Poor Quality of College Life (*N* = 503, *SRMSR* = 0.06, *GFI* = .98, *NFI* = .98).

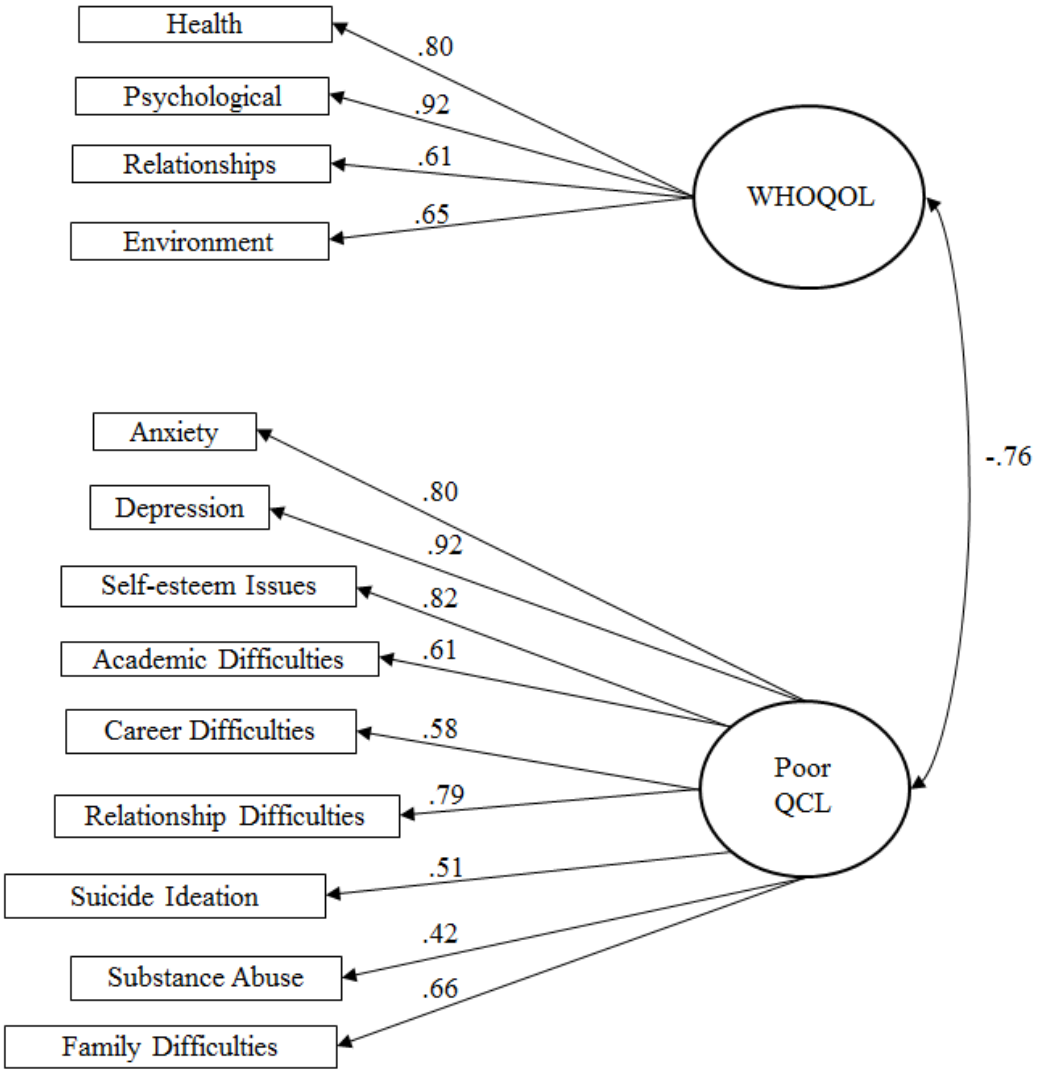

Figure 3.3. Factorial correlation between the WHOQOL and Poor Quality of College Life (*N* = 503, *SRMSR* = 0.05, *GFI* = .98, *NFI* = .98).

An additional factor analysis was conducted to test whether Poor QCL was a subdomain of QOL as measured by the WHOQOL or a QOL measure on its own. Exploratory Factor Analyses suggested the presence of two factors. One factor included all the WHOQOL composites and the other factor included all the poor QCL composites. However, the self-esteem composite loaded on both factors. There was also a factorial correlation of -.66 when both factors were allowed to correlate. Thus, the latent factors representing Poor QCL and WHOQOL were

loaded to a higher order factor (Figure 3.4). This model had better fit than a model where all composites were allowed to load directly into one QOL factor. The results suggest that poor QCL was not a subdomain of WHOQOL. Instead, the Poor QCL (loading = -.80) and the WHOQOL (loading = .95) factors loaded into an overall (more comprehensive) QOL factor that was more representative of the WHOQOL than of QCL.

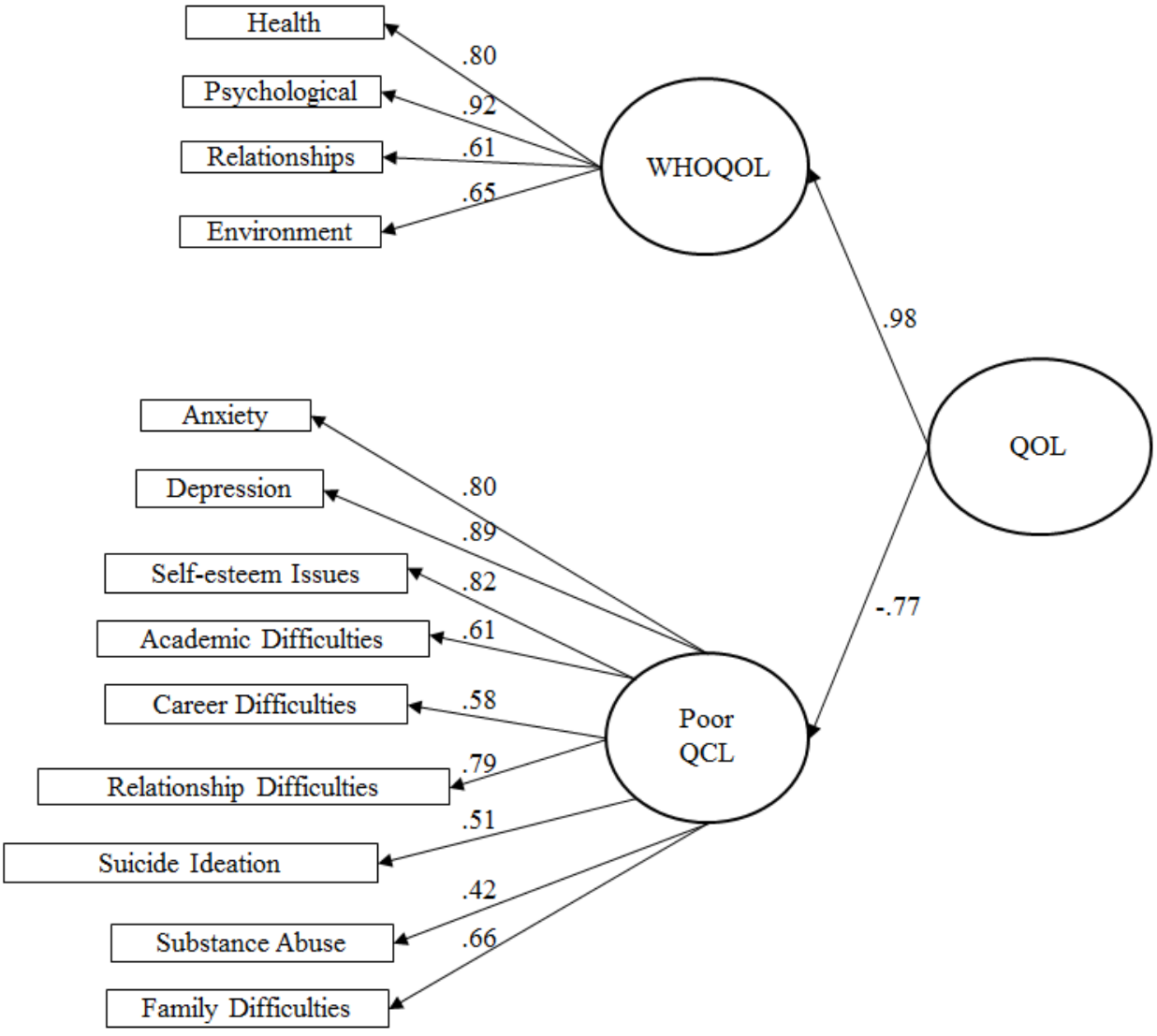

Figure 3.4. Quality of Life as represented by Poor Quality of College Life and the WHOQOL (*N* = 500, *SRMSR* = 0.06, *GFI* = .99, *NFI* = .98).

3.3 Attachment Style and Psychological Needs

A separate structural equation model was calculated for each attachment relationship and observed psychological need composite to further investigate the effect of attachment relationships on psychological needs fulfillment. Attachment anxiety and Avoidance factors were allowed to correlate and predict each psychological need composite. Mother Attachment Avoidance was a better predictor of psychological needs (*Paths' M* = -.27) than Mother Attachment Anxiety (Paths' *M* = -.11). The same pattern was observed for Avoidance and Anxious Attachment with fathers as predictors of psychological needs (Avoidance Paths' *M* = -.19; Anxiety Paths' *M* = -.05). The paths from Romantic Partner Avoidance (Autonomy Path = -.26; Relatedness Path = -.21) and Romantic Partner anxiety (Autonomy Path = -.24; Relatedness Path = -.25) to Autonomy and Relatedness had approximately the same magnitude. However, the path from Romantic Partner Anxiety to Competence (Path = -.33) was stronger than the path from Romantic Partner Avoidance to Competence (Path = -.16). The path from Best Friend Avoidance to Relatedness (Path = -.33) was slightly larger than the path from Best Friend Anxiety to Relatedness (Path = -.28). However, the paths from Best Friend Anxiety to Autonomy and Competence (Autonomy Path = -.28; Competence Path = -.28) were stronger than the paths from Best Friend Avoidance to Autonomy and Competence (Autonomy Path = -.18; Relatedness Path = -.14). Overall, it seems that the psychological needs of college students were affected more strongly (and with about the same magnitude) by the attachment style they have with their romantic partners and their best friend followed by their attachment style with their mothers and fathers respectively. Additionally, the prominence of an Anxious and Avoidant attachment style as predictors of psychological needs depended on the type of relationship and the psychological need studied (Figures located in Appendix G).

3.4 Attachment Style and Quality of College Life

A correlation table between the poor QCL and attachment composites (Table 3.2) shows that attachment avoidance shares a weaker correlation with anxiety ($r_{Avoidance}$ = .26; $r_{Anxiety}$ = .36) and depression ($r_{Avoidance}$ = .35; $r_{Anxiety}$ = .44) than attachment anxiety. Attachment anxiety and attachment avoidance are also weakly related with the academic difficulties and career problems composites and moderately to strongly related with increased interpersonal problems, the presence of suicidal ideation, self-esteem problems and family problems. In addition, the correlation table between the poor QCL and attachment composites as well as the results of structural equation modeling showed a significant positive relationship between poor QCL, attachment anxiety and attachment avoidance.

Table 3.2

Correlation Table between Total Anxiety, Total Avoidance (ECR-RS) and Poor Quality of College Life (CAS)

	Avoidance	Anxiety
AVOIDANCE	1.00	0.55
ANXIETY	0.55	1.00
CAS-Academic Problems	0.21	0.23
CAS-Anxiety	0.26	0.36
CAS-Interpersonal Problems	0.41	0.44
CAS-Depression	0.35	0.44
CAS-Career Problems	0.24	0.23
CAS-Suicidal Ideation	0.31	0.45
CAS-Substance Abuse	0.18	0.22
CAS-Self-esteem Problems	0.39	0.43
CAS-Family Problems	0.47	0.49
M	2.69	1.96
SD	0.95	1.01

* N = 505; CAS: College Adjustment Scales

The results from structural equation modeling (Appendix H) also indicated that Attachment Anxiety (*Paths' M* = .30) was a better predictor of Poor QCL than Attachment Avoidance (*Paths' M* = .16) when the Attachment Anxiety and Attachment Avoidance factors were allowed to correlate. The models were studied within each type of relationship separately. Attachment Anxiety with romantic partner had the largest effect on QCL (*Path* = .43) followed by Attachment Anxiety with best friend (*Path* = .39), mother (*Path* = .27) and father (*Path* = .14). In general, the students' attachment style with their fathers was not a good predictor of poor QCL. Thus, results about the students' attachment with their father are not included in in the results presented from this point on.

3.5 Attachment Style and Emotion Regulation

Avoidant Attachment and Anxious Attachment factors were correlated and used to predict Emotion Regulation for each type of relationship separately (Appendix I). The results suggested the paths from Attachment Anxiety to Emotion Regulation Difficulties (*Paths' M* = .36) were stronger than the paths from Attachment Avoidance to Emotion Regulation Difficulties (*Paths' M* = .16). The path from Romantic Partner Anxiety to Emotion Regulation Difficulties (*Path* = .40) was the strongest predictor of Emotion Regulation Difficulties when compared to the same path for other type of relationships. It was followed by the same paths for the best friend (*Path* = .36), and mother (*Path* = .20) models respectively.

3.6 Psychological Needs as Predictors of Quality of College Life

Results of structural equation modeling showed strong negative paths from Competence (r = -.63), Autonomy (r = -.61), and Relatedness (r = -.47) to Poor QCL (Appendix K). More

information on the relationship between Psychological Needs and QCL can be found under the final models section.

3.7 Final Models

The final models were specified to integrate the results presented up to this point. Each type of attachment relationship was studied separately resulting in three final models: One for the students relationship with their romantic partner, one for their relationship with their best friends and one for their relationship with their mother figure. The paths from attachment style (Anxious/Avoidant Attachment) to Emotion Regulation Difficulties was specified (as the attachment styles factors predicting emotion regulation skills) based on previous research, which indicated that a person's attachment style is formed early in life, and it is the basis of emotion regulation development (Cassidy, 1994; McCarthy et al., 2004, 2006; Thompson, 1994). The path from Psychological Needs Fulfillment to Poor QCL was specified based on Ryan and Deci's (2001) self-determination theory, which postulates that the fulfillment of psychological needs predicts well-being. This was deemed appropriate because, as illustrated earlier in this documents, QCL and well-being are strongly related concepts that overlap at the measurement and conceptual level. Attachment styles (Avoidant and Anxious) were also used to predict the Psychological Needs Fulfillment factor based on previous findings supporting a meaningful relationship between these concepts (La Guardia et al., 2000) and based on the reviewed literature supporting that attachment styles are developed early in life. Emotion Regulation Difficulties was used to predict Psychological Needs Fulfillment based on the assumption that greater emotion regulation skills would make it easier for college students to fulfill their needs for autonomy, competence, and relatedness.

In the final models, Attachment Avoidance and Attachment Anxiety were entered as two related exogenous factors used to predict Psychological Needs Fulfillment, Emotion Regulation Difficulties and Poor QCL; Anxious Attachment was found to affect Psychological Needs Fulfillment through Emotion Regulation Difficulties even though it was not a direct predictor of Psychological Needs Fulfillment; The Psychological Needs Fulfillment factor mediated the path from Avoidant Attachment to Poor QCL; The Emotion Regulation Difficulties factor was specified to mediate the relationships between Anxious Attachment and Poor QCL.

It is worth noting that Emotion Regulation Difficulties mediated the path from Attachment Anxiety to Poor QCL and from Attachment Avoidance to Poor QCL when separate avoidant and anxious attachment models were tested. However, Emotion Regulation Difficulties was chosen to mediate the path from Attachment Anxiety to Poor QCL in the final model because Attachment Anxiety was a better predictor of Emotion Regulation Difficulties (and poor QCL) when Attachment Avoidance and Attachment Anxiety were allowed to correlate and a correlation table between emotion regulation and attachment anxiety composites also showed stronger correlations than a correlation table between the emoting regulation and the attachment avoidance composites. In general, the final models indicated supported that the Emotion Regulation Difficulties factor was the best predictor of Poor QCL.

Models representing data for each attachment relationship were assigned labels to facilitate their comparison. For instance, the model representing the students' attachment with their romantic partner was labeled Model A (Figure 3.5) while the models for their attachment relationship with their best friend and mother were labeled Model B (Figure 3.6) and Model C (Figure 3.7) respectively. Several differences were found between these models. For instance, Anxious and Avoidant Attachment were less related to each other in Model A than in Models B

and C; Anxious Attachment in Model A accounted for more variance in the students' Emotion Regulation Difficulties compared to the same path on Models B and C. Moreover, QCL was directly affected by Emotion Regulation Difficulties, Attachment Anxiety, Psychological Needs Fulfillment and Avoidant Attachment in Model A.

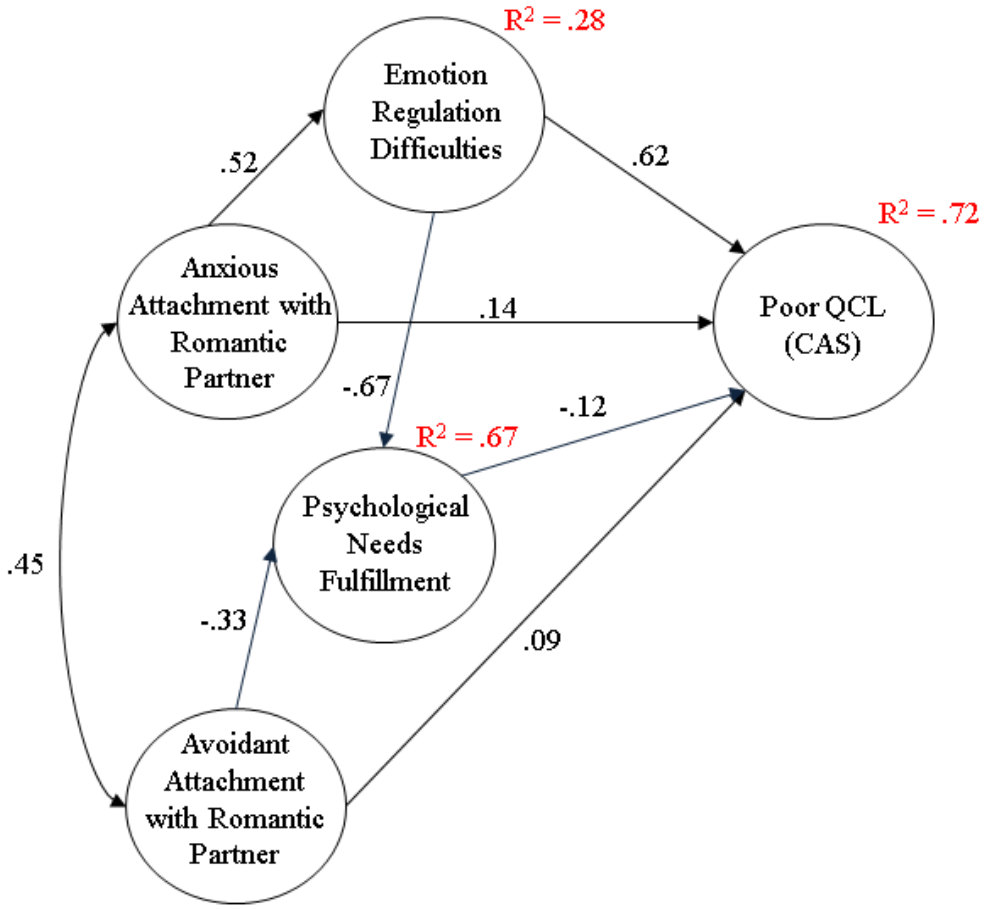

Figure 3.5. Attachment Relationship with Romantic Partner and its relationship to several measures of psychological functioning (Model A; *N* = 505, *SRMSR* = 0.07, *GFI* = .96, *NFI* = .95).

Model B differed from Models A and C in several respects. Within Model B, Anxious and Avoidant Attachment were less related to each other compared to the same paths in Model C; the path from Attachment Anxiety to Poor QCL was also weaker in Model B than in Models

A and C; Poor QCL was only directly affected by Emotion Regulation Difficulties and Psychological Needs Fulfillment in Model B.

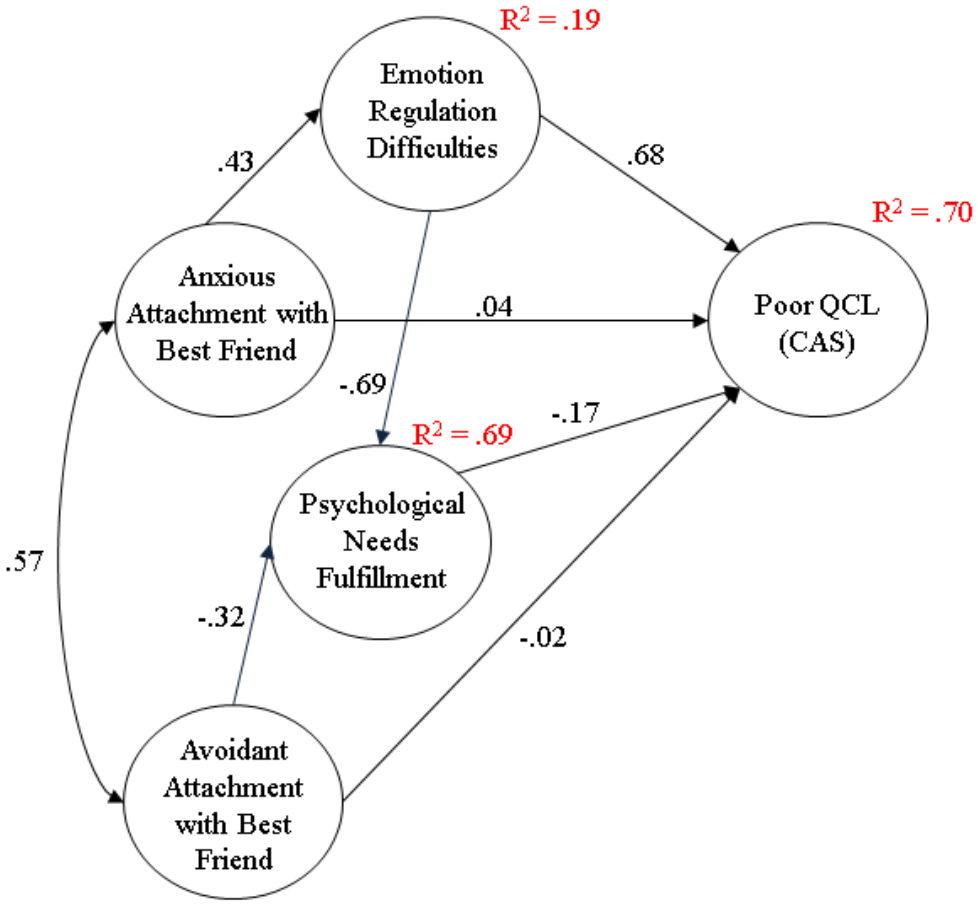

Figure 3.6. Attachment Relationship with Best Friend and its relationship to several measures of psychological functioning (Model B; *N* = 505, *SRMSR* = 0.06, *GFI* = .97, *NFI* = .96).

Model C differed from Models A and B in that Anxious and Avoidant attachment were more strongly related to each other in Model C than in Models A and B and. Poor QCL was directly affected by Emotion Regulation Difficulties, Attachment Anxiety, and Psychological Needs Fulfillment in Model C.

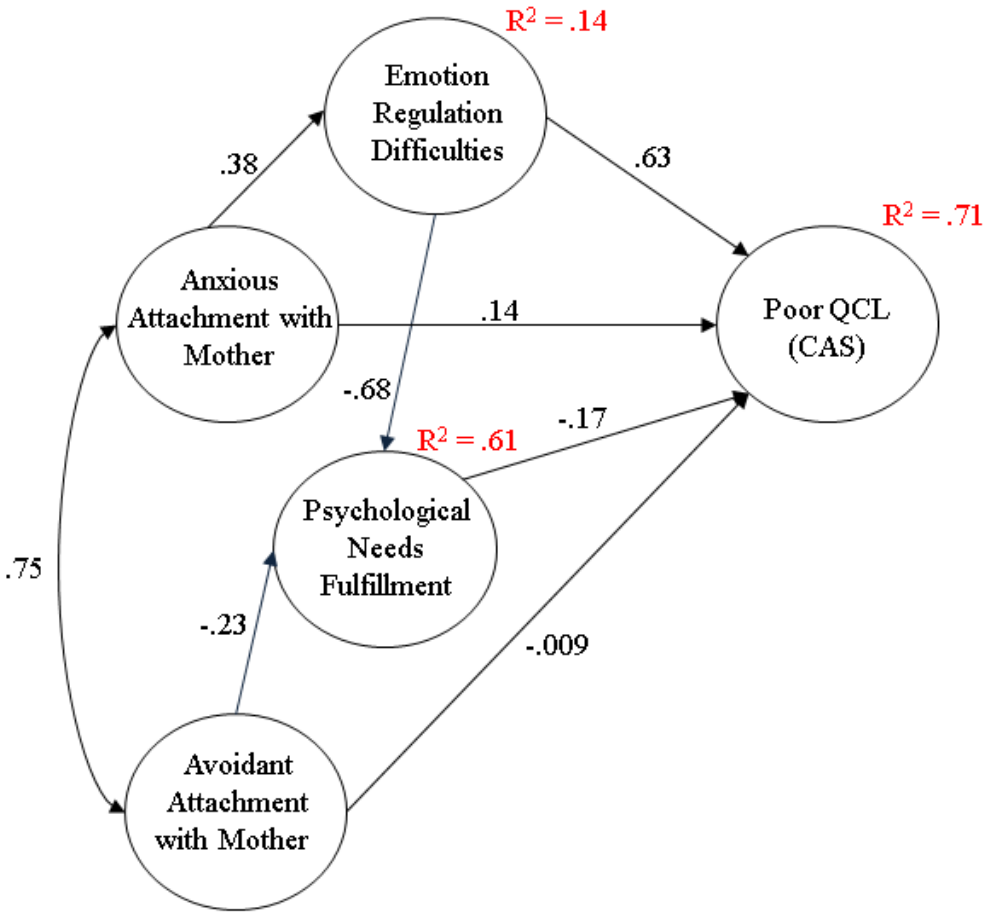

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Figure 3.7. Attachment Relationship with Mother and its relationship to several measures of psychological functioning (Model C; *N* = 505, *SRMSR* = 0.06, *GFI* = .97, *NFI* = 96).

CHAPTER 4

DISCUSSION

One of the main goals of this study was to integrate and provide additional support for research findings provided by several researchers (See Section 1.6). The study's objectives were to mathematically model important dimensions of the quality of college life construct (QCL) and to study the associations of attachment style, emotion regulation skills and the fulfillment of psychological needs with college specific quality of life. The overarching goal was to attempt to integrate measures of these psychological processes in a comprehensive structural equation model to help better account for the psychosocial functioning and well-being (QCL) of college students.

The first part of the study focused on validating the College Adjustment Scales (CAS) as a measure of quality of college life (QCL). This was accomplished by identifying the overlap between the psychological domains measured by the CAS and the QCL domains proposed by researchers (Benjamin, 1994; Disch et al., 1997) and by providing evidence for the CAS's convergent validity with the WHOQOL, Subjective Well-Being and Ryff's Psychological Well-Being Scales. The results suggest that the CAS tapped into college specific areas not measured by the other scales and that the latent factor correlations between the CAS and these measures were very strong. In addition, factors representing the CAS and WHOQOL were loaded into a second order factor. The WHOQOL factor had a stronger loading into the second order factor than the CAS's factor. This finding was expected given that a general quality of life measure (WHOQOL) should be more related to a general quality of life factor than a college specific measure.

The second part of the study focused on understanding how factors representing

attachment style, emotion regulation skills, the fulfillment of psychological needs and college specific quality of life relate to each other. The findings indicate that having an insecure attachment style[1] was not related with having academic difficulties or career problems, which agrees with results published by Gore et al. (2010) who failed to find a relationship between the attachment style and grade point average of undergraduate students. Findings from the current study also suggest that having an insecure attachment style was related with increased interpersonal difficulties, the presence of suicidal ideation, self-esteem difficulties and problems relating with family members. This is supported by previous results stating that securely attached students have higher levels of well-being and lower levels of serious interpersonal difficulties (Garriott, 2010; Haggerty et al., 2010; Bartholomew, 1990; Bartholomew & Horowitz, 1991). In line with previous literature, the current study found that students with an anxious attachments style reported more interpersonal and intrapersonal difficulties compared to students with an avoidant attachment style. These latter results are congruent with previous findings. For instance, researchers have found that Adolescents with attachment styles that involve fear/anxiety are more likely to have suicidal ideations than securely attached and avoidant adolescents (Lessard et al., 1998), individuals classified as avoidant attachment types report less psychological distress (Collins, 1996; Mallinckrodt et al., 2005), and avoidant individuals are more likely to isolate themselves from others when feeling threaten interpersonally (Wei et al., 2005). In general, researchers agree that undergraduate students with an anxious or avoidant attachment style are not less likely to succeed at attaining their academic goals than securely attached students;

[1] Anxious attachment and avoidant attachment have been discussed as discrete attachment styles in this document because they are linked to distinct interpersonal patterns of behavior (Ainsworth, 1979). Nonetheless, anxious attachment and avoidant attachment are both representations of insecure attachment, and people who are securely attached tend to score low on both anxious and avoidant attachment (Fraley et al., 2011). Thus, it is reasonable to view attachment styles as being located in a continuum ranging from secure attachment to insecure attachment. With that in mind, the term insecure attachment is used in this document to refer to findings that apply to individuals with an anxious and individuals with an avoidant attachment style.

however, they tend to be less successful at maintaining healthy relationships with themselves and others.

Having an avoidant or anxious attachment style was also related to increased difficulties in emotion regulation. This finding was predicted by theory on attachment styles, which states that infants learn to modulate their emotions through parental socialization. This socialization involves developing the abilities to maintain a healthy attachment with others (and its formed by having relationships with parental figures that are responsive to the child, not by having overwhelming/intrusive or unresponsive attachment figures) and to use others to aid with emotion regulation (e.g. as distractions, as points of reference; Cassidy, 1994; McCarthy et al., 2004, 2006; Thompson, 1994). Nevertheless, attachment anxiety had a larger negative effect on emotion regulation skills compared to attachment avoidance for all measured relationships, which provides support for the hypothesis stating that people develop an avoidant attachment style as a defensive mechanism to cope with attachment anxiety and other negative emotional experiences. For instance, data and theory suggest that an avoidant attachment style helps some individuals deal with stress and protect their own image through the use of avoidance, denial and suppression, which appear to be the defense mechanisms most commonly used by individuals with a predominantly avoidant attachment style (or whose avoidant attachment style is activated; Collins, 1996). These (denial/suppression) are two emotion regulation strategies likely to precede the emotion regulation skills measured in this study (e.g., awareness and clarity of emotional experience, emotion regulation strategies) making students with a predominantly avoidant attachment style appear more competent at regulating their emotions than they truly are. This deficiency in emotional awareness might also explain why students with an avoidant attachment style are likely to have lower levels of anxiety and depression than students with an anxious

style. Other studies have also found that people with an avoidant attachment style tend to report less distress (Collins, 1996; Mallinckrodt et al., 2005). Moreover, attachment avoidance and psychological distress do not appear to be related to each other when attachments anxiety is controlled for (Lopez et al., 2001, 2002). On the other hand, studies that use multiple indicators of distress and a structural equation modeling approach tend to agree with the current study's findings and conclude that attachment avoidance predicts distress even after controlling for attachment anxiety (Wei et al., 2003).

The current findings highlight that college students experience a significant change in main attachment relationships. The students' attachment style with their romantic partner and their best friend were found to be more central to their QCL level than their attachment relationships with their parents. The fulfillment of psychological needs and the emotion regulation skills of college students were also decreased by more strongly by having an insecure attachment with their romantic partners, best friends, mothers and fathers respectively. It is likely that a healthy change of main attachment relationships signals healthy psychological development as it may indicate that college students are more individuated from their parents compared to younger individuals. Moreover, previous studies indicate that college adjustment is increased by positive separation feelings (conflictual independence or low levels of relationship conflict, anger, gilt, and mistrust) from parents more than by functional, emotional, and attitudinal independence from parents (Beyers & Goossens, 2003; Lopez, 1992; Rice et al., Rice 1990). That is not to say that early attachment with parental figures lacks importance. On the contrary, a longitudinal study of attachment supports that early maternal attachment predicts attachment with peers and romantic partners at age 22 (Zayas et al., 2011).

The final models integrated the results of this study, previous attachment theory and the findings of several researchers (Benjamin, 1994; Disch et al., 1997; La Guardia et al., 2000; McCarthy et al., 2004, 2006; Ryan & Deci, 2001; Tugade & Fredrickson, 2007). It portrayed how several psychosocial variables influenced the students' level of QCL. The findings were manifold. They suggested that having an anxious attachment style was associated with having an avoidant attachment style and that having an insecure attachment style decreased QCL. In addition, emotion regulation predicted QCL and served as mediator between anxious attachment and QCL. The fulfillment of psychological needs predicted QCL and mediated the relationship between anxious attachment and QCL. Overall, Emotion regulation had the greatest direct effect on QCL. Attachment style, the fulfillment of psychological needs and emotion regulation also accounted for most of the variance in QCL. It is not worthy that these results indicate that having an anxious attachment style greatly decreased the student's emotion regulations skills, while having an avoidant attachment style greatly decreased their ability to fulfill their basic psychological needs.

The current study agrees with previous findings indicating that students with an insecure attachment style have more difficulty fulfilling their basic psychological needs (Wei et al., 2005) and lower levels of college adjustment and well-being compared to students with a secure attachment style (Lapsley et al., 2002; Lopez et al., 2002). This study also agrees with previous literature in terms of the magnitude of the relationship between attachment avoidance and attachment anxiety, which has been found to be strongly within most studies (Millings & Walsh, 2009; Mohr & Fassinger, 2003; Raque-Bogdan et al., 2011). Except for two studies that found attachment anxiety and attachment avoidance to be weakly related in a sample of divorced parents (r = .23; Robertson et al., 2010) and moderately related in a sample of undergraduate

students (r = .32; Mallinckrodt et al., 2005). A study with a small sample (N = 36) of Caucasian upper-middle-class to upper-class educated adults may help shed more light into the relationship between attachment anxiety and attachment avoidance and the possible factors that affect the strength of their relationship. The small study distinguished between attachment avoidance and anxiety across several relationships. In congruence with most studies, the findings supported that there is a strong relationship between these constructs when attachment anxiety and avoidance were analyzed within each type of relationship. For example, attachment avoidance and attachment anxiety were strongly related when the participant's relationship with their mother (r = .48) were analyzed. The same was true for attachment anxiety and avoidance with father (r = .67), friend (r = .53), and partner (r = .59). However, the relationship between general anxiety and general avoidance (r = .31) was lower in magnitude than the mentioned above relationships. This could be due to most of the correlations between attachment anxiety and avoidance across relationships being weak in magnitude, which suggests that people may be insecurely attached to some figures in their lives and securely attached to others (Zayas et al., 2011). Additionally, Zayas et al. (2011) found a strong relationship between partner attachment anxiety and attachment avoidance with others; however, this finding was not supported by the current study. It is possible that Zayas et al. (2011) found a spurious relationship given that they used five modified questions from the ECR to measure the participants' attachment style and the ECR was been shown to only measures romantic attachment (Fraley et al., 2011). Studies using the unmodified ECR also tend to report lower correlations between attachment anxiety and attachment avoidance than studies using the revised ECR or other attachment measures. Overall, the magnitude of the correlation between attachment anxiety and attachment avoidance was large and varied depending on the type of relationship studied. The data also suggests that the strength

of this correlation increased as the relationship became more stable. For instance, this association was stronger for the student's attachment with their mothers, best friends and romantic partners respectively. This relationship was even stronger for long-term romantic partners (Millings & Walsh, 2009). The strong correlation between the two attachment factors also suggests a dynamic interplay between avoidant and anxious attachment styles. Thus, a disturbance in attachment could at times be manifested as anxious attachment and, other times, as avoidant attachment. Moreover, the correlation patterns of attachment insecurity (avoidance/anxiety) within and between relationships have implications for the mathematical representation of these constructs. While anxious and avoidant attachment can be combined in one score or one factor when analyzing data for one type of relationship, they may not be combined in one score or factor when analyzing data across relationships and still fit the data.

Strong theoretical models and several studies suggest that attachment anxiety and attachment avoidance have different correlates (Bartholomew, 1990; Bartholomew & Horowitz, 1991). One study found that anxious attachment is related to increased left amygdala responses to angry faces indicating that an anxious attachment is related to increased sensitivity to social punishment. In contrast, avoidant attachment was found to be related to lower activation of the striatum and ventral tegmental area when participants were exposed to positive social interactions (e.g. smiling face) "indicating relative impassiveness to social reward" (Vrticka et al., 2008). A study conducted by Wei et al. (2005) also found differential effects of attachment anxiety and avoidance on negative mood and interpersonal difficulties. Wei and his colleagues (2005) measured two maladaptive strategies of emotion regulation: emotional reactivity and emotional cutoff. Emotional reactivity looked at emotion flooding, liability and hypersensitivity to the environment. Emotional cutoff looked at isolation from others and isolation of emotions

when feeling threaten by interpersonal intimacy. They found that emotional reactivity mediated the path from attachment to negative mood as well as the path from attachment to interpersonal difficulties for individuals with an anxious attachment style while emotional cutoff mediated these paths for individuals with an avoidant attachment style (Wei et al., 2005). Other studies have also supported the importance of attachment in the development of emotion regulation skills as well as highlighted the importance of emotion regulation as an important mediator between attachment and stress in college students (McCarthy et al., 2004, Thompson, 1994). It has also been reported that high levels of emotion regulation skills predict positive well-being outcomes and more satisfying relationships with others (Gross, 2002, Gross & John, 2003, Lopez et al., 2005, Tugade & Fredrickson, 2007).

Finally, the current study found that the fulfillment of psychological needs predicted QCL, which provides support for Ryan and Deci's (2001) self-determination theory[2]. The fulfillment of needs was also an important mediator between avoidant attachment and QCL as well as emotion regulation and QCL. Furthermore, emotion regulation was the main predictor of QCL when attachment style, emotion regulation and psychological needs were used as predictors of QCL.

The Discussion section provides evidence that the current study's findings are in agreement with previous research and theory; however, there are unique aspects within the final models that need further validation. There is a need for more studies to follow Fraley et al. (2011) lead to use attachment anxiety and attachment avoidance as correlated factors for each type of relationship separately. Further exploration between the relationship between anxious attachment and avoidant attachment is also warranted. Research on this relationship may include

[2] It is important to note that Ryan and Deci's self-determination theory hypothesized that the fulfillment of autonomy, relatedness and competence predicts well-being and not QCL; two concepts (well-being & QCL) that differ in terms of comprehensiveness and focus even though they are strongly related.

the contextual, interpersonal and intrapersonal factors that contribute to the activation of each attachment model (Anxious vs. Avoidant) within individuals. There is also a need for more studies using quality of college life as an outcome indicator. For a better understanding of quality of college life could lead to research based interventions designed to support college students in their personal and academic lives. Additional evidence is also needed to support the fulfillment of psychological needs as a mediator between avoidant attachment and QCL and as a mediator between emotion regulation and QCL.

The current study also had several weaknesses that need to be addressed. One weakness was the use of a convenience sample. Future studies should make an effort to include a more representative and random sample of undergraduate students. It would also be useful to formally test whether the same model is invariant for diverse samples of undergraduate students (e.g., non-traditional students, transfer students, first generation students, low income students, first time in college students, and veterans). Additionally, the longitudinal perspective used with this study's cross-sectional data was based on established theory. Nevertheless, it would be better if the findings could be interpreted within a true prospective longitudinal study focusing on current attachment and the developmental milestones of emotion regulation and basic psychological needs as they related to quality of life or well-being over time. Some studies have also found gender differences in attachment style (Tianyuan et al., 2012). Thus, it would be useful to collect data on a larger sample in order to run separate models for women and men. Future studies may also benefit from exploring the effect of acculturation and ethnic differences on the final models.

Overall, the results of this study suggest that the ability to form secure attachments and regulate emotions are indispensable for college students and an integral part of healthy development. It is recommended for university counseling centers and mental health providers

working with college students to assess the students' attachment style and emotion regulation skills during treatment planning. They should probably also address any difficulties in these areas during treatment. Nonetheless, studies designed to compare the therapy outcomes of undergraduate students undergoing therapy with and without a focus on attachment style and emotion regulation are need to provide support for this claim.

APPENDIX A

DIFFERENCES BETWEEN DATA COLLECTED FOR RYFF'S PSYCHOLOGICAL WELL-BEING SCALES (PWBS) DURING THE FALL 2011 AND SPRING 2012 ACADEMIC SEMESTERS

Two hundred two students completed Ryff's Psychological Well-being Scales during the fall 2011 semester and 301 students completed this questionnaire during the spring 2012 semester. 13 questions out of 42 questions were not administered during the fall 2011 semester due to a clerical error. The omitted questions were added to the questionnaire for the spring 2012 data collection. Two to four variables per scale were recoded and six composites were formed by finding the means of items within each scale (Abott, Ploubidis, Huppert, Kuh, Wadsworth, & Croudace, 2006). Six t-test were conducted, one per composite, to compare data collected at both time points. The Autonomy ($t = 1.01$, $p = .31$), Environmental Mastery ($t = 1.40$, $p = .16$) and Self-acceptance ($t = .94$, $p = .34$) composites for data collected during the fall and spring were not significantly different. The Personal growth ($t = 2.21$, $p = .02$), social relationships ($t = 5.07$, $p < .001$), and purpose in life ($t = 2.7$, $p = .007$) composites were significantly different from each other. The reported differences were likely due to the large sample size. This was supported by the similar strength and equal directionality of the correlations between the personal growth, purpose in life, and social relationships data collected at different time points and all other composites used in this study.

Fall 2011 data: Autonomy ($M = 4.9$, $SD = 1.09$, $MIC = .25$), Environmental Mastery ($M = 4.93$, $SD = 1.15$, $MIC = .40$), Positive Relations ($M = 5.69$, $SD = 1.03$, $MIC = .39$), Self-acceptance ($M = 5.03$, $SD = 1.32$, $MIC = .52$) and Purpose in Life composites ($M = 5.46$, $SD = 1.04$, $MIC = .30$) were formed by the average of 5 items. The Personal Growth ($M = 5.35$, $SD = .98$, $MIC = .24$) composite was formed by the average of 4 items. Spring 2012: Autonomy ($M = 4.81$, $SD = .89$, $MIC = .21$), Environmental Mastery ($M = 4.79$, $SD = 1.03$, $MIC = .31$), Positive Relations ($M = 5.22$, $SD = .97$, $MIC = .28$), Personal Growth ($M = 5.16$, $SD = .95$, $MIC = .25$),

Self-acceptance (M = 4.92, SD = 1.16, MIC = .38), and Purpose in Life composites (M = 5.20, SD = 1.06, MIC = .32) were formed by the average of 7 items.

A decision was made to combine data collected at different time points based on the relationship patterns reported earlier, and the small mean and standard deviation differences between the same composites collected at different time points.

The Personal Growth, Social Relationships and Purpose in Life composites from the spring and fall were compared with the respective overall composites using the t-test function of an online calculator (http://studentsttest.com/). This program compares means based on group means, standard deviations, and standard errors. The results showed no significant difference between data collected in the spring and fall and the overall data.

APPENDIX B

CORRELATION TABLES WITHIN QUESTIONNAIRES

Table B.1

College Adjustment Scales (CAS)

	AP	ANX	IP	DEP	CP	SI	SA	SE	FAM
AP	1								
ANX	0.59	1							
IP	0.46	**0.67**	1						
DEP	0.54	**0.77**	**0.73**	1					
CP	0.44	0.44	0.45	0.5	1				
SI	0.3	0.41	0.47	0.57	0.38	1			
SA	0.32	0.34	0.47	0.39	0.34	0.42	1		
SE	0.54	0.6	0.59	0.66	0.51	0.4	0.25	1	
FAM	0.39	0.54	0.59	0.59	0.42	0.47	0.34	0.51	1
M	22.92	21.23	19.47	18.43	18.55	13.94	15.46	23.66	18.18
SD	6.95	7.51	6.03	5.94	7.37	3.94	5.46	5.22	5.28

N = 505. AP: Academic Problems, ANX: Anxiety, IP: Interpersonal Problems, DEP: Depression, CP: Career problems, SI: Suicidal Ideation, SA: Substance Abuse, SE: Self-esteem Difficulties, FAM: Family problems.

Table B.2

World Health Organization Quality of Life (WHOQOL)

	General QOL	General Health	Health	Psychological	Relationships	Environment
General QOL	1.00					
General Health	0.47	1.00				
Health	0.49	0.49	1.00			
Psychological	0.65	0.56	0.68	1.00		
Relationships	0.43	0.31	0.49	0.57	1.00	
Environment	0.52	0.42	0.60	0.59	0.47	1.00
M	4.22	3.64	75.66	66.34	68.00	71.46
SD	0.76	1.02	14.15	17.87	21.49	15.69

N = 504

Table B.3

Ryff's Psychological Well-Being Scales (PWBS)

	Autonomy	Environment	Growth	Relations	Purpose	Acceptance
Autonomy	1.00					
Environment	0.56	1.00				
Growth	0.39	0.54	1.00			
Relations	0.40	0.63	0.55	1.00		
Purpose	0.37	0.65	0.67	0.62	1.00	
Acceptance	0.51	0.77	0.52	0.64	0.68	1.00
M	4.85	4.85	5.24	5.42	5.31	4.97
SD	0.98	1.09	0.98	1.02	1.06	1.23

N = 503

Table B.4

Difficulties in Emotion Regulation Scale (DERS)

	Non-acceptance	No goal-directed Behavior	Impulse Control	Lack of Emotional Awareness	No Regulation Strategies	No Emotional Clarity
Non-acceptance	1.00					
No goal	0.51	1.00				
Impulse	0.55	0.49	1.00			
No awareness	0.19	0.07	0.20	1.00		
No strategies	0.68	0.64	0.68	0.27	1.00	
No clarity	0.49	0.34	0.40	0.56	0.52	1.00
M	11.93	13.25	10.41	14.81	14.96	10.30
SD	5.54	4.81	4.45	5.00	6.39	3.76

N = 503

Table B.5

Basic Needs Satisfaction Scale

	Autonomy	Competence	Relatedness
Autonomy	1		
Competence	0.61	1	
Relatedness	0.67	0.61	1
M	5.46	5.05	5.63
SD	1.13	1.10	0.93

N = 503

APPENDIX C

CORRELATION TABLES BETWEEN QUESTIONNAIRES

Table C.1

Poor Quality of College Life (CAS) and Subjective Well-Being

	1	2	3	4	5	6	7	8	9	10	11	12
1	1.00											
2	0.59	1.00										
3	0.46	0.67	1.00									
4	0.54	0.77	0.73	1.00								
5	0.44	0.44	0.45	0.50	1.00							
6	0.30	0.41	0.47	0.57	0.38	1.00						
7	0.32	0.34	0.47	0.39	0.34	0.42	1.00					
8	0.54	0.60	0.59	0.66	0.51	0.40	0.25	1.00				
9	0.39	0.54	0.59	0.59	0.42	0.47	0.34	0.51	1.00			
10	-0.28	-0.35	-0.28	-0.44	-0.29	-0.17	-0.07	-0.50	-0.24	1.00		
11	0.48	0.74	0.60	0.69	0.46	0.43	0.39	0.60	0.50	-0.25	1.00	
12	-0.29	-0.35	-0.35	-0.44	-0.26	-0.17	-0.15	-0.53	-0.33	0.44	-0.31	1.00
M	22.92	21.23	19.47	18.43	18.55	13.94	15.46	23.66	18.18	32.62	20.47	5.06
SD	6.95	7.51	6.03	5.94	7.37	3.94	5.46	5.22	5.28	8.17	7.38	1.21
N	505	505	505	505	505	505	505	505	505	505	505	507

* 1:QCL-Academic Difficulties, 2: QCL-Anxiety, 3: QCL-Interpersonal Difficulties, 4: QCL-Depression, 5: QCL-Career Difficulties, 6: QCL-Suicidal Ideation, 7: QCL-Substance Abuse, 8: Self-esteem Difficulties, 9: QCL-Family Difficulties, 10: Positive Affect, 11: Negative Affect, 12: Life Satisfaction.

Table C.2

Poor Quality of College Life (CAS) and Psychological Well-Being (PWBS)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1.00														
2	0.59	1.00													
3	0.46	0.67	1.00												
4	0.54	0.77	0.73	1.00											
5	0.44	0.44	0.45	0.50	1.00										
6	0.30	0.41	0.47	0.57	0.38	1.00									
7	0.32	0.34	0.47	0.39	0.34	0.42	1.00								
8	0.54	0.60	0.59	0.66	0.51	0.40	0.25	1.00							
9	0.39	0.54	0.59	0.59	0.42	0.47	0.34	0.51	1.00						
10	-0.30	-0.37	-0.29	-0.32	-0.30	-0.15	-0.10	-0.54	-0.29	1.00					
11	-0.54	-0.51	-0.49	-0.55	-0.42	-0.33	-0.22	-0.71	-0.44	0.56	1.00				
12	-0.32	-0.27	-0.34	-0.35	-0.25	-0.27	-0.17	-0.44	-0.27	0.39	0.54	1.00			
13	-0.44	-0.38	-0.41	-0.46	-0.47	-0.37	-0.24	-0.54	-0.34	0.37	0.65	0.67	1.00		
14	-0.46	-0.48	-0.50	-0.59	-0.44	-0.35	-0.21	-0.74	-0.44	0.51	0.77	0.52	0.68	1.00	
15	-0.31	-0.36	-0.54	-0.46	-0.30	-0.33	-0.25	-0.51	-0.39	0.40	0.63	0.55	0.62	0.64	1.00
M	22.92	21.23	19.47	18.43	18.55	13.94	15.46	23.66	18.18	4.85	4.85	5.24	5.31	4.97	5.42
SD	6.95	7.51	6.03	5.94	7.37	3.94	5.46	5.22	5.28	0.98	1.09	0.98	1.06	1.23	1.02
N	505	505	505	505	505	505	505	505	505	503	503	503	503	503	503

* 1: QCL-Academic Difficulties, 2: QCL-Anxiety, 3: QCL-Interpersonal Difficulties, 4: QCL-Depression, 5: QCL-Career Difficulties, 6: QCL-Suicidal Ideation, 7: QCL-Substance Abuse, 8: Self-esteem Difficulties, 9: QCL-Family Difficulties, 10: PWBS-Autonomy, 11: PWBS-Environment, 12: PWBS-Growth, 13: PWBS-Purpose, 14: PWBS-Acceptance, 15: PWBS-Relations.

Table C.3

Poor Quality of College Life (CAS/QCL) and the WHOQOL

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.00												
2	0.59	1.00											
3	0.46	0.67	1.00										
4	0.54	0.77	0.73	1.00									
5	0.44	0.44	0.45	0.50	1.00								
6	0.30	0.41	0.47	0.57	0.38	1.00							
7	0.32	0.34	0.47	0.39	0.34	0.42	1.00						
8	0.54	0.60	0.59	0.66	0.51	0.40	0.25	1.00					
9	0.39	0.54	0.59	0.59	0.42	0.47	0.34	0.51	1.00				
10	-0.40	-0.51	-0.44	-0.58	-0.35	-0.28	-0.24	-0.55	-0.40	1.00			
11	-0.49	-0.60	-0.52	-0.66	-0.44	-0.34	-0.26	-0.73	-0.44	0.68	1.00		
12	-0.16	-0.33	-0.50	-0.46	-0.21	-0.20	-0.18	-0.45	-0.32	0.49	0.57	1.00	
13	-0.27	-0.36	-0.38	-0.43	-0.22	-0.20	-0.17	-0.50	-0.40	0.60	0.59	0.47	1.00
M	22.92	21.23	19.47	18.43	18.55	13.94	15.46	23.66	18.18	75.66	66.34	68.00	71.46
SD	6.95	7.51	6.03	5.94	7.37	3.94	5.46	5.22	5.28	14.15	17.87	21.49	15.69
N	505	505	505	505	505	505	505	505	505	500	504	504	504

*1: QCL-Academic Difficulties, 2: QCL-Anxiety, 3: QCL-Interpersonal Difficulties, 4: QCL-Depression, 5: QCL-Career Difficulties, 6: QCL-Suicidal Ideation, 7: QCL-Substance Abuse, 8: Self-esteem Difficulties, 9: QCL-Family Difficulties, 10: WHOQOL- Physical Health, 11: WHOQOL –Psychological Health, 12: WHOQOL –Social Relationships, 13: WHOQOL – Environment.

Table C.4

Poor Quality of College Life (CAS) and Difficulty in Emotion Regulation Scale (DERS)

	No Acceptance	No Goal-directed Behavior	No Impulse Control	No Strategy	No-Awareness-Clarity
CAS - Academic Problems	0.38	0.34	0.33	0.40	0.36
CAS - Anxiety	0.53	0.51	0.47	0.62	0.33
CAS - Interpersonal Problems	0.46	0.33	0.44	0.57	0.40
CAS - Depression	0.45	0.42	0.43	0.63	0.47
CAS - Career Problems	0.32	0.28	0.29	0.38	0.34
CAS - Suicidal Ideation	0.30	0.19	0.39	0.42	0.28
CAS - Substance Abuse	0.22	0.21	0.32	0.29	0.13
CAS - Self-esteem Problems	0.50	0.38	0.40	0.61	0.52
CAS - Family Problems	0.34	0.25	0.34	0.47	0.35
Mean	11.93	13.25	10.41	14.96	12.55
Sd	5.54	4.81	4.45	6.39	3.88

**N* = 503. CAS: College Adjustment Inventory.

A correlation matrix between the composites representing poor QCL and Difficulty with Emotion Regulation showed that Academic Difficulties shared moderate positive correlation with Non-Acceptance of emotions, No-Goal directed behavior, Impulse control difficulties, No-Strategy to modulate emotion, and No-Awareness-Clarity of emotional experiences. Anxiety shared a moderate positive relationship with No-Awareness-Clarity, and it shared strong positive correlations with Non-Acceptance, No-Goal, Impulse and No-Strategy. Interpersonal Difficulties shared a moderate positive relationship with No-Goal, and it shared strong positive correlations with Non-Acceptance, Impulse, No-Strategy and No-Awareness-Clarity. Depression shared strong positive relationships with Non-Acceptance, No-Goal, Impulse, No-Strategy and No-Awareness-clarity. Career Problems shared weak positive relationships with No-Goal and Impulse. It also shared moderate positive relationships with Non-Acceptance, No-Awareness-Clarity and No-Strategies. Suicidal Ideation shared a weak correlation with No-Goal and No-Awareness-clarity. It shared moderate positive relations with Non-Acceptance, Impulse, and No-Strategy. Substance Abuse shared weak positive correlations with Non-Acceptance, No-Goal, No-Strategy and No-Awareness-Clarity. It shared a moderate positive relationship with Impulse. Self-esteem Difficulties shared a moderate relationship with No-Goal and strong positive correlations with Non-Acceptance, Impulse, No-Strategy, and No-Awareness-Clarity. Family Problems shared a weak positive correlation with No-Goal, and it shared moderate corrections with Non-Acceptance, Impulse, and No-Awareness-Clarity. It also shared a strong correlation with No Strategy.

Table C.5

Poor Quality of College Life (CAS) and Basic Psychological Needs

	Autonomy	Competence	Relatedness
CAS - Academic Problems	-0.27	-0.51	-0.20
CAS - Anxiety	-0.35	-0.48	-0.31
CAS - Interpersonal Problems	-0.41	-0.50	-0.51
CAS - Depression	-0.44	-0.58	-0.45
CAS - Career Problems	-0.31	-0.48	-0.24
CAS - Suicidal Ideation	-0.28	-0.37	-0.36
CAS - Substance Abuse	-0.15	-0.25	-0.19
CAS - Self-esteem Problems	-0.58	-0.73	-0.52
CAS - Family Problems	-0.37	-0.42	-0.36
M	5.46	5.06	5.64
SD	1.13	1.10	0.93

* $N = 503$. CAS: College Adjustment Inventory.

A correlation matric between the composites representing poor QCL and the fulfillment of basic psychological needs indicated that Academic Problems shared a weak negative correlation with Autonomy and Relatedness and a strong correlation with Competence. Anxiety and Family Problems shared moderate negative relationships with Autonomy and Relatedness and a strong negative correlation with Competence. Interpersonal Problems, Depression and Self-esteem shared strong negative correlations with Autonomy, Competence, and Relatedness. Career Problems shared a weak negative correlation with Relatedness, a moderate negative relationship with Autonomy, and a strong negative relationship with Competence. Suicide Ideation shared a weak negative relationship with Autonomy, and moderate negative relationships with Competence and Relatedness. The Substance Abuse composite shared weak negative correlations with all the basic needs composites.

Table C.6

Poor Quality of College Life (CAS) and Attachment Insecurity (ECR-RS)

	1	2	3	4	5	6	7	8	9
Mom Avoidance	0.18	0.20	0.28	0.32	0.19	0.26	0.10	0.28	0.46
Mom Anxiety	0.18	0.23	0.30	0.35	0.20	0.39	0.19	0.26	0.41
Dad Avoidance	0.14	0.18	0.22	0.15	0.12	0.15	0.10	0.25	0.30
Dad Anxiety	0.09	0.16	0.21	0.20	0.07	0.28	0.12	0.19	0.28
Date Avoidance	0.17	0.20	0.34	0.29	0.15	0.32	0.34	0.26	0.23
Date Anxiety	0.29	0.41	0.51	0.47	0.25	0.35	0.29	0.44	0.42
BF Avoidance	0.09	0.14	0.28	0.20	0.15	0.21	0.09	0.21	0.16
BF Anxiety	0.15	0.28	0.37	0.34	0.21	0.29	0.11	0.38	0.33

* N = 505. Date: Romantic Partner, BF: Best friend, 1: QCL-Academic Difficulties, 2: QCL-Anxiety, 3: QCL-Interpersonal Difficulties, 4: QCL-Depression, 5: QCL-Career Difficulties, 6: QCL-Suicidal Ideation, 7: QCL-Substance Abuse, 8: Self-esteem Difficulties, 9: QCL-Family Difficulties.

Composites representing attachment style and poor QCL were entered into a correlation table (Table C.6). Mother avoidance shared a moderate positive correlation with Depression and a moderate strong positive correlation with Family Difficulties. Mother Anxiety shared a moderate relationship with Interpersonal Difficulties, Depression and Suicidal Ideation. It shared a strong positive relationship with Family Difficulties. Dad Avoidance shared a moderate positive correlation with Family Difficulties. The correlation between Dad Anxiety, Suicidal Ideation and Family Difficulties approached a moderate magnitude. Date Avoidance was moderately related with Interpersonal Difficulties, Depression, Suicidal Ideation, and Substance Abuse. Date Anxiety was moderately and positively related with Academic Difficulties, Suicidal Ideation, and Substance Abuse. Date Anxiety shared strong correlations with Anxiety, Interpersonal Difficulties, Depression, Self-esteem Difficulties, and Family Difficulties. Best Friend Avoidance did not share moderate or strong correlations with the poor QCL composites. Best Friend Anxiety shared medium correlations with Interpersonal Difficulties, Depression,

Self-esteem Difficulties and Family Problems. The correlation table suggests that QCL is more related to Date Anxiety, followed by Date Avoidance and the Mother Attachment composites.

Table C.7

Attachment Insecurity (ECR-RS) and Psychological Needs

	Autonomy	Competence	Relatedness
Mom Avoidance	-0.31	-0.36	-0.34
Mom Anxiety	-0.26	-0.25	-0.30
Dad Avoidance	-0.21	-0.23	-0.25
Dad Anxiety	-0.16	-0.15	-0.22
Date Avoidance	-0.35	-0.32	-0.39
Date Anxiety	-0.37	-0.42	-0.35
BF Avoidance	-0.31	-0.28	-0.45
BF Anxiety	-0.37	-0.35	-0.46

* Date: Romantic Partner, BF: Best friend.

Mother Avoidance shared moderate negative relationships with Autonomy, Competence and Relatedness. Mother anxiety shared weak negative correlations with Autonomy and Competence and a moderate relationship with Relatedness. Father Avoidance and Father Anxiety shared moderate negative relationships with all measured psychological needs. Romantic partner avoidance, or Date Avoidance, shared moderate negative relationships with all needs. Date Anxiety shared moderate negative relationships with Autonomy and Competence and a strong negative relationship with Relatedness. Best Friend Avoidance shared moderate negative relationships with Autonomy and Relatedness and a strong negative relationship with Competence. Best Friend Anxiety shared moderate negative relationships with Autonomy and Competence and a strong negative relationship with Relatedness.

Table C.8

Difficulties in Emotion Regulation Scale (DERS) and Attachment (ECR-RS)

	Non-acceptance	No Goal-directed Behavior	No Impulse Control	No strategies	No Clarity & Awareness
Mom Avoidance	0.16	0.12	0.16	0.27	0.30
Mom Anxiety	0.20	0.14	0.22	0.27	0.23
Dad Avoidance	0.18	0.19	0.13	0.21	0.18
Dad Anxiety	0.20	0.16	0.20	0.22	0.18
Date Avoidance	0.18	0.21	0.19	0.29	0.29
Date Anxiety	0.30	0.31	0.25	0.43	0.32
BF Avoidance	0.15	0.10	0.14	0.20	0.25
BF Anxiety	0.29	0.18	0.19	0.34	0.31

* Date: Romantic Partner, BF: Best friend.

Mother Anxiety and Avoidance, Dad Anxiety and Avoidance, Date Avoidance and Best Friend avoidance were weekly related to all emotion regulation composites. Date anxiety shared a weak positive correlation with Impulse and moderate positive correlations with Non-Acceptance, No-Goals, and No-Awareness-Clarity. Date anxiety also shared a strong positive relation with No-Strategy. Best Friend Anxiety was weakly and positively related to Non-acceptance, No-Goals and Impulse. It was moderately and positively related to lack of Strategies and lack of Awareness-Clarity. Overall, attachment anxiety had a greater effect on emotion regulation than attachment avoidance. Attachment Anxiety with a romantic partner and best friend were more related to emotion regulation difficulties than attachment anxiety with parents.

APPENDIX D

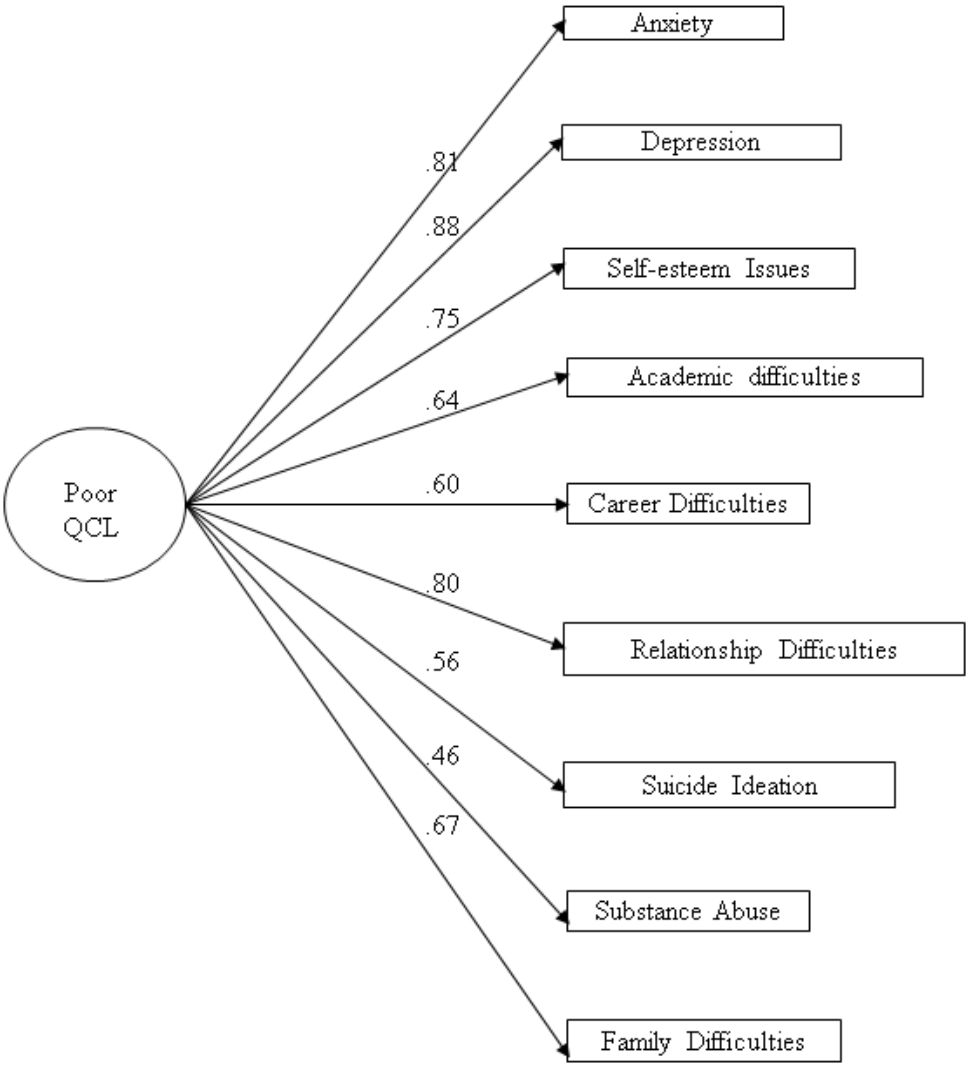
FACTOR LOADINGS FOR THE COLLEGE ADJUSTMENT SCALES

Factor Loadings for the CAS

Academic Problems	0.63
Anxiety	0.83
Interpersonal Problems	0.81
Depression	0.90
Career Problems	0.58
Suicidal Ideation	0.59
Substance Abuse	0.47
Self-esteem Problems	0.74
Family Problems	0.68

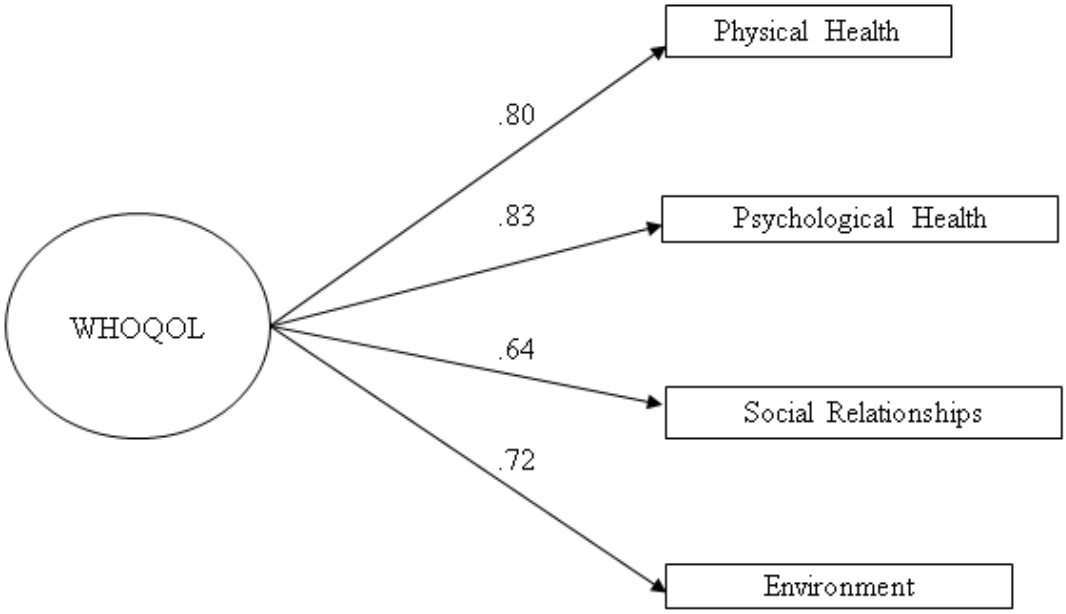
APPENDIX E

STRUCTURAL MODELS



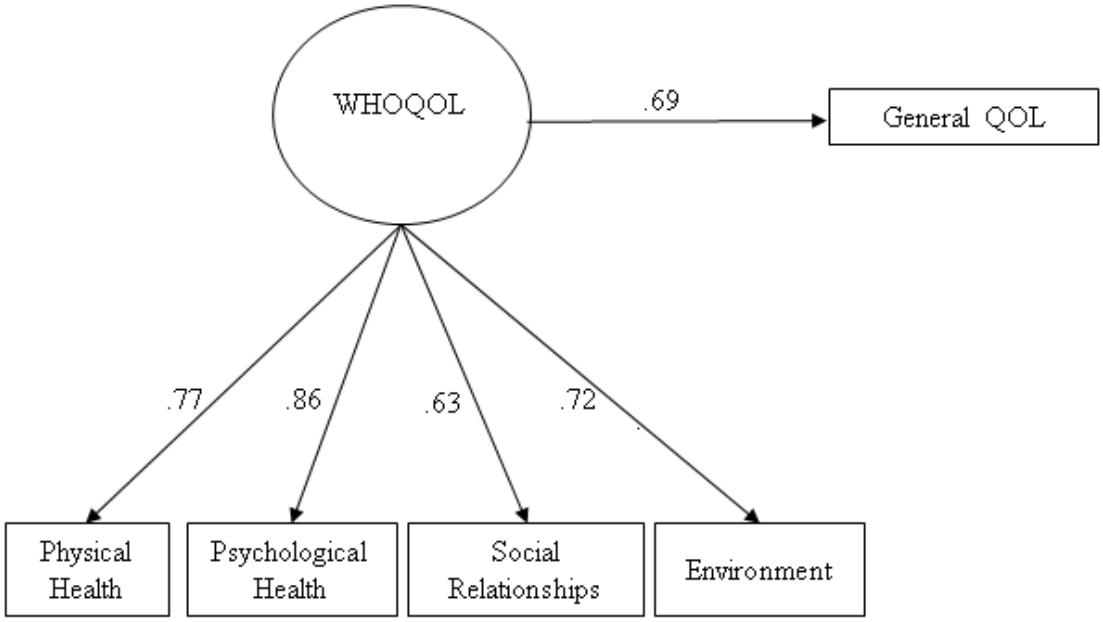
N = 505, *SRMSR* =.04, *GFI* = .99, *NFI* = .99.

Figure E.1. Factorial structure of the College Adjustment Scales (CAS).



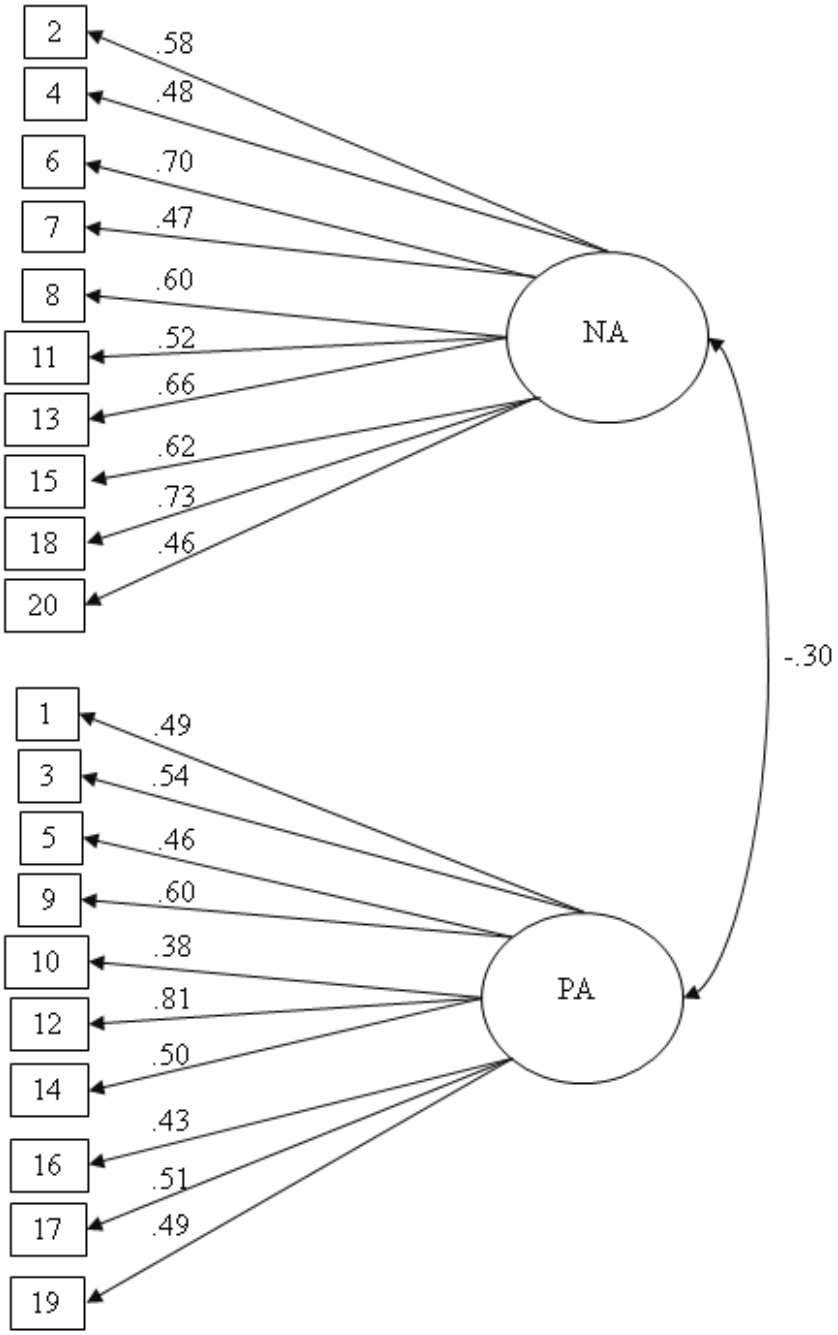
N = 500, *SRMSR* = 0.01, *GFI* = .99, *NFI* = .99.

Figure E.2. Factorial structure of the World Health Organization Quality of Life (WHOQOL-BREF).



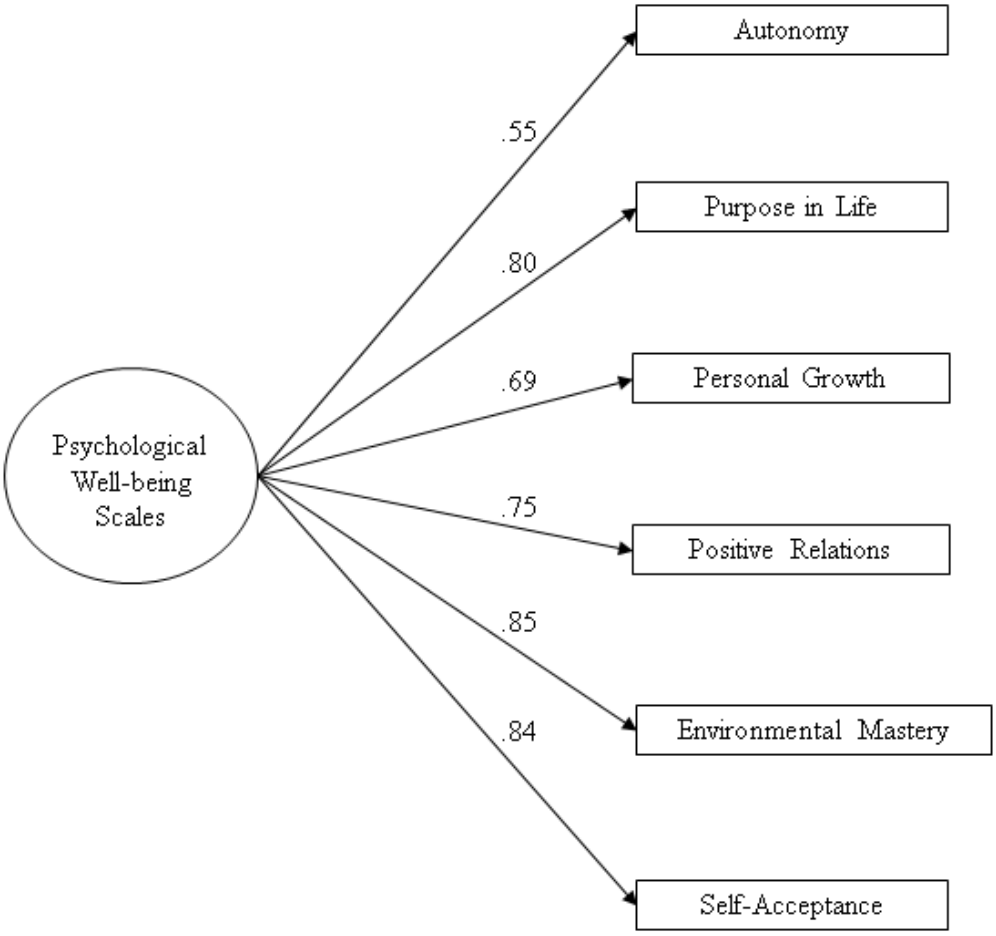
N = 500, *SRMSR* = 0.02, *GFI* = .99, *NFI* = .99.

Figure E.3. Predicting a General QOL Item using the WHOQOL-BREF.



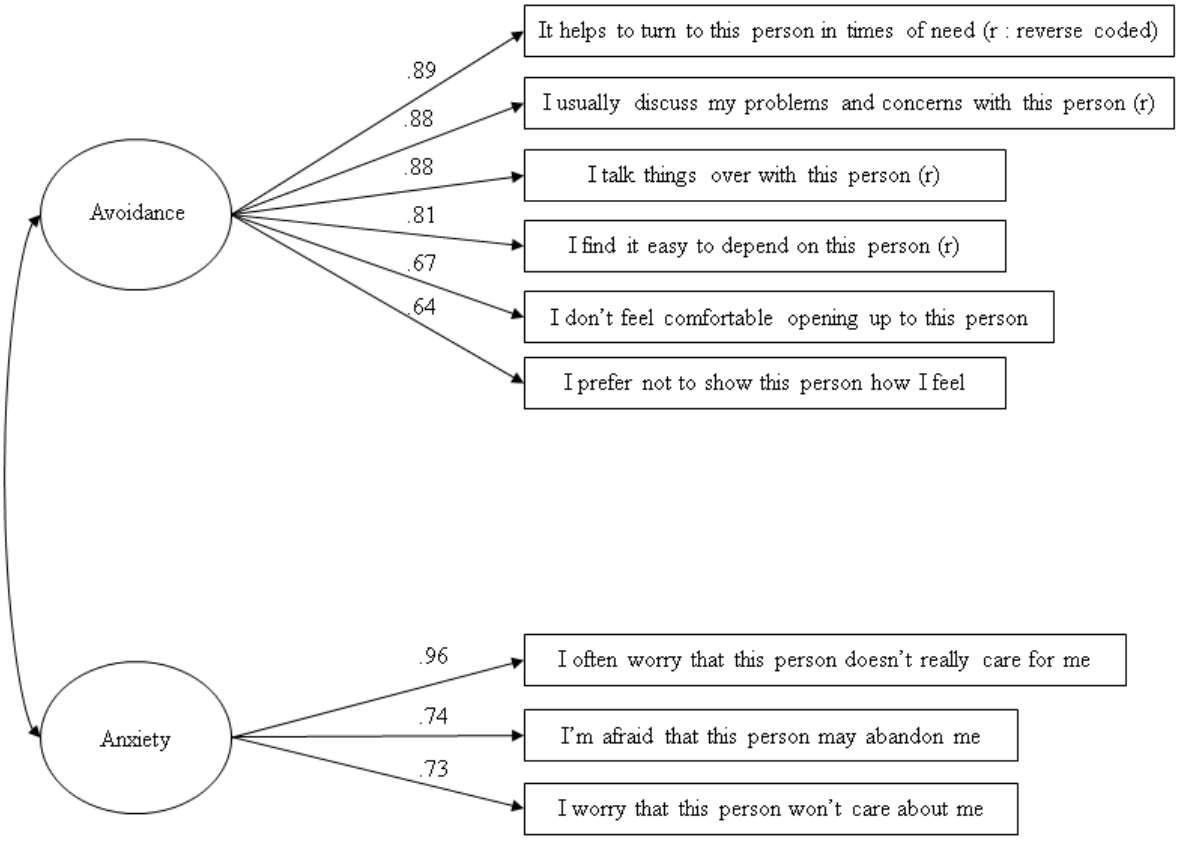
N = 505, *SRMSR* = 0.06, *GFI* = .97, *NFI* = .99.

Figure E.4. Factorial structure of the Positive Affect and Negative Affect Schedule (PANAS).



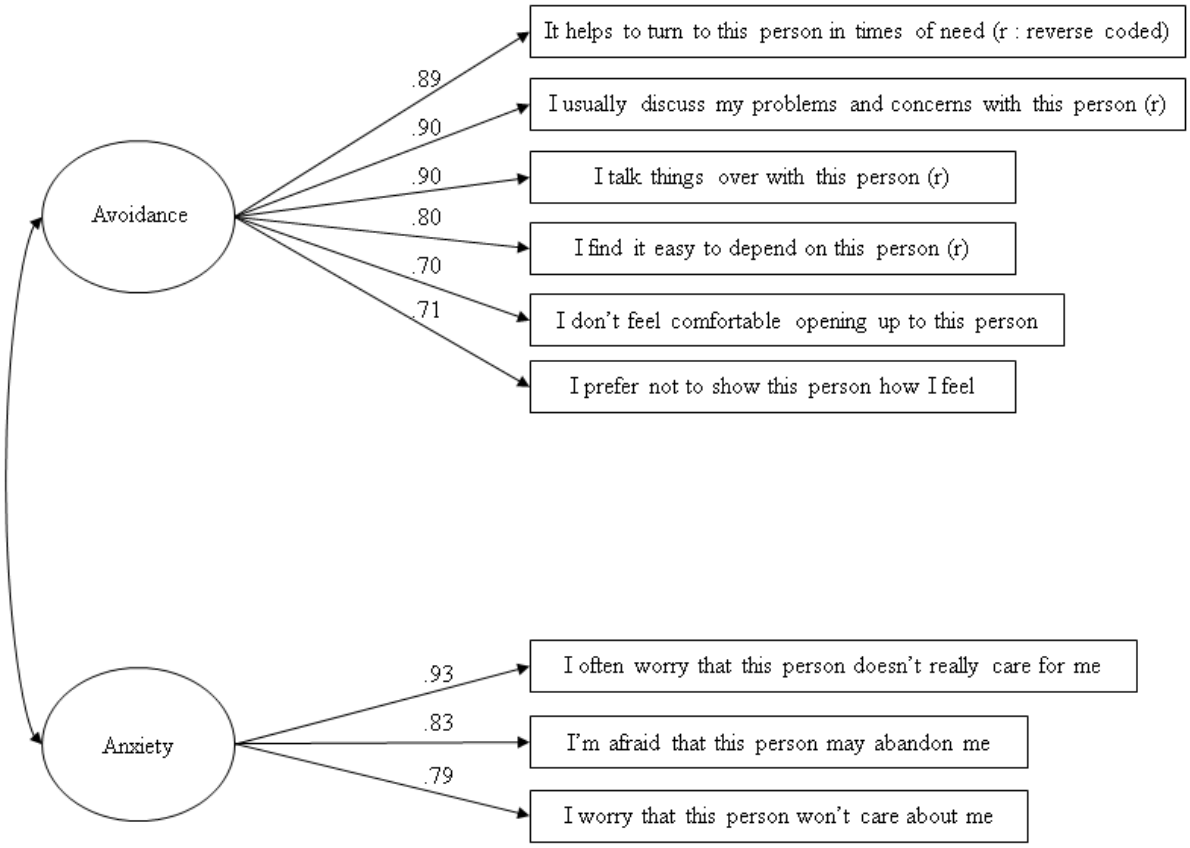
N = 503, *SRMSR* = 0.04, *GFI* = .99, *NFI* = .99.

Figure E.5. Factorial structure of the Ryff's Psychological Well-Being Scales (PWBS).



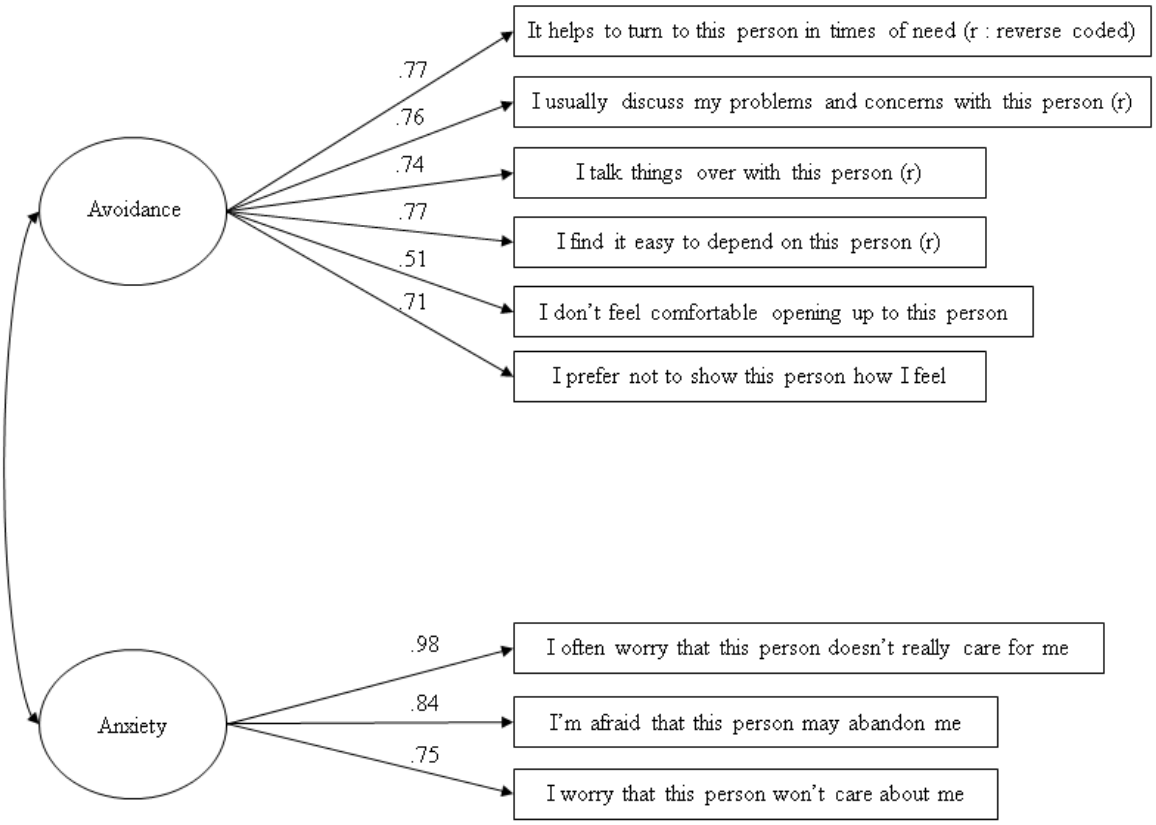
N = 505, *SRMSR* = 0.05, *GFI* = .99, *NFI* = .98.

Figure E.6. Factorial structure of the Experiences in Close Relationships – Relationship Structure (ECR-SR) Questionnaire in the Attachment Relationship with the Mother Figure.



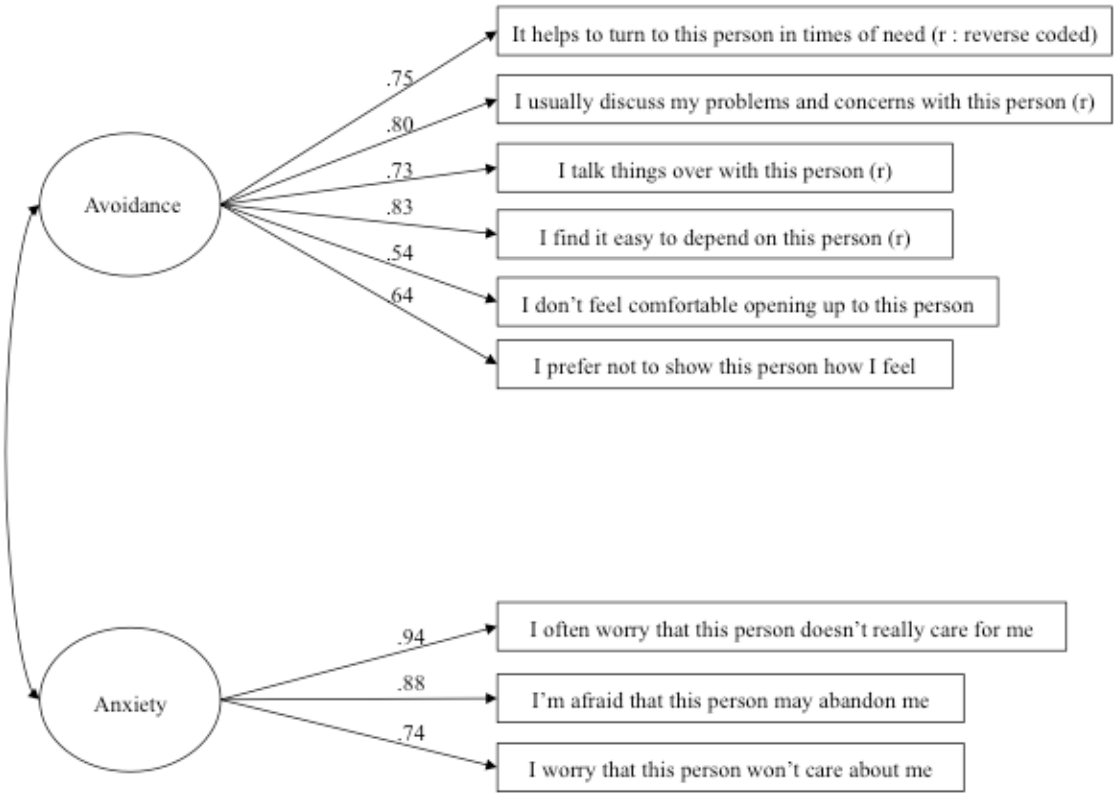
N = 505, *SRMSR* = 0.06, *GFI* = .99, *NFI* = .98.

Figure E.7. Factorial structure of the Experiences in Close Relationships – Relationship Structure (ECR-SR) Questionnaire in the Attachment Relationship with the Father Figure.



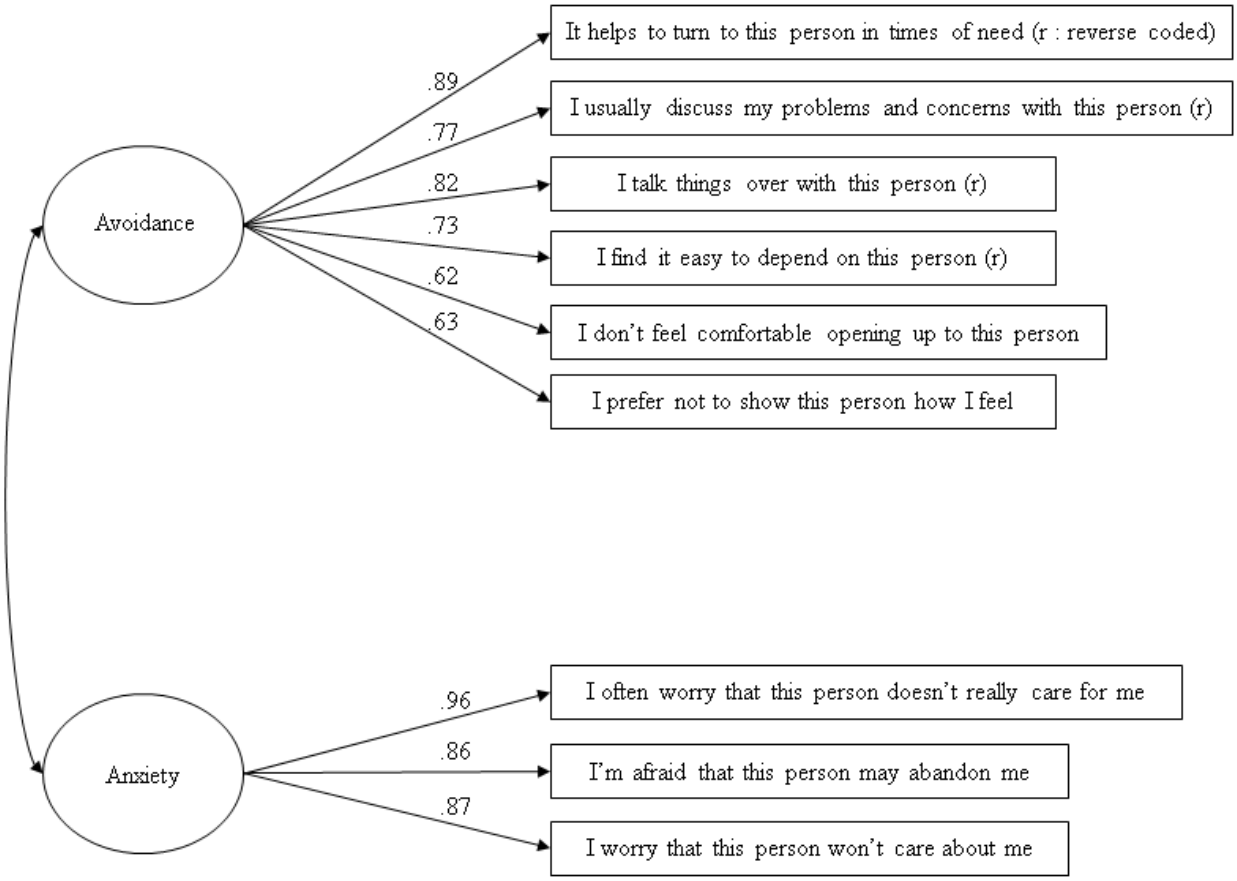
N = 268, *SRMSR* = 0.09, *GFI* = .97, *NFI* = .95

Figure E.8. Factorial structure of the Experiences in Close Relationships – Relationship Structure (ECR-SR) Questionnaire in the Attachment Relationship with Romantic Partner. Listwise.



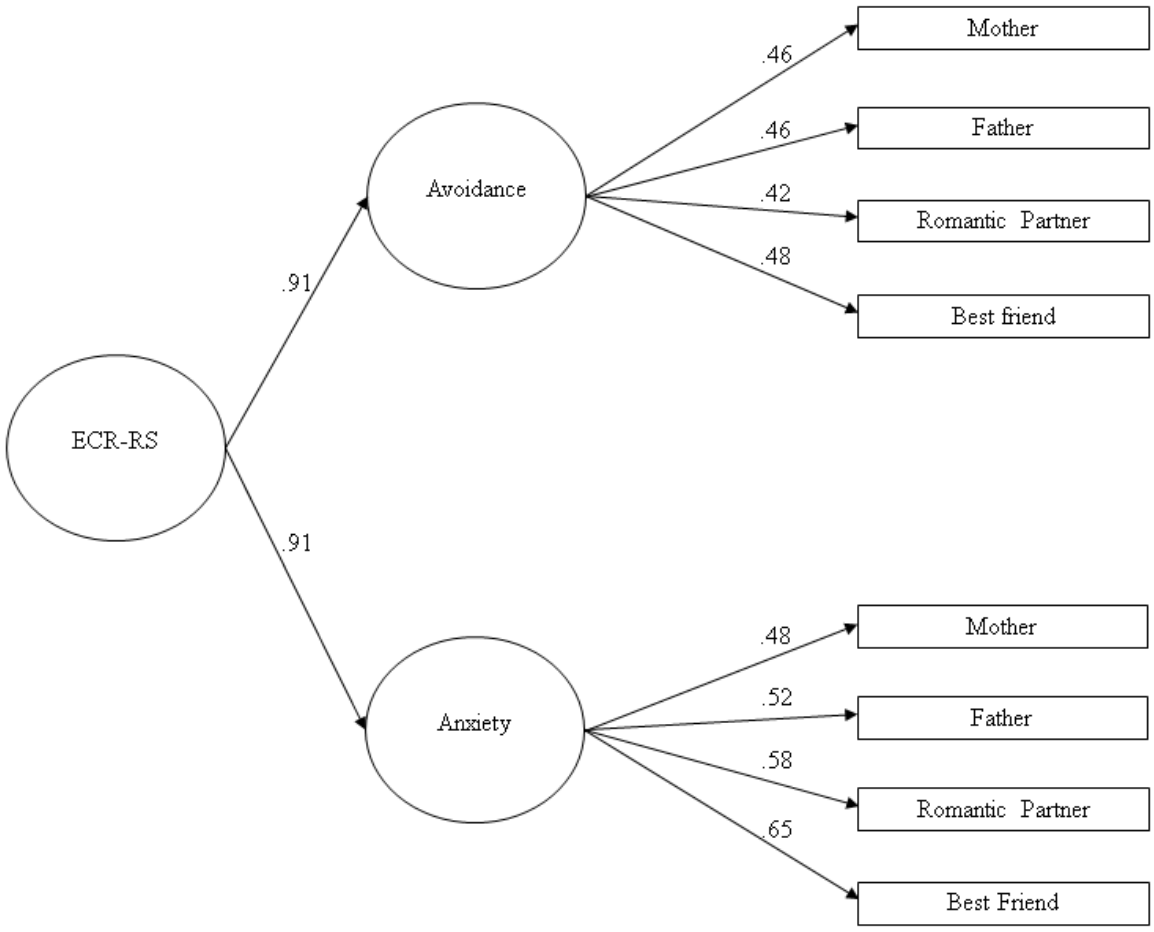
N = 505, *SRMSR* = 0.09, *GFI* = .97, *NFI* = .95.

Figure E.9. Factorial structure of the Experiences in Close Relationships – Relationship Structure (ECR-SR) Questionnaire in the Attachment Relationship with Romantic Partner. imputed.



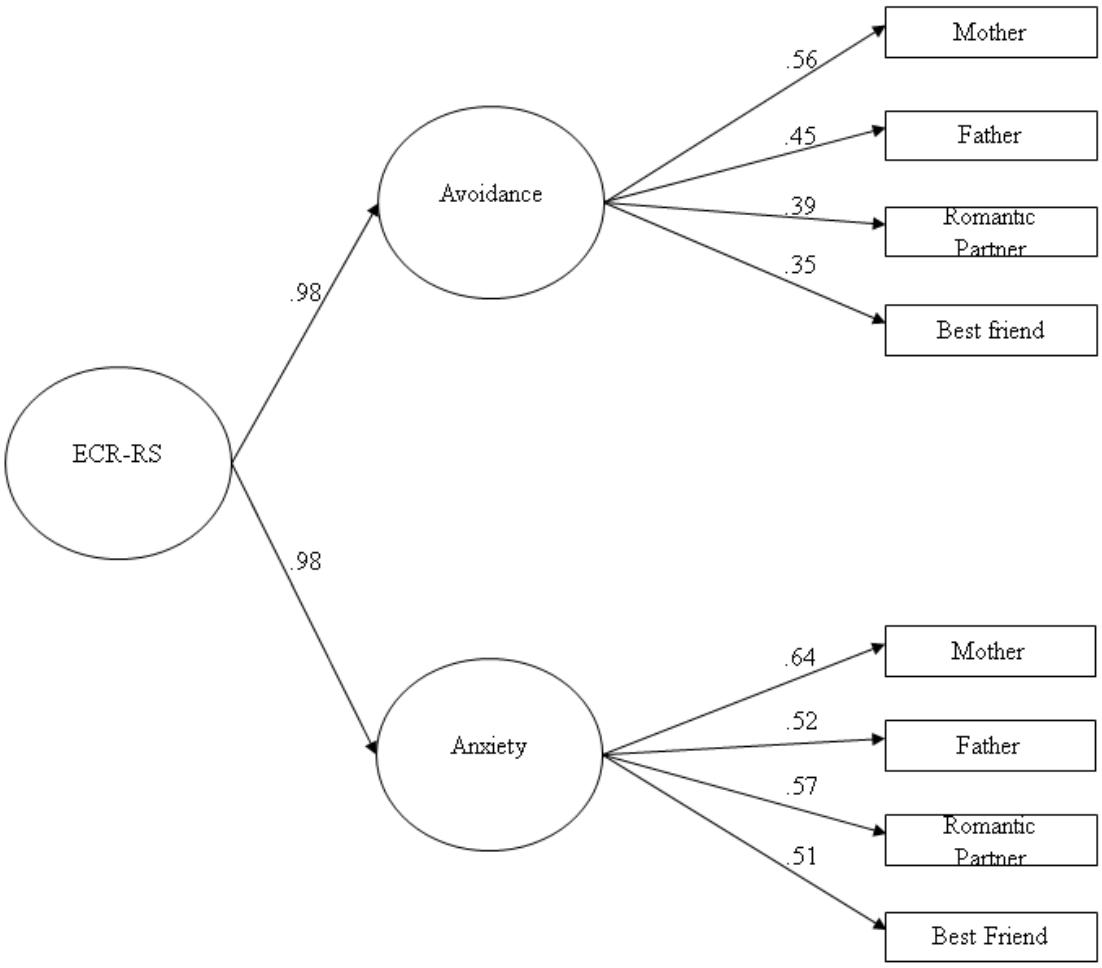
N = 505, *SRMSR* = 0.09, *GFI* = .97, *NFI* = .96.

Figure E.10. Factorial Structure of the Experiences in Close Relationships – Relationship Structure (ECR-SR) Questionnaire in the Attachment Relationship with Best friend.



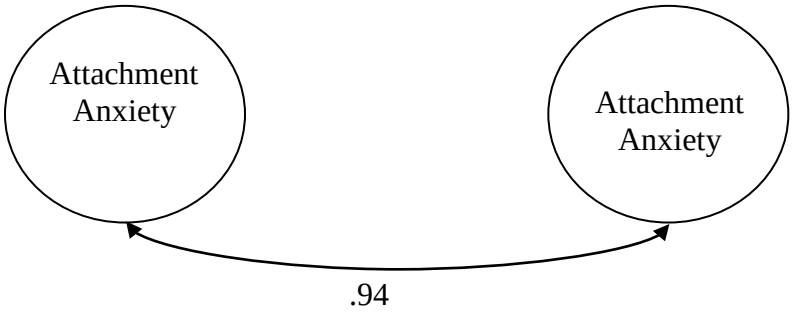
N = 268, *SRMSR* = 0.11, *GFI* = .92, *NFI* = .78.

Figure E.11. Factorial structure of the Experiences in Close Relationships – Relationship Structure (ECR-SR) Questionnaire in the Attachment Relationship with All Measured Relationships. Listwise.



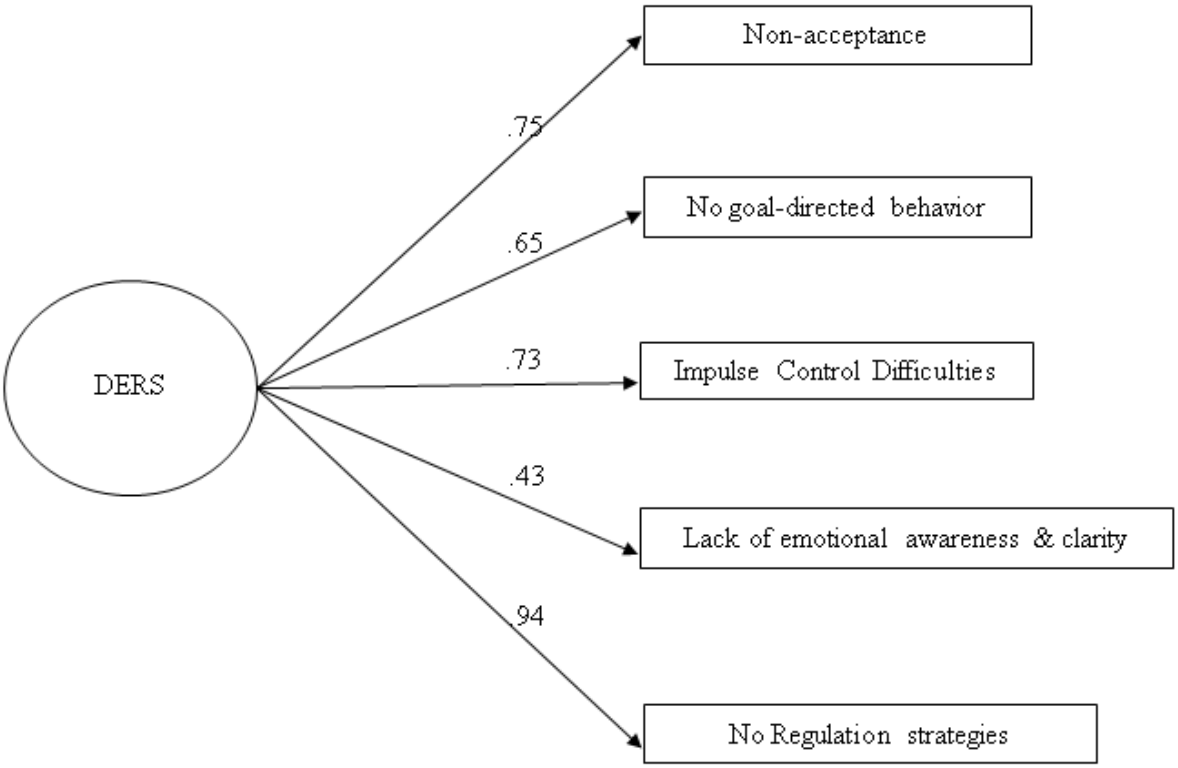
N = 505, *SRMSR* = 0.11, *GFI* = .93, *NFI* = .78

Figure E.12. Factorial structure of the Experiences in Close Relationships – Relationship Structure (ECR-SR) Questionnaire in the Attachment Relationship with All Measured Relationships. Imputed.



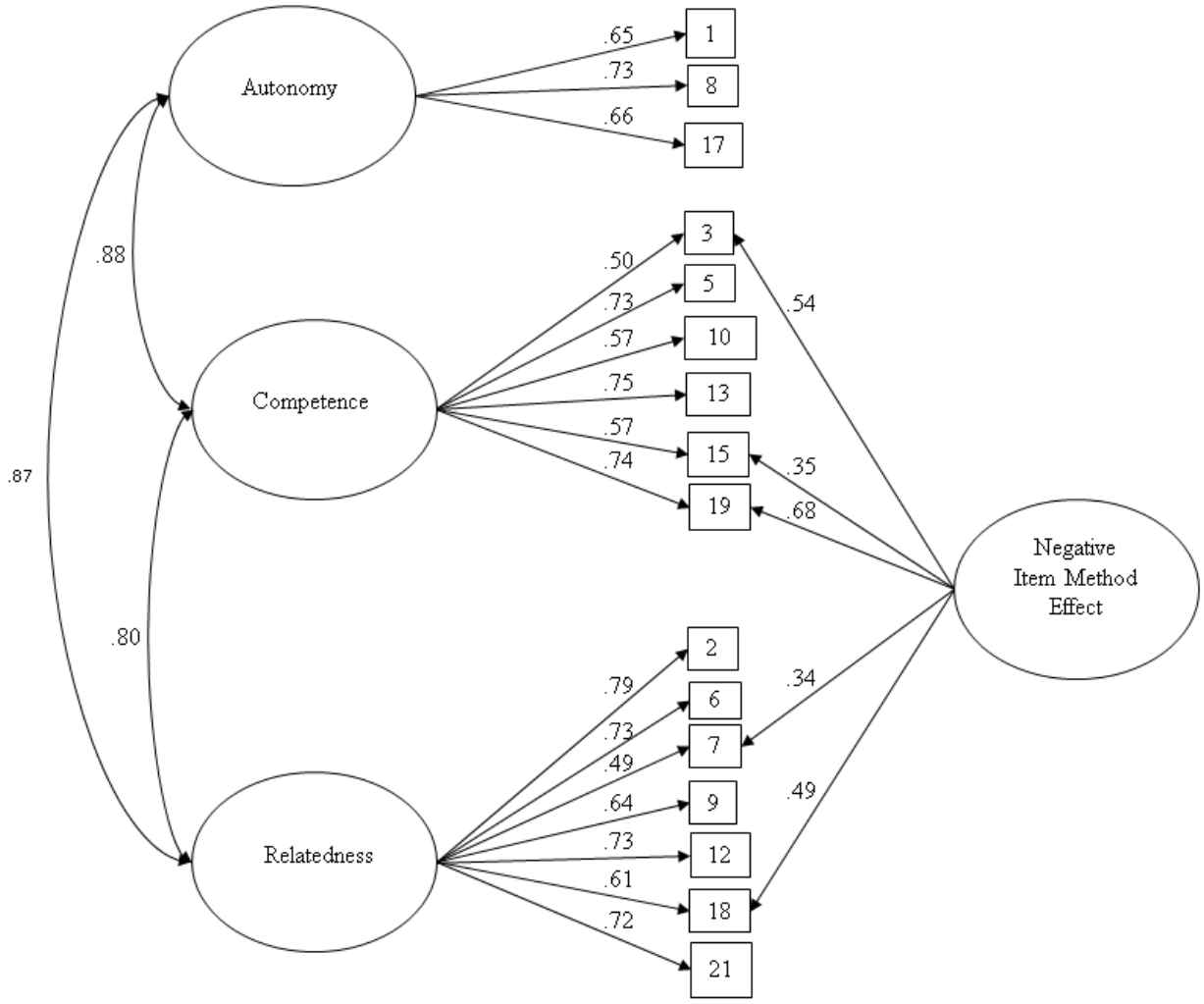
N = 505, *SRMSR* = 0.11, *GFI* = .93, *NFI* = .80.

Figure E.13. Factorial correlation between Attachment Avoidance and Attachment Anxiety. Imputed.



N = 503, *SRMSR* = 0.02, *GFI* = .99, *NFI* = .99.

Figure E.14. Factorial structure of the Difficulties in Emotion Regulation Scale (DERS).

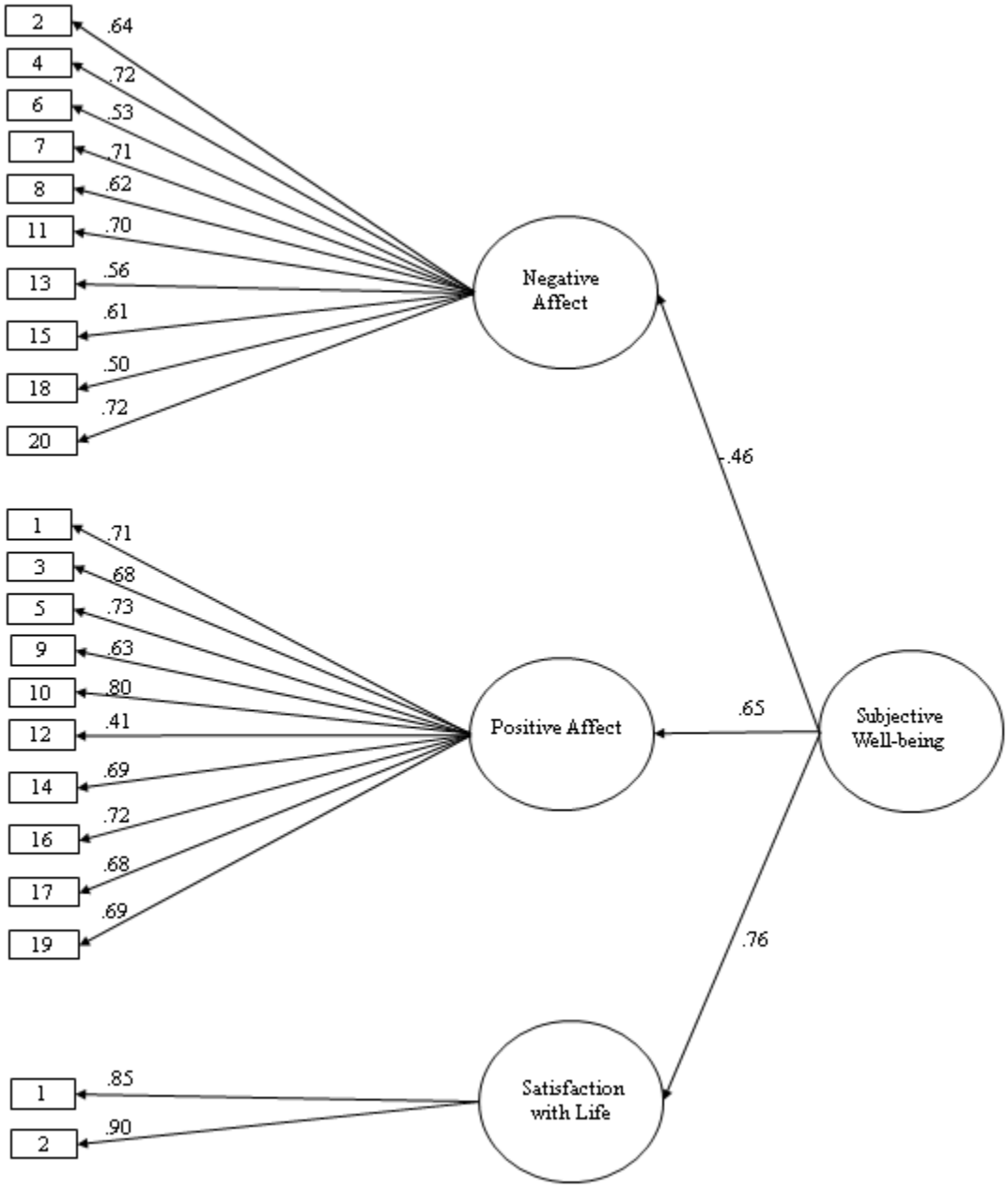


N = 503, *SRMSR* = 0.04, *GFI* = .98, *NFI* = .98.

Figure E.15. Factorial structure of the Basic Psychological Needs Scale.

APPENDIX F

FACTORIAL STRUCTURE OF SUBJECTIVE WELL-BEING

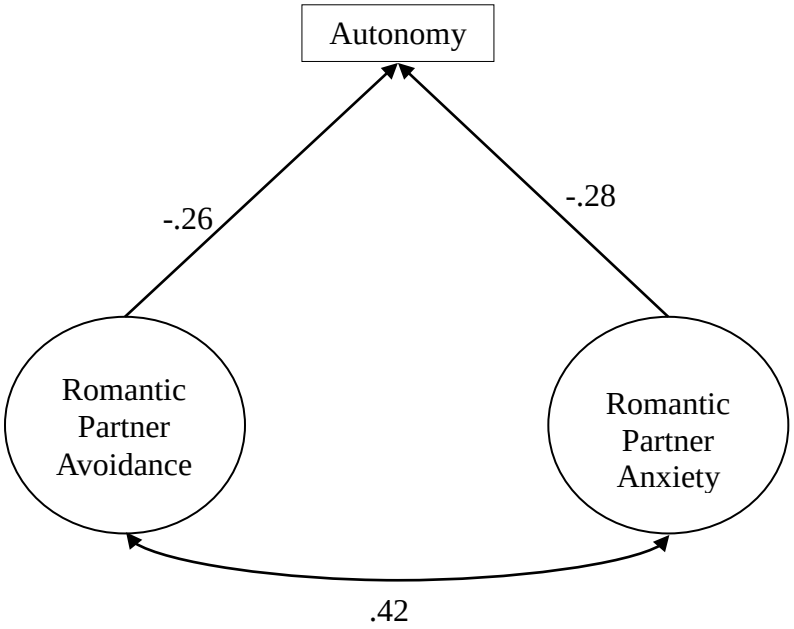


N = 505, *SRMSR* = 0.06, *GFI* = .97, *NFI* = .95.

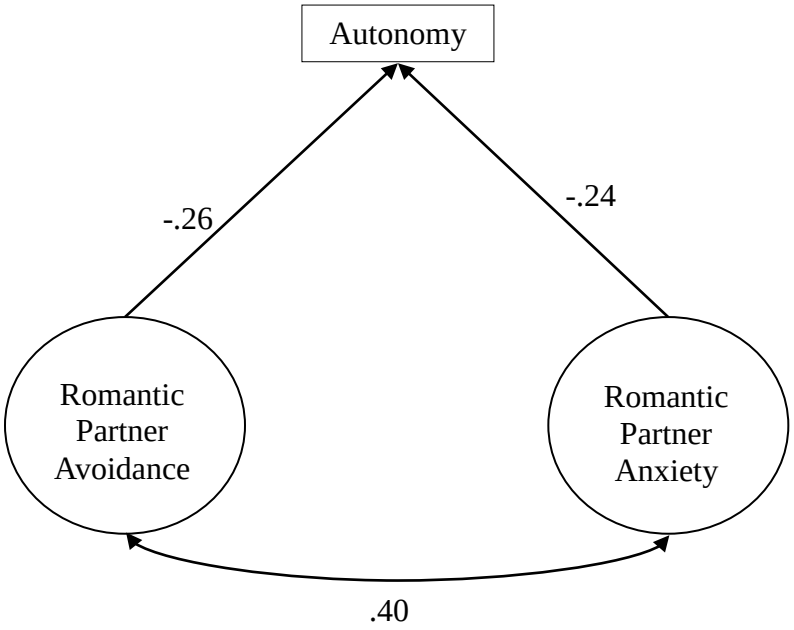
APPENDIX G

MODELS OF ATTACHMENT STYLE PREDICTSING (ECR-RS)

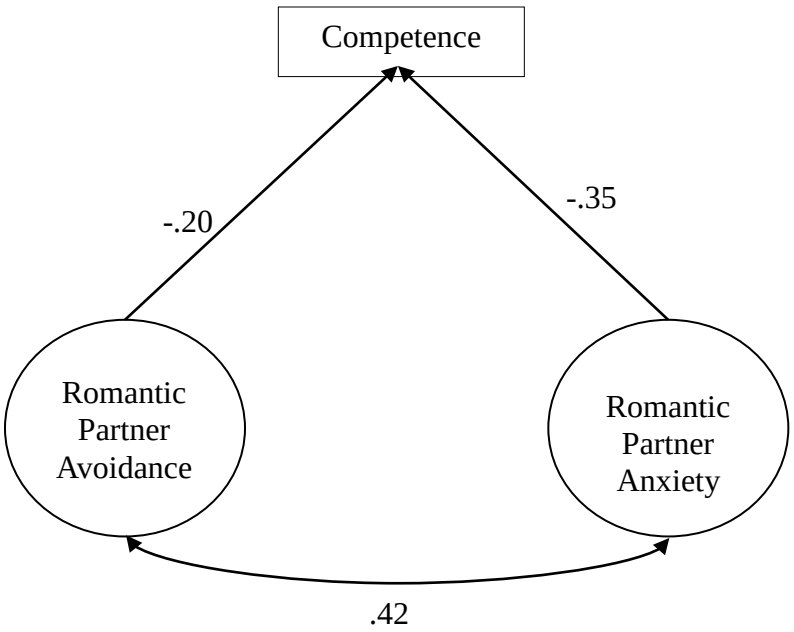
PSYCHOLOGICAL NEEDS FULFILLMENT



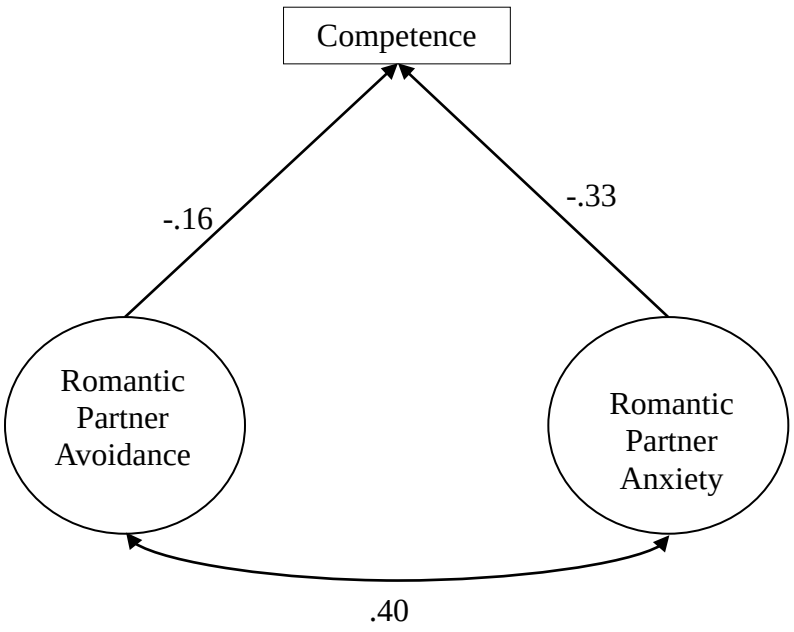
N = 266, *SRMSR* = 0.07, *GFI* = .98, *NFI* = .97.
Figure G.1. Model of the relationship between Attachment Style with Romantic Partner Predicting Autonomy. Listwise.



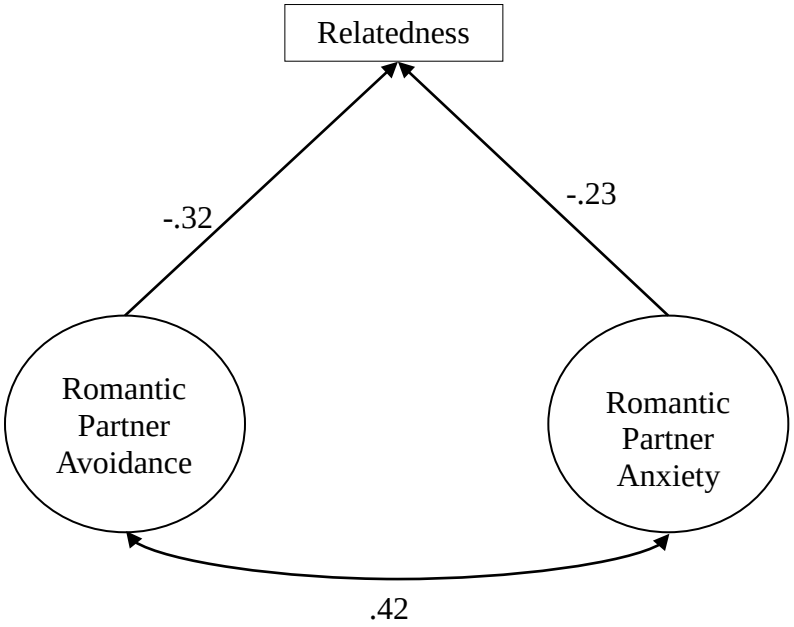
N = 505, *SRMSR* = 0.07, *GFI* = .98, *NFI* = .96.
Figure G.2. Model of the Relationship between Attachment Style with Romantic Partner Predicting Autonomy. Imputed.



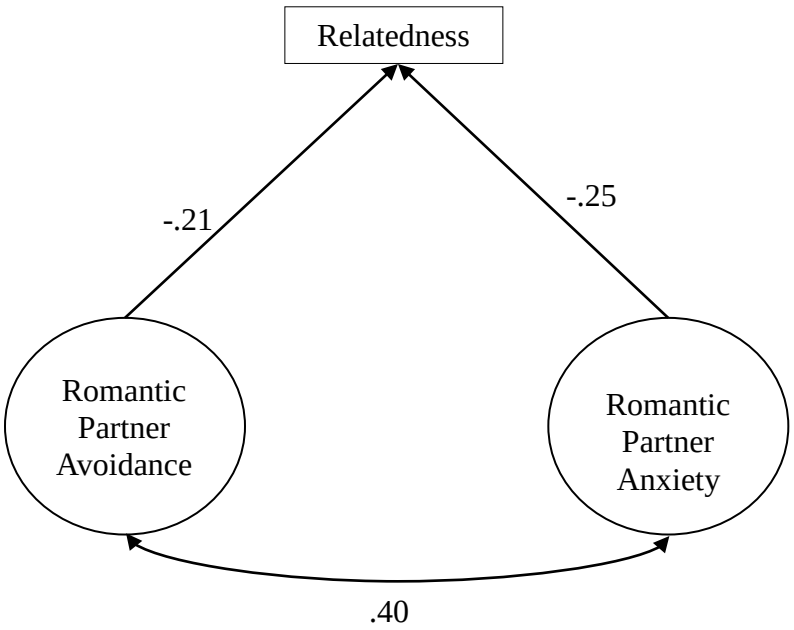
N = 266, *SRMSR* = 0.07, *GFI* = .98, *NFI* = .97.
Figure G.3. Model of the Relationship between Attachment Style with Romantic Partner Predicting Competence. Listwise.



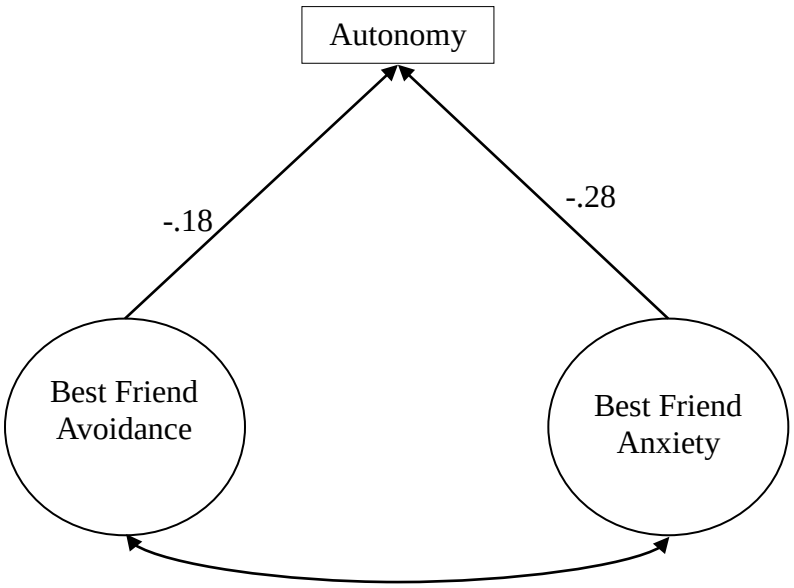
N = 505, *SRMSR* = 0.07, *GFI* = .98, *NFI* = .96.
Figure G.4. Model of the Relationship between Attachment Style with Romantic Partner Predicting Competence. Imputed.



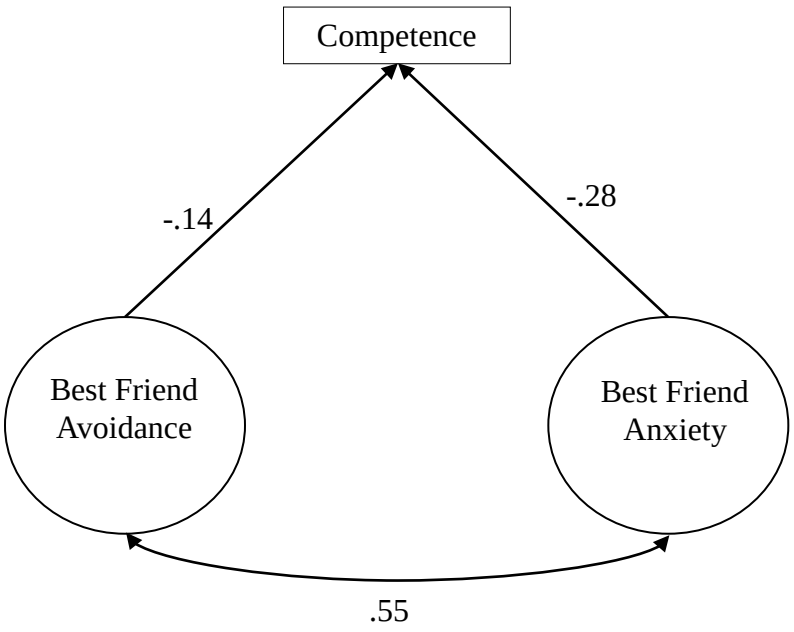
N = 266, *SRMSR* = 0.07, *GFI* = .98, *NFI* = .97.
Figure G.5. Model of the Relationship between Attachment Style with Romantic Partner Predicting Relatedness. Listwise.



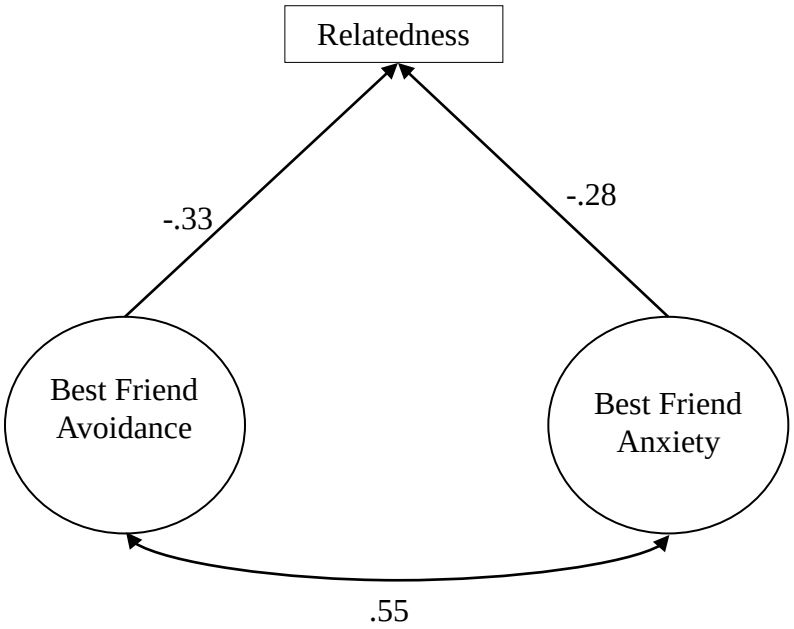
N = 505, *SRMSR* = 0.07, *GFI* = .98, *NFI* = .96.
Figure G.6. Model of the Relationship between Attachment Style with Romantic Partner Predicting Relatedness. Imputed.



N = 503, *SRMSR* = 0.07, *GFI* = .98, *NFI* = .97.
Figure G.7. Model of the Relationship between Attachment Style with Best Friend Predicting Autonomy.

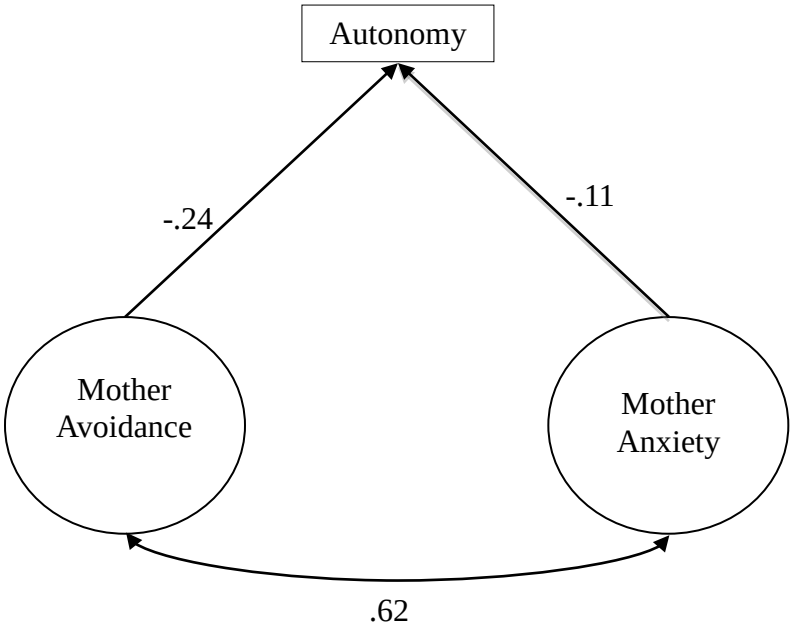


N = 503, *SRMSR* = 0.07, *GFI* = .98, *NFI* = .97.
Figure G.8. Model of the Relationship between Attachment Style with Best Friend Predicting Competence.



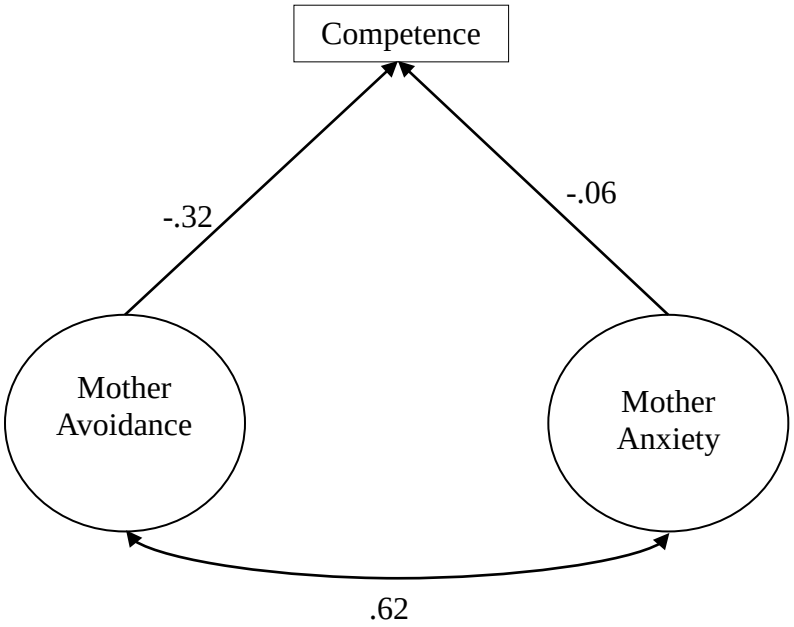
N = 503, *SRMSR* = 0.07, *GFI* = .98, *NFI* = .97.

Figure G.9. Model of the Relationship between Attachment Style with Best Friend Predicting Relatedness.

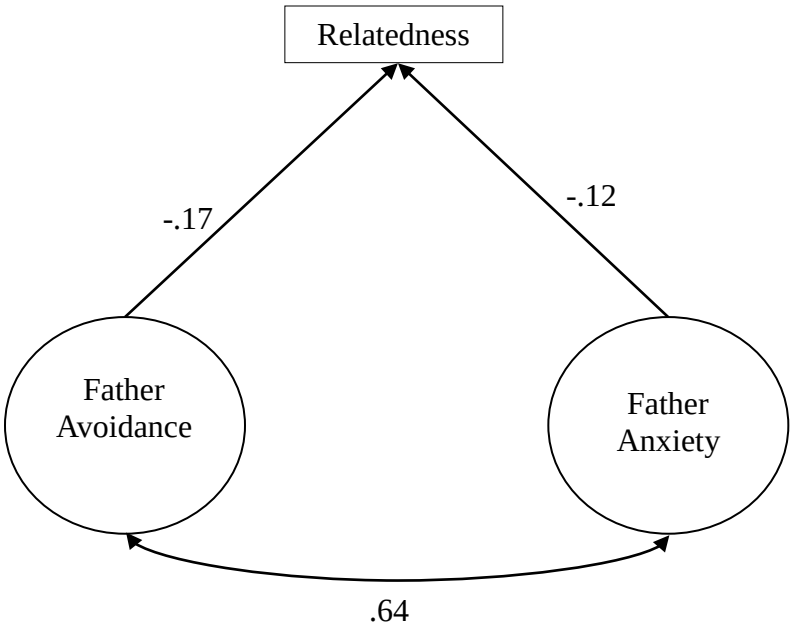


N = 503, *SRMSR* = 0.05, *GFI* = .99, *NFI* = .98.

Figure G.10. Model of the Relationship between Attachment Style with Mother Predicting Autonomy.



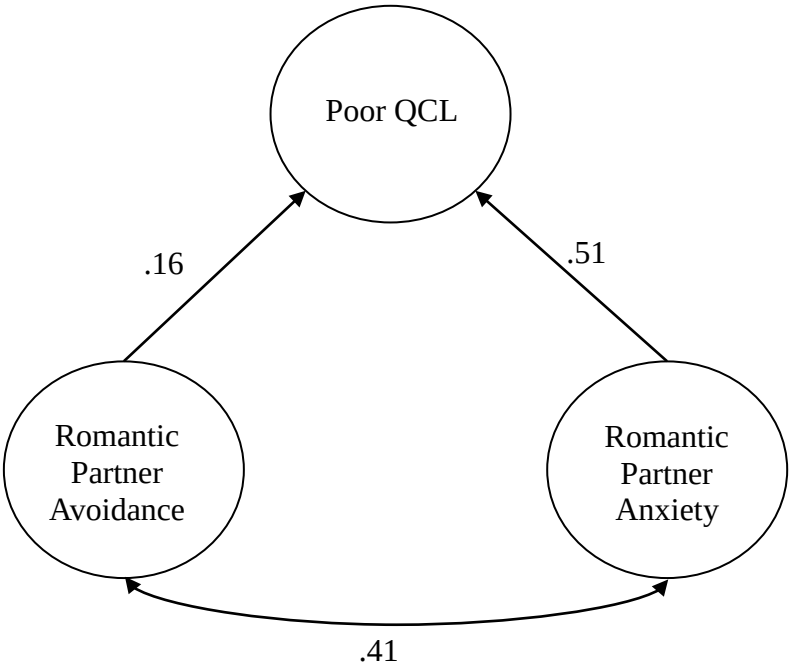
N = 503, *SRMSR* = 0.05, *GFI* = .99, *NFI* = .98.
Figure G.11. Model of the Relationship between Attachment Style with Mother Predicting Competence.



N = 503, *SRMSR* = 0.05, *GFI* = .99, *NFI* = .98.
Figure G.12. Model of the Relationship between Attachment Style with Mother Predicting Relatedness.

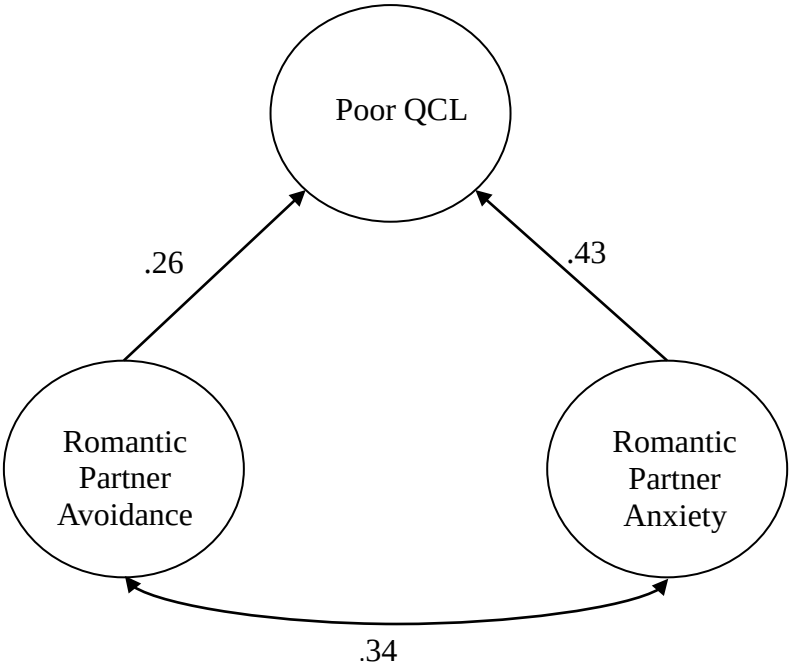
APPENDIX H

ATTACHMENT STYLE (ECR-RS) PREDICTING QUALITY OF COLLEGE LIFE (CAS)



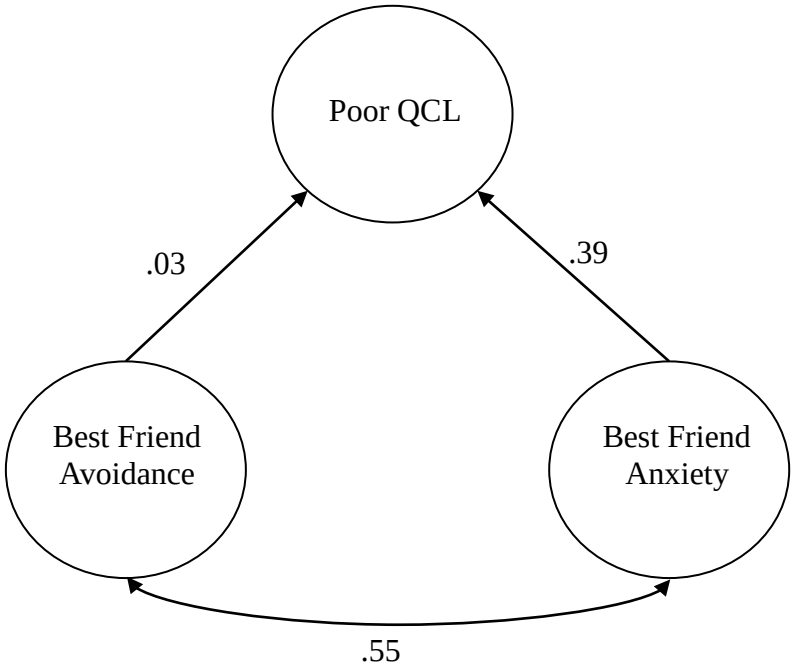
N = 268, *SRMSR* = 0.07, *GFI* = .97, *NFI* = .96.

Figure H.1. Model of Attachment Style with Romantic Partner Predicting Poor Quality of College Life (QCL). Listwise.

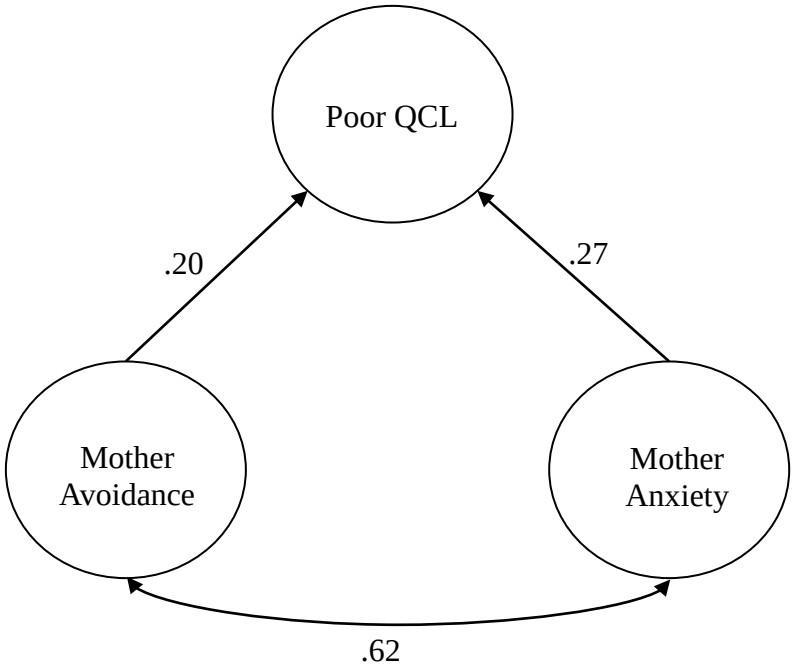


N = 505, *SRMSR* = 0.06, *GFI* = .97, *NFI* = .96.

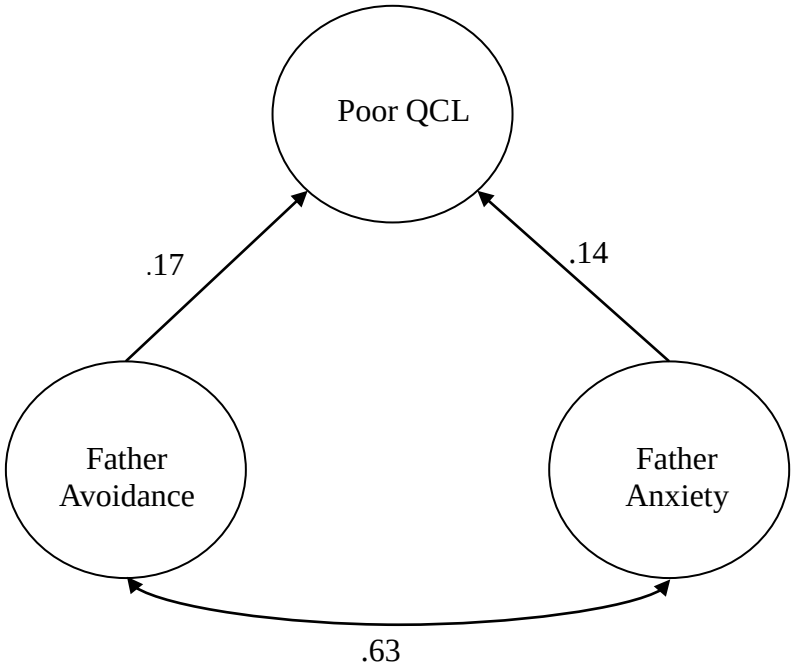
Figure H.2. Model of Attachment Style with Romantic Partner Predicting Poor Quality of College Life (QCL). Imputed.



N = 505, *SRMSR* = 0.06, *GFI* = .97, *NFI* = .96.
Figure H.3. Model of Attachment Style with Best Friend Predicting Poor Quality of College Life (QCL).



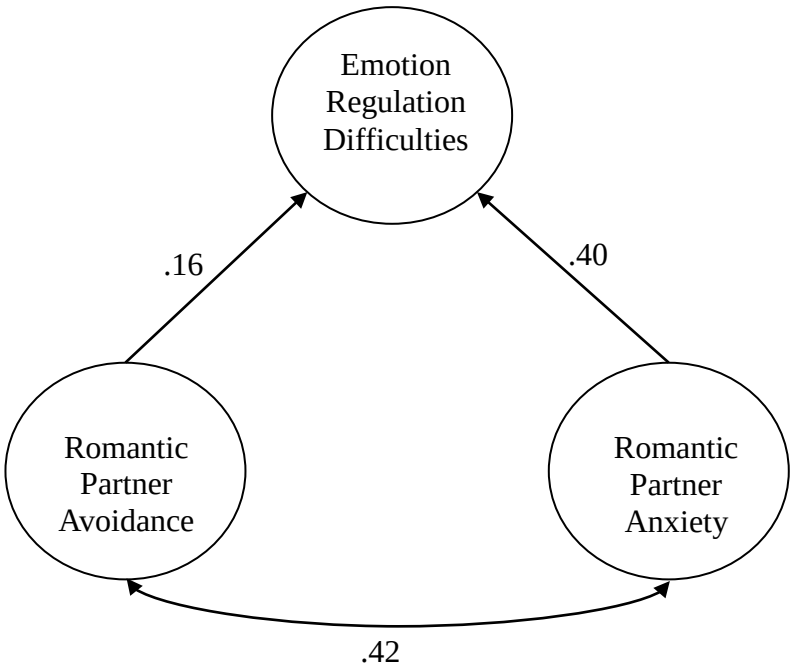
N = 505, *SRMSR* = 0.06, *GFI* = .97, *NFI* = 97.
Figure H.4. Model of Attachment Style with Mother Figure Predicting Poor Quality of College Life (QCL).



N = 505, *SRMSR* = 0.06, *GFI* = .98. *NFI* = .96.
Figure H.5. Model of Attachment Style with Father Figure Predicting Poor Quality of College Life (QCL).

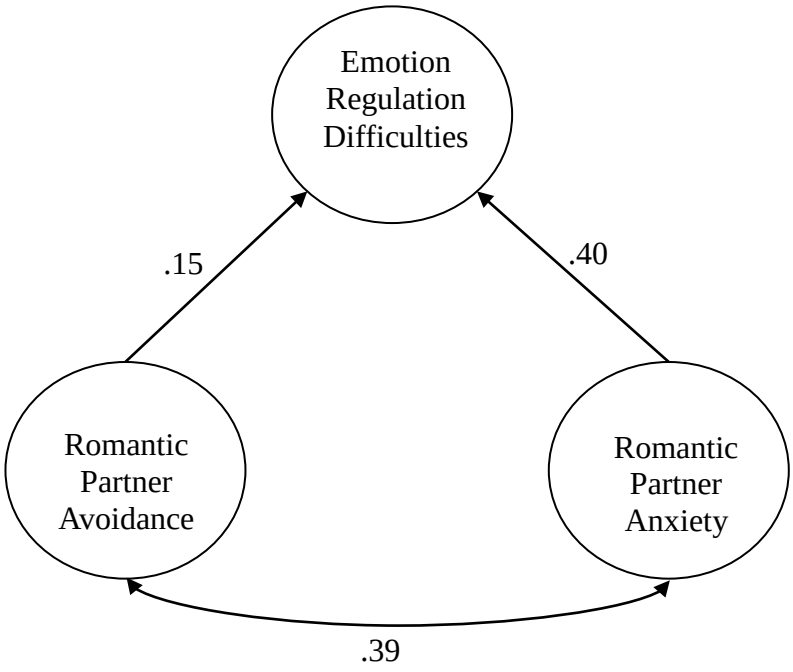
APPENDIX I

ATTACHMENT STYLE (ECR-RS) PREDICTING EMOTION REGULATION DIFFICULTIES (DERS)



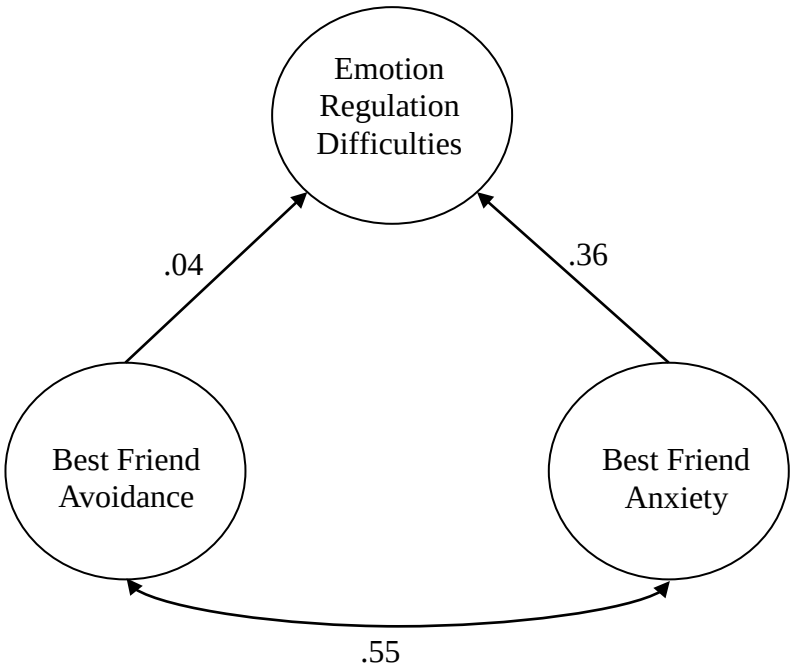
N = 266, *SRMSR* = 0.07, *GFI* = .97, *NFI* = .94.

Figure I.1. Model of Attachment Style with Romantic Partner Predicting Emotion Regulation Difficulties. Listwise.



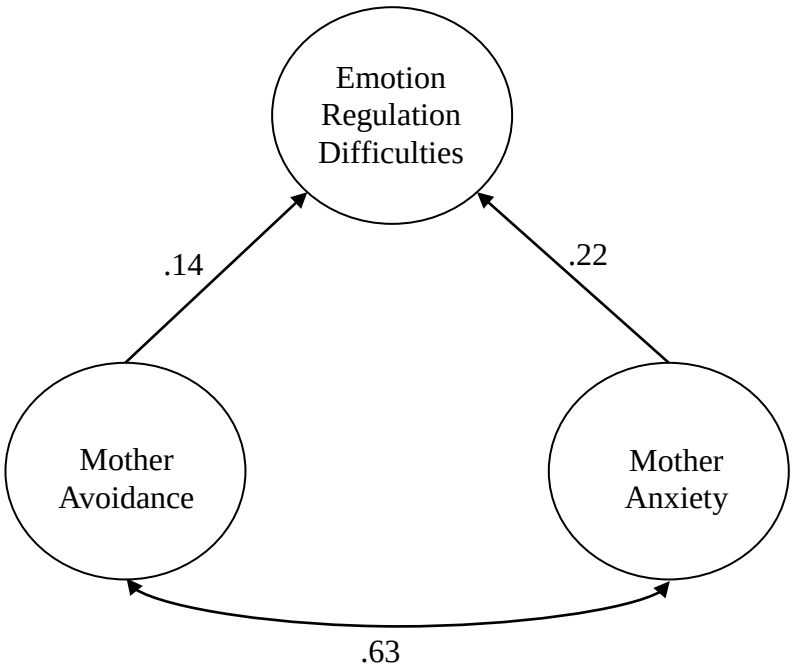
N = 505, SRMSR = 0.08, GFI = .97, NFI = .94.

Figure I.2. Model of Attachment Style with Romantic Partner Predicting Emotion Regulation Difficulties. Imputed.



N = 503, *SRMSR* = 0.06, *GFI* = .98, *NFI* = .96.

Figure I.3. Model of Attachment Style with Best Friend Predicting Emotion Regulation Difficulties.

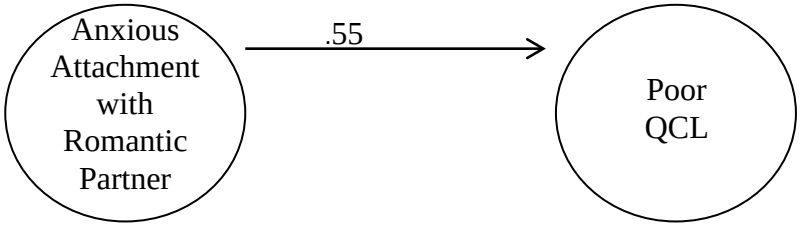


N = 503, *SRMSR* = 0.06, *GFI* = .97, *NFI* = .96.

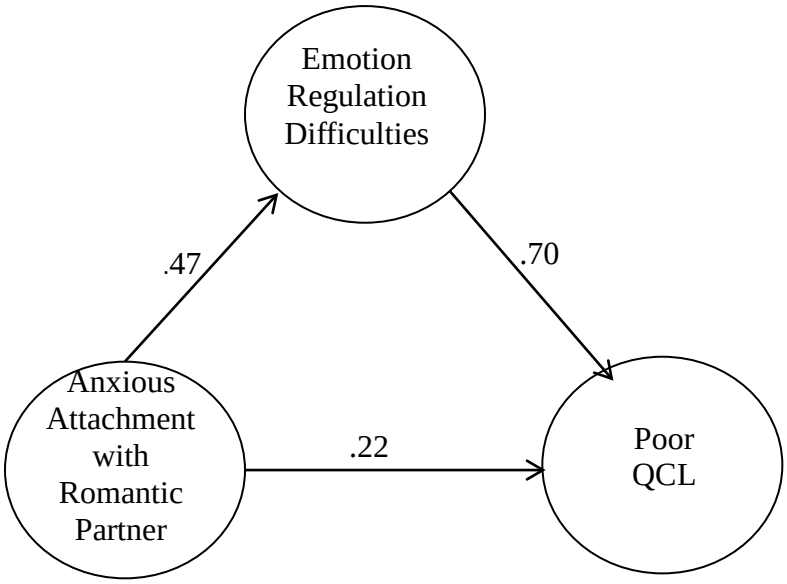
Figure I.4. Model of Attachment Style with Mother Figure Predicting Emotion Regulation Difficulties.

APPENDIX J

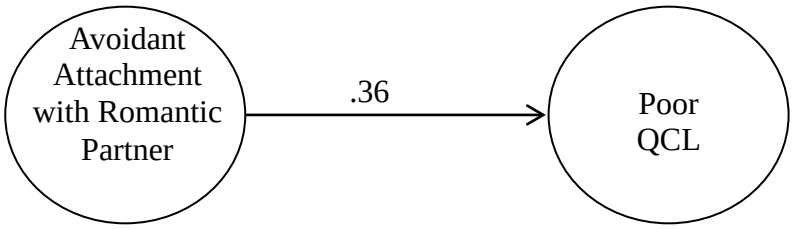
EMOTION REGULATION AS A MEDIATOR BETWEEN ATTACHMENT INSECURITY (ECR-RS) AND QUALITY OF COLLEGE LIFE (CAS)



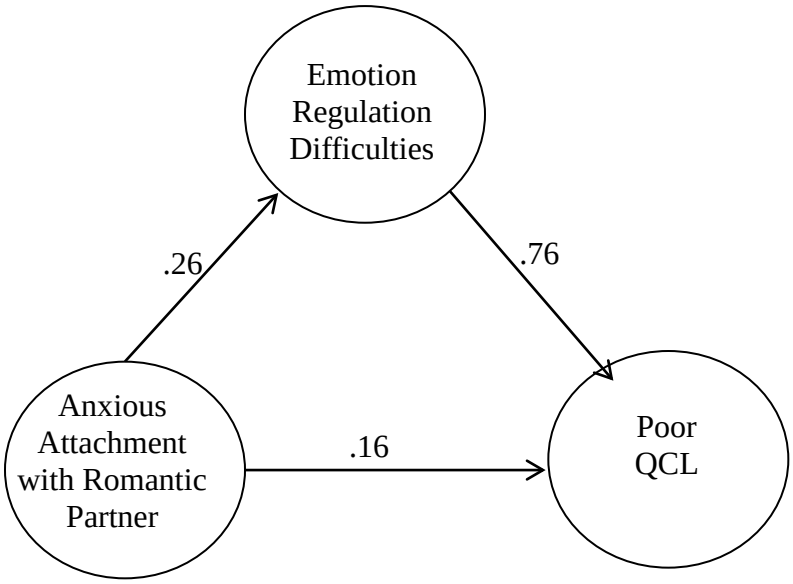
N = 505, *SRMSR* = 0.05, *GFI* = .99, *NFI* = .98.
Figure J.1.1



N = 505, *SRMSR* = 0.05, *GFI* = .98, *NFI* = .98.
Figure J.1.2

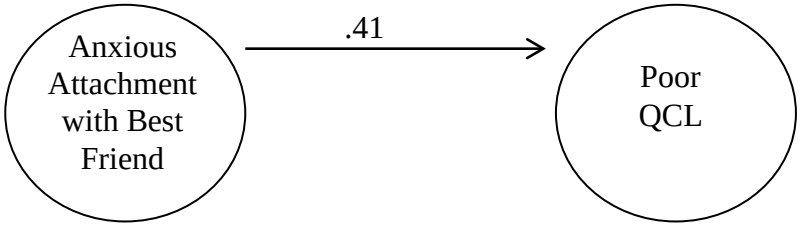


N = 505, *SRMSR* = 0.05, *GFI* = .99, *NFI* = .98.
Figure J.1.3

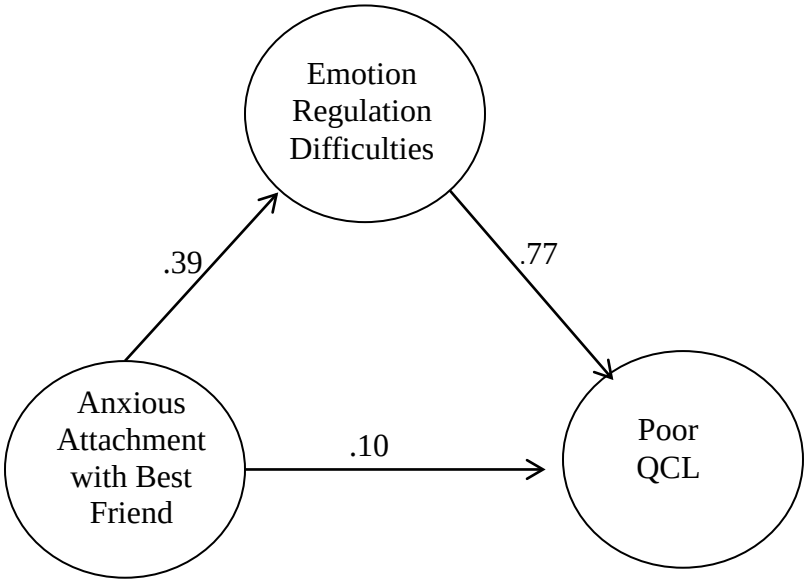


N = 505, *SRMSR* = 0.08, *GFI* = .96, *NFI* = .94.
Figure J.1.4

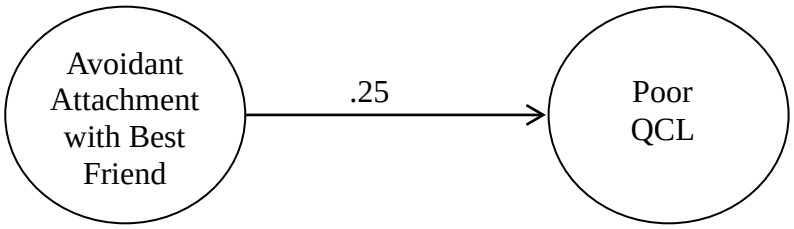
Figure J.1. Models Supporting the Role of Emotion Regulation Difficulties as a Mediator of the Relationship between Attachment Style with Romantic Partner and Poor Quality of Life. Imputed.



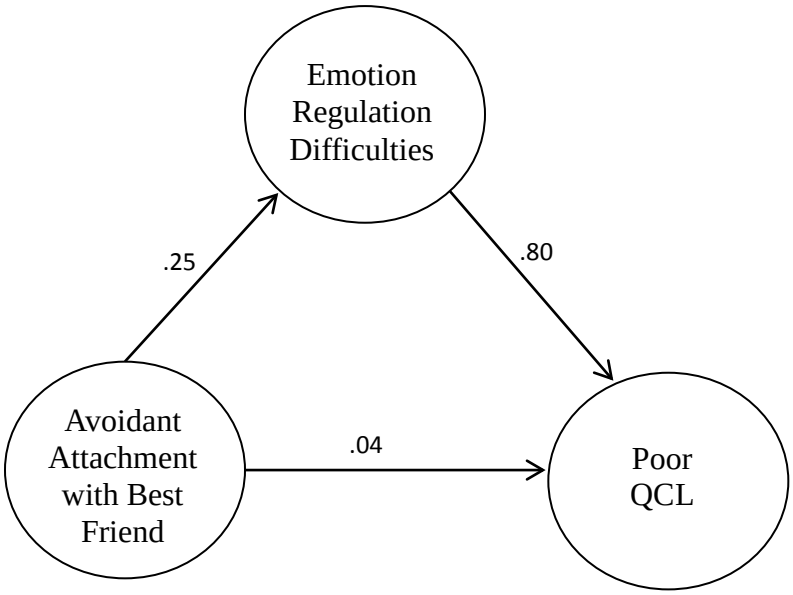
N = 505, *SRMSR* = 0.05, *GFI* = .98, *NFI* = .98.
Figure J.2.1



N = 505, *SRMSR* = 0.05, *GFI* = .98, *NFI* = .97.
Figure J.2.2

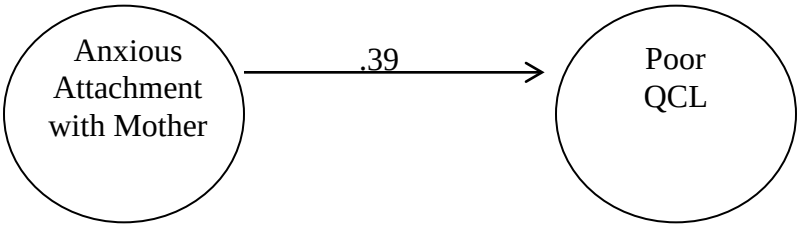


N = 505, *SRMSR* = 0.06, *GFI* = .96, *NFI* = .96.
Figure J.2.3

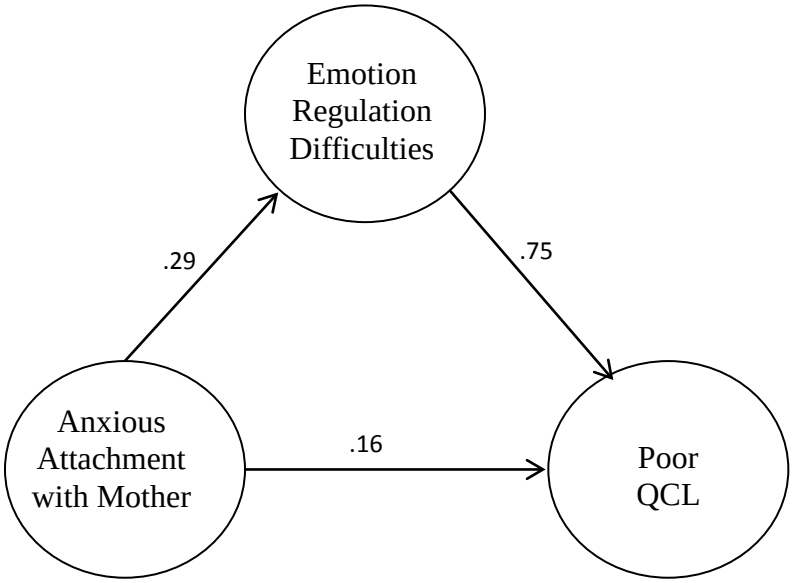


N = 505, *SRMSR* = 0.06, *GFI* = .97, *NFI* = .96.
Figure J.2.4

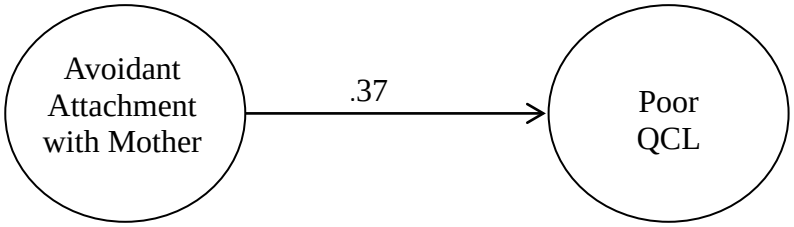
Figure J.2. Models Supporting the Role of Emotion Regulation Difficulties as a Mediator of the Relationship between Attachment Style with Best Friend and Poor Quality of Life.



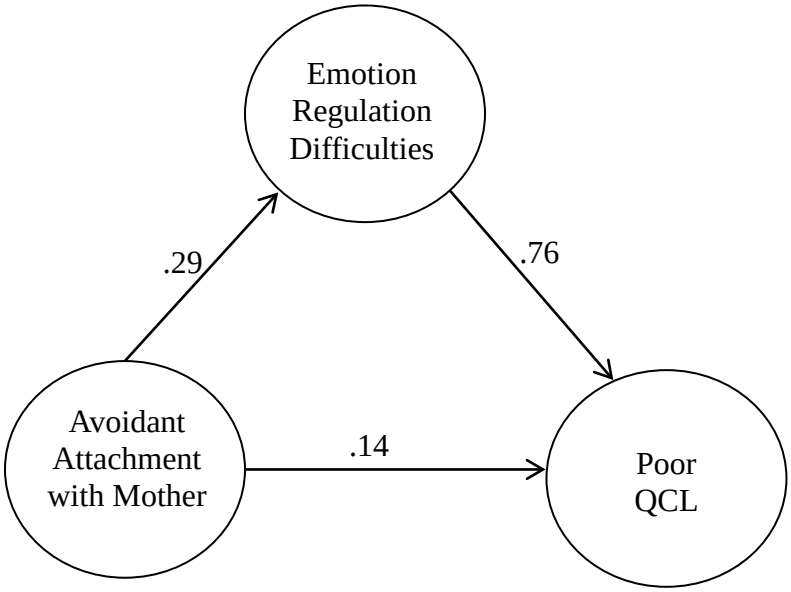
N = 505, SRMSR = 0.05, GFI = .98, NFI = .98.
Figure J.3.1



N = 505, SRMSR = 0.05, GFI = .98, NFI = .97.
Figure J.3.2



N = 505, *SRMSR* = 0.07, *GFI* = .96, *NFI* = .96.
Figure J.3.3

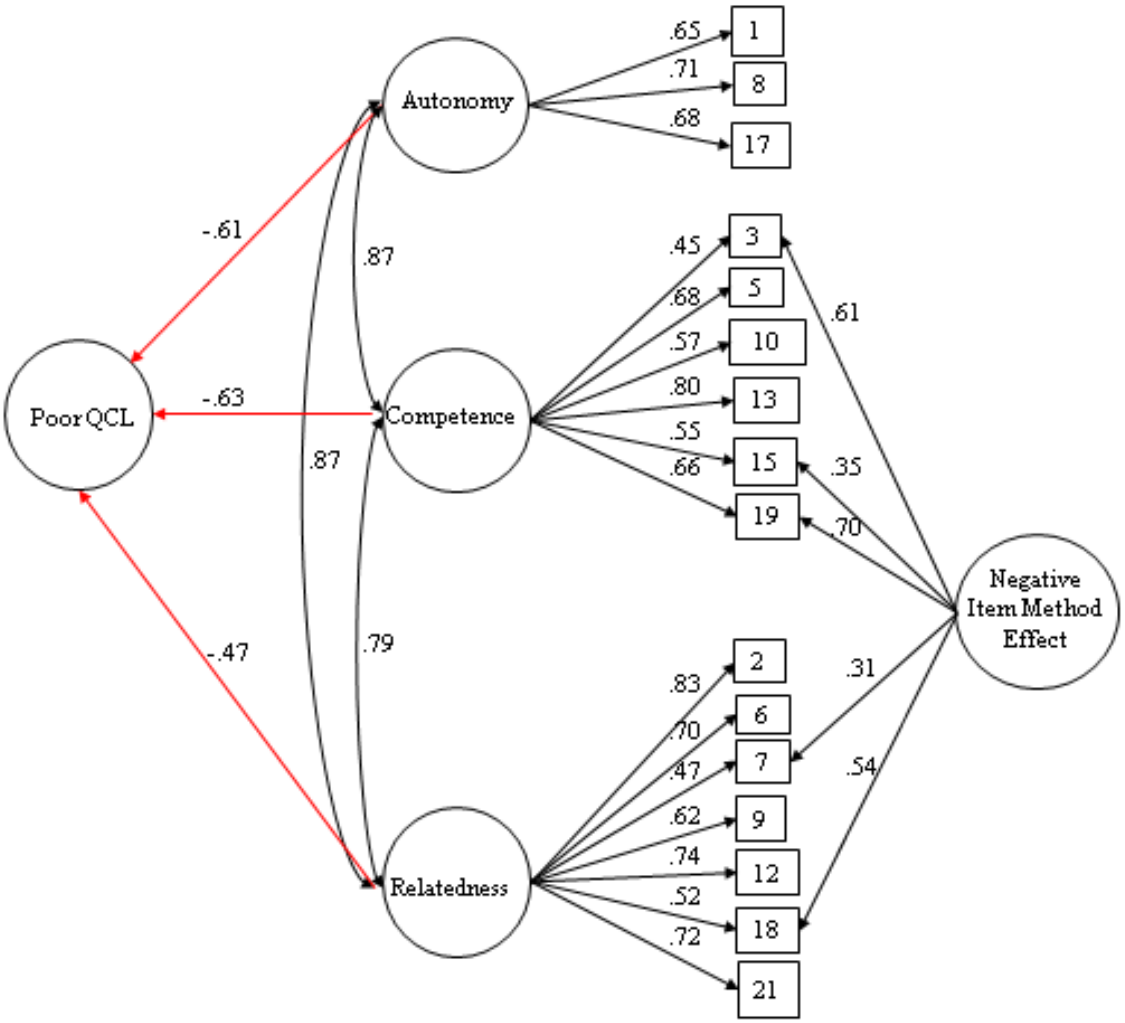


N = 505, *SRMSR* = 0.07, *GFI* = .97, *NFI* = .95.
Figure J.3.4

Figure J.3. Models Supporting the Role of Emotion Regulation Difficulties as a Mediator of the Relationship between Attachment Style with the Mother Figure and Poor Quality of Life.

APPENDIX K

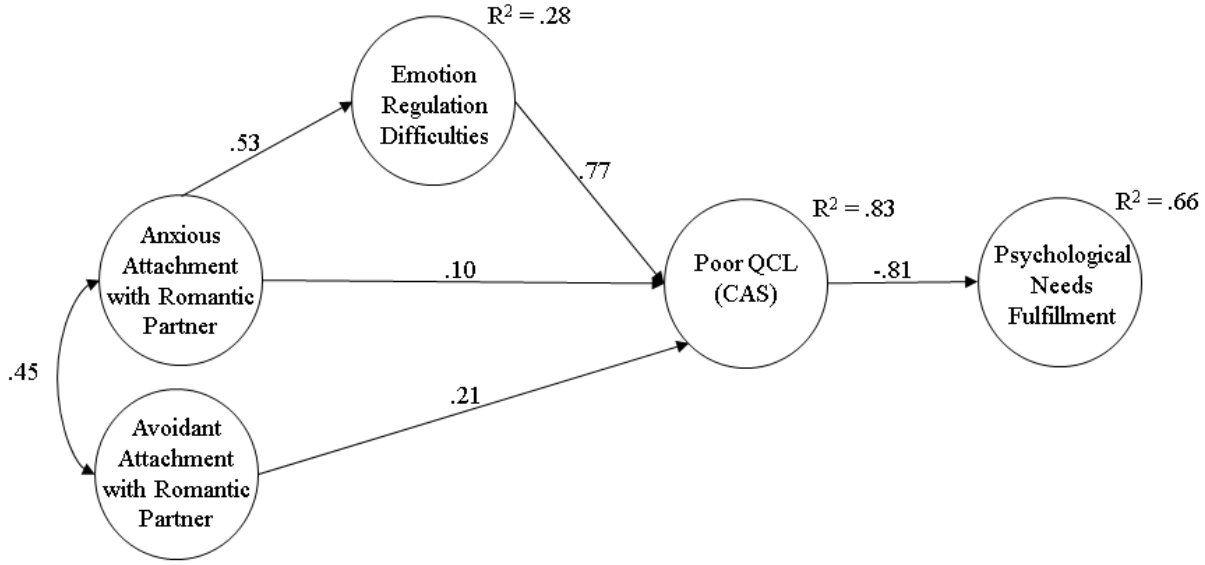
PSYCHOLOGICAL NEEDS FULFILLMENT PREDICTING POOR QUALITY OF COLLEGE LIFE (QOL)



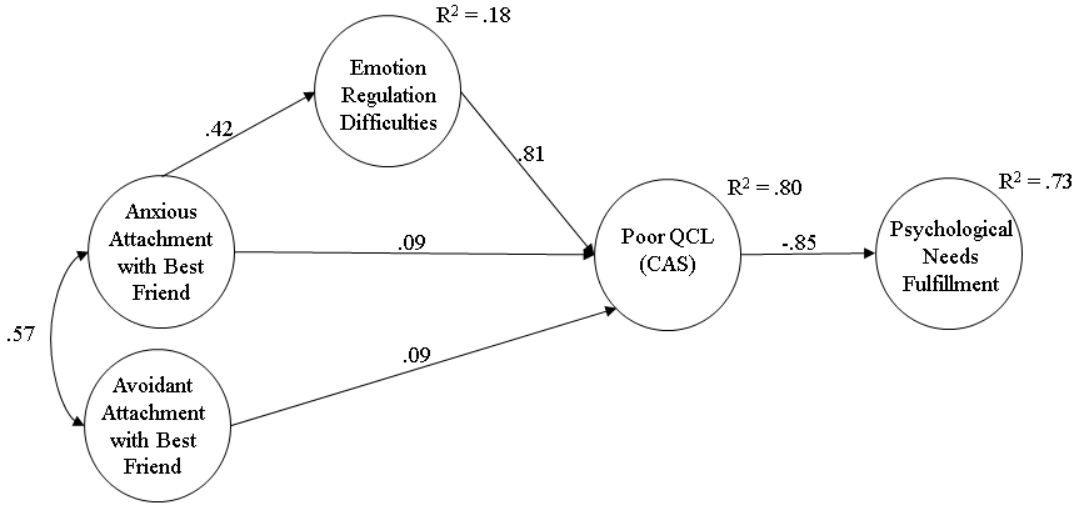
N = 503, *SRMSR* = 0.05, *GFI* = .98, *NFI* = .97

APPENDIX L

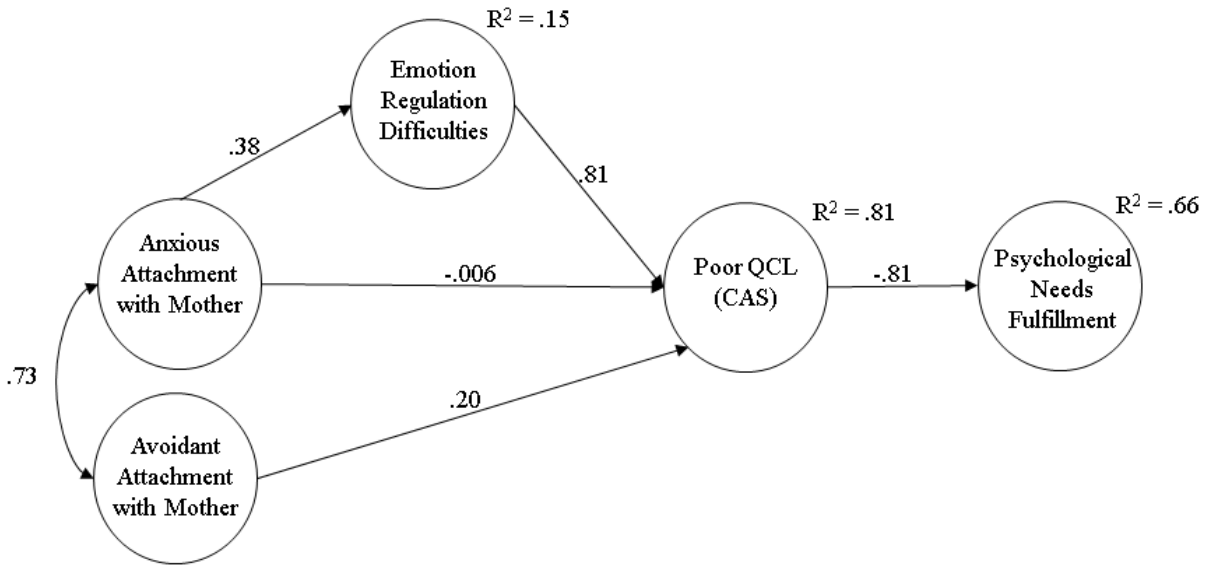
ALTERNATIVE FINAL MODELS



N = 505, *SRMSR* = 0.06, *GFI* = .97, *NFI* = .96.
Figure L.1. Alternative Final Model of the Relationship between Attachment Style with Romantic Partner (Set A), Emotion Regulations Difficulties, Poor Quality of College Life and Psychological Needs Fulfillment.

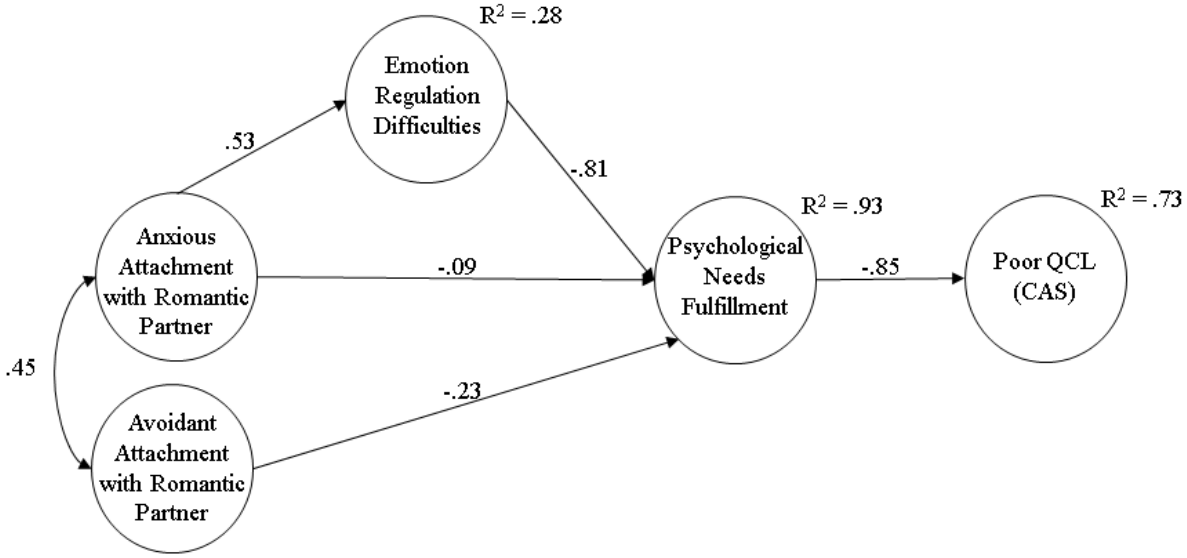


N = 505, *SRMSR* = 0.07, *GFI* = .96, *NFI* = .94.
Figure L.2. Alternative Final Model of the Relationship between Attachment Style with Best Friend (Set A), Emotion Regulations Difficulties, Poor Quality of College Life and Psychological Needs Fulfillment.



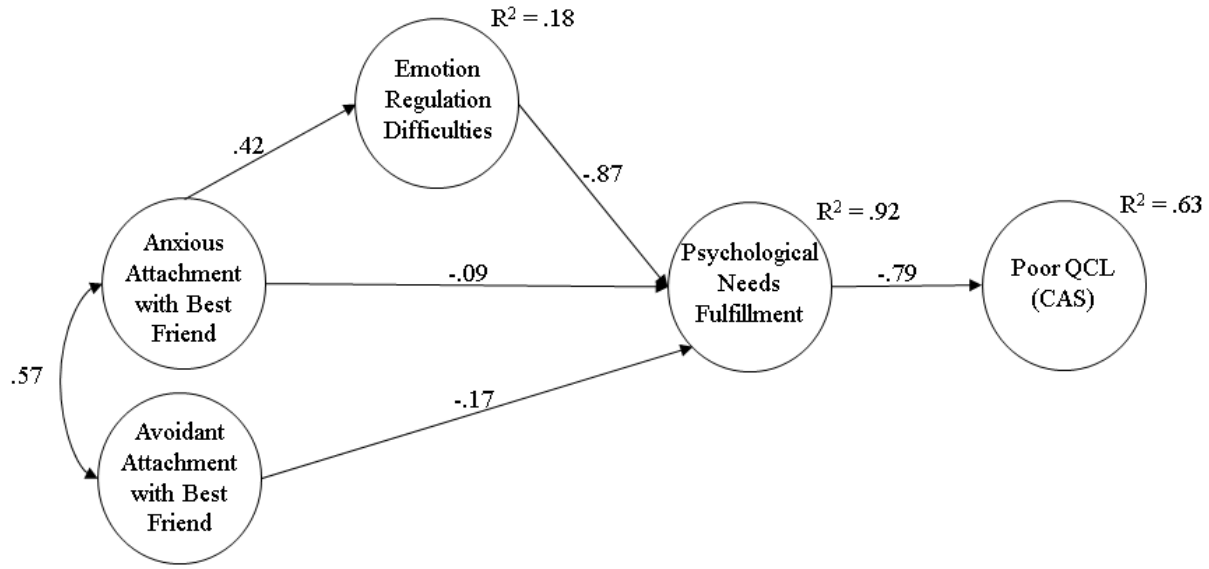
N = 505, *SRMSR* = 0.07, *GFI* = .96, *NFI* = 95.

Figure L.3. Alternative Final Model of the Relationship between Attachment Style with the Mother Figure (Set A), Emotion Regulations Difficulties, Poor Quality of College Life and Psychological Needs Fulfillment.

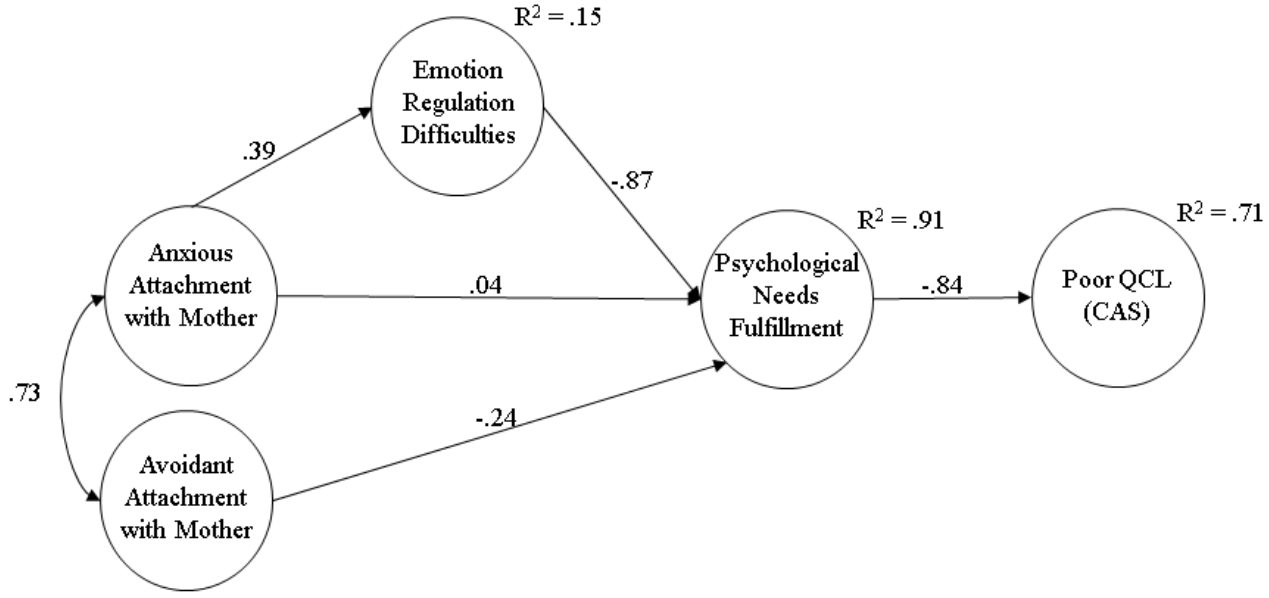


N = 505, *SRMSR* = 0.07, *GFI* = .96, *NFI* = .95.

Figure L.4. Alternative final model of the Relationship between Attachment Style with Romantic Partner (Set B), Emotion Regulations Difficulties, Poor Quality of College Life and Psychological Needs Fulfillment.



N = 505, *SRMSR* = 0.076, *GFI* = .96, *NFI* = .96.
Figure L.5. Alternative final model of the Relationship between Attachment Style with Best Friend (Set B), Emotion Regulations Difficulties, Poor Quality of College Life and Psychological Needs Fulfillment.



N = 505, *SRMSR* = 0.07, *GFI* = .97, *NFI* = .96.
Figure L.6. Alternative final model of the Relationship between Attachment Style with the Mother Figure (Set B), Emotion Regulations Difficulties, Poor Quality of College Life and Psychological Needs Fulfillment.

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