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Influences on the Path to Life Satisfaction: A Serial Mediation Model of Adult Attachment, Emotional Intelligence, Emotion Regulation, and Dispositional Resilience

Misa Shimono
Western Washington University, misa.a.shimono@gmail.com

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A Serial Mediation Model of Adult Attachment, Emotional Intelligence, Emotion Regulation, and Dispositional Resilience

By

Misa Shimono

Accepted in Partial Completion
of the Requirements for the Degree
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ADVISORY COMMITTEE

Dr. Brent Mallinckrodt, Chair

Dr. Barbara Lehman

Dr. Christie Scollon

GRADUATE SCHOOL

David L. Patrick, Dean

Master's Thesis

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Misa Shimono

November 24, 2021

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A Thesis
Presented to
The Faculty of
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Abstract

Objective: The goal of this study was to explore the mediating roles of emotional intelligence, emotion regulation, and dispositional resilience in the association between adult attachment quality and life satisfaction, because they may be amenable to psychoeducational intervention that increases life satisfaction among people with attachment insecurity. ***Method:*** Archival correlational data from a convenience sample of 124 first-year university psychology students in a study on stress and dropout were analyzed using PROCESS (Hayes, 2021) to test the serial impact of emotional intelligence (Trait Meta-Mood Scale; Salovey et al., 1995) and emotion regulation (Difficulties in Emotion Regulation Scale; Gratz & Roemer, 2004) on dispositional resilience (Dispositional Resilience Scale-15; Bartone, 1995) in the association between adult attachment (Experiences in Close Relationships Scale; Brennan et al., 1998) and life satisfaction (Satisfaction With Life Scale; Diener et al., 1985). ***Results:*** Attachment anxiety and secure-fearful effects were individually and serially mediated by emotional intelligence mood repair and resilient commitment, while avoidance effects were serially mediated by clarity and commitment. All three inputs' effects were serially mediated by lack of access to emotion regulation strategies and commitment. The effect of the secure-fearful axis was also independently mediated by commitment in the context of emotion regulation difficulties. Avoidance effects were only serially mediated, and lack of access to emotion regulation strategies only mediated serially with commitment. ***Conclusions:*** Both similarities and differences exist between individuals with different qualities of attachment insecurity, pointing to both overlapping and unique targets for attachment dimension-specific interventions to increase life satisfaction.

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Influences on the Path to Life Satisfaction:

A Serial Mediation Model of Adult Attachment, Emotional Intelligence, Emotion Regulation, and Dispositional Resilience

Imagine that you are lying on your deathbed at the end of a long, fulfilling life. You think to yourself, "I did it!". Now, answer this question: What is your "it"?

Regardless of any specific answer to that question, the question itself taps into the urge to reflect on whether one is satisfied with and fulfilled by one's life. Although this scenario poses the question as a near-end-of-life review, one need not wait until one's life is near an end before reflecting on this question. The general purpose of this paper is to investigate factors that are associated with evaluations of life satisfaction in order to better understand where corrective actions can be implemented.

Importance of Life Satisfaction

Humans have been seeking answers to the question of how to live a good life for millennia, and people around the world often think about and highly value happiness and life satisfaction (Diener, 2000). The field of positive psychology considers happiness, or subjective well-being (SWB), to be one aspect of having a good life. Diener (2000, p. 34) defined SWB as "people's cognitive and affective evaluations of their lives" when measured against their own standards and criteria about what is desirable and positive – this last part is what makes it subjective. Specifically, Diener proposed that SWB is composed of three parts: global cognitive evaluations of one's life as being satisfying; the frequent experience of positive affect; and the infrequent experience of negative affect (Busseri & Sadava, 2011; Diener, 1984).

The tripartite construction of SWB is supported by evidence suggesting that positive affect is more than merely the absence of negative affect, and that these two elements are

somewhat independent of each other, though often correlated (Diener, 1984). To clarify how the components of SWB are related, one study reviewed the strengths and weaknesses of five different structural conceptualizations of the tripartite nature of SWB (Busseri & Sadava, 2011). A follow-up meta-analysis demonstrated support for several conceptualizations, but concluded that the empirical evidence consistently supported only a hierarchical conceptualization with SWB as a latent higher order factor, with both the shared and the unique variance of SWB components – life satisfaction, positive affect, and negative affect – crucial to understanding the construct (Busseri, 2018). Lyubomirsky et al.'s (2005) extensive review and meta-analysis of the benefits of frequent positive affect relied, in part, on studies of other dimensions of SWB as proxies for positive affect, due to the variance shared between dimensions of SWB. The current study takes this same approach regarding life satisfaction when reviewing the evidence for relationships that are hypothesized to exist but for which direct evidence was elusive.

The evidence for the benefits of being highly satisfied with one's life are relatively clear. For example, De Neve and Oswald (2012) found that US teenagers who reported higher life satisfaction or positive affect, compared to those with lower life satisfaction or positive affect, earned a significantly higher income approximately a decade later. They controlled for education, IQ, physical health, self-esteem, later happiness, and even the respondents' height. They also accounted for family environment and genetic factors by comparing the results to those obtained from respondents' siblings from the same study. Greater life satisfaction and positive affect as a teenager were related to higher income a decade later through the effects of earning a college degree, obtaining employment and receiving promotion, having more optimism and extraversion, and less neuroticism (De Neve & Oswald, 2012). Other benefits associated with higher life satisfaction include better health and longevity; more pro-social behavior; more

satisfaction with friends, family, and social activities; higher self-esteem, optimism, extraversion, assertiveness, warmth, and energy; greater engagement in hobbies; and increased productivity (for reviews, see De Neve et al., 2013, and Lyubomirsky et al., 2005).

Conversely, being dissatisfied with one's life has been associated with detrimental outcomes. Koivumaa-Honkanen et al. (2001) found that Finnish adults from a large nationwide sample of twins and singletons who were dissatisfied with their life were more likely to die by suicide during a 20-year follow-up period. Moreover, during the first 10 years of the follow-up period, men who were the most dissatisfied died by suicide at a rate 24.85 times the rate that satisfied men did. Similar results also emerged from analyses of the European Values Survey data, in which life satisfaction was inversely related to suicide rates in 32 countries (Bray & Gunnell, 2006). Being dissatisfied with one's life carries with it a notable risk of mortality.

People vary in the assessments they make about their life satisfaction. Being satisfied with one's life is not a universal experience, and it does not happen automatically, and yet, ideally, everyone would have the opportunity to live a satisfying life. In order to foster it, the factors that influence it need to be better understood. Evidence suggests that life satisfaction is related in systematic ways to the quality of attachment people experience in close relationships. However, more research is needed to explore the underlying mechanisms that convey the effect of adult attachment quality onto assessments of life satisfaction. Figure 1 shows a conceptual model of the hypothesized mediation paths in the current study, which proposes that the relationship between attachment and life satisfaction may be mediated in parallel by emotional intelligence and emotion regulation; these affect-related variables are influenced by adult attachment security. Moreover, dispositional resilience may occupy the position of "secondary mediator" in a proposed serial causal chain. Dispositional resilience is influenced directly by the

first-stage mediators, which inform a person's self-concept about their ability to handle life's challenges. Together, emotional intelligence, emotion regulation, and dispositional resilience may, in turn, impact the chief outcome variable in this study of life satisfaction.

Adult Attachment and Life Satisfaction

Hazan and Shaver (1987) proposed that features of romantic relationships in adults such as trust, intimacy, dependence, and anxiety could be similar to and even influenced by early experiences in infant-caregiver relationships. Specifically, differences in romantic relationships, like those in infant-caregiver relationships, could be related to biologically and socially based attachment processes that foster the proximity necessary for survival and security. One such process is the formation, through repeated experience, of mental models about the availability, reliability, responsiveness, and warmth of attachment figures for attending to one's needs, and in one's own inherent worthiness and self-competence. These *working models* of self and others can be considered types of schemas and scripts which, as described in cognitive social psychology, can be updated with new information but which may prove resistant to change. This resistance is due to the self-confirming nature of perceptual filters and self-confirmation bias inherent in working models. Thus, adult romantic attachment quality often mirrors the individual's infant attachment to caregivers (Collins & Read, 1990; Hazan & Shaver, 1987).

In general, people with negative working models of self, or others, or both, tend to experience less life satisfaction (path *a* in Figure 1). For example, Martikainen (2012) found that, for women age 32-33, life satisfaction was related to whether the quality of the mother-daughter relationship as a teenager was recalled as judgmental or understanding. Similarly, life satisfaction in British adults at age 42 was influenced by maternal closeness and involvement – other operationalizations of parental availability and caring – that had been measured when

participants were ages 7 and 16, even after accounting for a variety of other factors (Flouri, 2004). Research highlights the negative impact of poor attachment quality on life satisfaction throughout the lifespan, whether the attachment relationships in question were with mothers, fathers, peers, or romantic partners among emerging adults (Guarnieri et al., 2015); parents or peers among middle school children (Ma & Huebner, 2008); mothers, fathers, or siblings among university students (Shepherd et al., 2021); parents or one's own adult children among mid- to late-life adults (An & Cooney, 2006); or coaches among teen and emerging adult athletes (Peng et al., 2020). Furthermore, the fact that romantic attachment mediated the relationship between maternal attachment and life satisfaction supports the argument that continuity exists from early attachment quality with primary caregivers to adult romantic attachment quality, which, in turn, affects people's sense of life satisfaction (Guarnieri et al., 2015).

Adult Attachment, Emotional Intelligence, and Emotion Regulation

In order to describe how adult attachment is related to emotional intelligence and emotion regulation (paths *b* and *c* in Figure 1), it is first helpful to describe how adult attachment is similar to and possibly influenced by infant attachment. Attachment theory posits that the purpose of the attachment system for infants is to maintain physical proximity to the caregiver. Proximity, in turn, enables a sense of *felt security* that empowers infants to engage in exploratory behavior and develop mastery of their environment (Sroufe & Waters, 1977a). The working models that are formed in infancy about self and other serve to shape early strategies of emotion regulation. Working models are defined by two orthogonal dimensions dichotomized into positive versus negative working models about the self versus others (Bartholomew & Horowitz, 1991). These working models are also mapped to dimensions of low versus high levels of relationship anxiety versus avoidance (Brennan et al., 1998). Combinations of these dichotomous

categories create four general patterns of attachment style that characterize systematic differences in attachment behavior that are associated with differences in emotion regulation and life satisfaction, among other constructs.

In infants, these systematic differences appear as differences in early emotion regulation strategies. Primary emotion regulation strategies involve proximity-seeking and engagement to elicit caregiving behavior (Main, 1990). When these strategies are met with caregiver availability and appropriate responsiveness, security is maintained and infants can safely explore without attending to proximity concerns, thus forming the basis of a *secure attachment* with low levels of attachment anxiety and avoidance, and positive working models about the self and others. In adult romantic relationships, attachment security manifests as experiences of happiness, friendship, trust, acceptance, comfort with closeness, the ability to depend on others, and a lack of concern about being abandoned or unloved (Collins & Read, 1990; Hazan & Shaver, 1987). Secure romantic relationships also tend to endure longer and are less likely to end in divorce than insecure relationships (Hazan & Shaver, 1987).

However, when infant proximity-seeking is met with physical or emotional unavailability and/or inappropriate caregiver responses, security concerns are still activated, and infants must engage in secondary strategies to regulate this system (Main, 1990). These secondary strategies are associated with the development one of three types of insecure attachment defined by different combinations of high versus low attachment anxiety (negative versus positive working model of the self) on the one hand, and avoidance (negative versus positive working model of others) on the other (Bowlby, 1988; Mikulincer & Florian, 2002).

Infants whose caregivers provide inconsistent responses – sometimes available, loving, and caring, and other times unavailable, preoccupied, or upset (i.e., an intermittent schedule of

reinforcement) – tend to experience a great deal of anxiety about the unpredictability of how their bids for reassurance will be received by others. Their working model about their caregiver as unreliable engages the regulation strategy of hyperactivating their attachment system in an intensified attempt to regain proximity and elicit caregiving through heightened expressions of distress. In this interaction, the negative working model of self corresponds to feelings of helplessness to regulate themselves. Their only recourse for emotion regulation is to solicit a reassuring response from their intermittently responsive caregiver. These infants develop an exaggeratedly dependent, *preoccupied* attachment style (Mikulincer & Florian, 2002). In adult romantic relationships, preoccupied attachment manifests as obsession, desire to not only be close but to merge completely with one's partner, emotional volatility, heightened sexual attraction, jealousy, and strong fears around being abandoned (Collins & Read, 1990; Hazan & Shaver, 1987). These adult behaviors are often described as "clingy" and reflect the hyperactivating strategies seen in infancy.

In contrast, infants whose caregivers are routinely unavailable, cold, rejecting, or abusive, develop the strategy of deactivating their attachment system because they anticipate that their caregivers will not provide a sense of security. Their negative working model about others leads them to cease proximity-seeking as a regulation strategy, and to avoid attachment relationships together with the rejection and conflict that are likely to come with them. Their positive working model of self allows them to rely on themselves for the needed sense of security. These infants develop an exaggeratedly independent, *dismissing* attachment style. In adult romantic relationships, dismissing individuals fear intimacy and are uncomfortable with closeness. They experience boredom and disgust with intimate partners, and do not fear being abandoned (Collins & Read, 1990; Hazan & Shaver, 1987; Tidwell et al., 1996).

Finally, caregivers who are perceived as frightening and who thus trigger attachment needs, but who are unreliable sources of reassurance, tend to spur infants' formation of negative working models about both self and others. These infants experience high levels of both anxiety and avoidance, and tend to develop a *fearful* attachment style. Rather than deactivating their entire attachment system, infants and adults with a fearful attachment style instead deactivate expression of attachment needs out of a fear of rejection and disappointment while still experiencing a desire for proximity, reassurance, and the meeting of esteem needs that sometimes hyperactivates the attachment system (Bartholomew & Horowitz, 1991; Collins & Read, 1990; Domingue & Mollen, 2009; Hazan & Shaver, 1987). Regarding sexual behavior, fearful avoidance was associated with having a higher number of sexual partners and with a greater likelihood of accepting a solicitation for sex from a partner (Favez & Tissot, 2019).

Fuendeling's (1998) review found systematic variation in emotion regulation strategies between different adult attachment styles that reflect the early hyperactivating and deactivating strategies seen in infants. For example, people with a preoccupied style tended to pay a great deal of attention to emotions, particularly negative emotions, and were highest of the attachment styles in their appraisals of threat. This pattern makes sense given their hypervigilance toward their attachment figure in order to assess the likelihood of proximity, reassurance, and security. In contrast, those with a dismissing style paid very little attention to emotions and had high appraisals of threat, but not as high as the preoccupied group. Lower attention to emotions would be part of the strategy of deactivating the attachment system, and appraisals of threat would be expected given their negative working model of others. In contrast, securely attached individuals had low appraisals of threat (Fuendeling, 1998).

Before examining links between adult attachment and emotional intelligence (EI), we must first turn to the controversy about how to define and operationalize EI. Proponents of the *ability* model argue that emotional intelligence is a type of standard intelligence similar to verbal or quantitative intelligence. From this perspective, emotional intelligence represents emotional abilities that can be measured by objective, maximum performance tests with correct and incorrect answers. For example, one type of test designed to measure ability at understanding emotions is the blends task, in which respondents must correctly identify which two emotions combine to form another emotion, such as envy and aggression combining into malice (Mayer et al., 2003). In contrast, trait EI theory has argued that the subjective nature of emotions makes it impossible to objectively operationalize them, and that the scoring methods for ability EI tests – the determination of what constitutes a correct answer by means of popular consensus among lay people or among subject matter experts on emotion – are fraught with problems (see Petrides, 2011, for an overview). Instead, trait EI theory has conceptualized emotional intelligence as a cross-trait constellation of personality facets that are measured through inherently subjective self-reported self-concepts, dispositions, and perceptions of typical behavior around emotional abilities, rather than via tests of maximum performance (Petrides, 2011; Petrides et al., 2007). As such, another term for trait EI is *trait emotional self-efficacy* (Petrides, 2011). The trait EI model guided conceptualization of the path model in the current study.

Despite these differences in the conceptualization of EI, Altaras Dimitrijević et al. (2020) found systematic differences among the four attachment styles in both ability and trait EI in terms of the degree to which attachment style was associated with greater EI. Secure attachment (i.e., low attachment anxiety and avoidance) was associated with higher emotional intelligence than fearful attachment, which combines high levels of both anxiety and avoidance. Dismissing

attachment was also associated with higher emotional intelligence than fearful attachment, as was preoccupied attachment, and although the differences between dismissing and preoccupied individuals were fewer, dismissing individuals scored higher than preoccupied individuals when the difference was significant. Where ability and trait EI differed in their relationship with attachment was in the size of their correlations with attachment when it was conceptualized as dimensions of anxiety and avoidance rather than as discrete styles. Both anxiety and avoidance were more strongly correlated with trait EI than with ability EI, and anxiety was the stronger predictor of the two in both cases (Altaras Dimitrijević et al., 2020).

The treatment of emotional intelligence and emotion regulation as parallel first-stage mediators in the current study (Figure 1) is supported by similarities in their conceptualization. Evidence suggests that emotion regulation deficits could be a common element underlying a range of maladaptive behaviors that could be considered aspects of the emotional self-efficacy that represents EI (Gross & Muñoz, 1995). In a clear cross-pollination of concepts, the measure of emotional intelligence used in the current research includes a subscale called “mood repair” that represents skill at emotion regulation (Salovey et al., 1995). Furthermore, conceptualizing individual differences in emotion regulation as an aspect of emotional intelligence, and integrating the separate traditions investigating the two constructs, was an explicit goal of a meta-analysis (Peña-Sarrionandia et al., 2015). Findings from this meta-analysis were framed in terms of Gross’s (1998) process model, and suggested that individuals high in emotional intelligence tended to flexibly engage in effective emotion regulation strategies quite soon in the trajectory of the experience of emotion, so there is evidence that these two constructs vary together in predictable ways.

Contributions of Emotional Intelligence and Emotion Regulation to Life Satisfaction

A growing body of literature has linked emotional intelligence and emotion regulation with life satisfaction (paths *g* and *h* in Figure 1). Emotional intelligence has been shown to predict life satisfaction even when the effect of other variables is taken into account. For example, Extremera et al. (2009) found that the emotional clarity aspect of EI predicted life satisfaction even when optimism and stress were controlled. Emotional clarity also predicted life satisfaction above and beyond the interfering effects of transient depressive mood and neuroticism (Extremera & Fernández-Berrocal, 2005). Other researchers have found that the mood repair aspect of EI is most predictive of life satisfaction when controlling for positive and negative affect, the other elements of the tri-partite model of SWB (Thompson et al., 2007). Emotional intelligence also serves as a mediator between predictors of life satisfaction and life satisfaction itself, as well as other measures related to well-being. Relationships mediated by emotional intelligence include those between mindfulness, positive affect, and life satisfaction (Schutte and Malouff, 2011), and perfectionism, depression, anxiety, stress, and life satisfaction (Smith et al., 2015).

Some of the strongest evidence for the link between emotion regulation and life satisfaction comes from studies of specific emotion regulation strategies, specifically, the contrasting strategies of reappraisal and suppression. Reappraisal was positively related, but suppression was negatively related, to measures of life satisfaction, self-esteem, optimism, and the six well-being domains of environmental mastery, autonomy, personal growth, purpose in life, self-acceptance, and positive relations with others (Gross & John, 2003). In contrast, depression was significantly positively related to suppression, but negatively related to reappraisal (Gross & John, 2003). Also, particularly relevant for the emotion regulation strategy

of deactivating the attachment system seen with high avoidance, suppressing emotional expression does not necessarily reduce the experience of having the negative emotions, a consequence borne out by increased blood pressure and electrodermal activation (John & Gross, 2004). Furthermore, memory for information presented during suppression efforts was impaired and interpersonal processes were disrupted when individuals appeared to be avoidant and failed to make appropriate emotional responses (John & Gross, 2004). Such consequences may impinge on life satisfaction.

Adult Attachment and Dispositional Resilience

The definition of resilience has been a topic of considerable debate. At least three main conceptualizations of resilience exist in the literature: That resilience is a personality trait (e.g., Bartone et al., 2008; Connor & Davidson, 2003; Ong et al., 2006), a process (e.g., Fergus & Zimmerman, 2005; Luthar et al., 2000), or an outcome (e.g., Mancini & Bonanno, 2009; Masten, 2001). For purposes of this study, resilience is operationalized as dispositional resilience, also known as hardiness, which is generally considered a personality trait with three aspects: commitment, control, and challenge (Bartone et al., 2008; Kobasa, 1979). Hardy individuals possess a personal belief system that allows them to perceive stressful situations as interesting and meaningful, and which gives them a strong sense of *Commitment* to and involvement in their work, their social environment, and their own sense of purpose, values, goals, and priorities. This sense of commitment provides them with the inner and outer resources to accurately assess threats and to competently handle them alone or to turn to social support when needed. Hardy individuals also demonstrate a strong sense of personal *Control* over – and the motivation to effectively utilize – their ability to make decisions regarding how to cognitively and behaviorally handle stressful events in ways that deactivate the stressors' disruptive effects, rather than feeling

helpless and powerless. In other words, they tend to believe that stressors are changeable, and they have a high sense of control over their experience of stressors. Finally, hardy individuals entertain a perspective on change and novelty as being an interesting *Challenge* rather than a threat, which empowers them to practice cognitive flexibility in the face of the unexpected, to value and seek out new experiences and to explore their environments for new possible resources to integrate, and to endure in the face of extreme hardship. That is, hardy individuals are open to perceiving change and new experiences as a normal – if challenging – part of life that provide opportunities for growth (Bartone, n.d.; Kobasa, 1979).

Studies investigating attachment quality and dispositional resilience (path *d* in Figure 1) showed that secure attachment was positively correlated, and avoidant and preoccupied attachment were negatively correlated, with resilience (Naderi et al., 2016; Neria et al., 2001). In one study, the authors had predicted that an avoidant attachment style would be positively correlated with overall hardiness and with the control dimension in particular, given avoidantly attached individuals' positive working model about the self and their strong sense of self-reliance and their ability to distance themselves from their emotions, but their findings contradicted this expectation, highlighting instead the overall insecure nature of people high in attachment avoidance (Neria et al., 2001). In group comparisons, securely attached individuals were significantly higher in overall hardiness and its dimensions than all three insecure styles, and individuals with a fearful style were less hardy overall than those with a dismissive style (Escolas et al., 2014). Both attachment anxiety and avoidance also emerged as significant regression predictors of hardiness and its dimensions (Escolas et al., 2014).

The Capacity for Affect Management and Dispositional Resilience

The theoretical and empirical evidence suggesting that emotional intelligence and emotion regulation are closely tied to attachment quality – that emotion regulation is, indeed, a function of the attachment system – combined with the just-described links between attachment quality and resilience, suggest that resilience could be linked to emotional intelligence and emotion regulation as well (paths *e* and *f* in Figure 1). In a sample of Canadian emerging adult undergraduate students undergoing the potentially challenging transition to adulthood, Prince-Embury et al. (2017) found that trait EI was positively associated, but stress, anxiety, and depression were negatively associated, with resilience protective factors – a sense of mastery and a sense of relatedness – as were life satisfaction and psychological flourishing. The opposite relationships held for the emotional reactivity vulnerability factor of resilience. That is, people who scored lower on trait EI were more emotionally sensitive, took longer to recover from emotional upset, and were more impaired by their upset, indicating vulnerability rather than resilience, than people with higher trait EI, and vice versa. Another study found similar correlations between trait EI and resilience, and also found that trait EI predicted resilience even after accounting for the variance explained by personality (Di Fabio & Saklofske, 2018). Among the personality factors that predicted resilience, the neuroticism/emotional stability factor was the strongest predictor, implying a central role for affect management in resilience, echoing the vulnerability factor finding in Prince-Embury et al. (2017). Returning briefly to the debate about trait vs. ability EI, Di Fabio and Saklofske (2014) found that trait EI, but not ability EI, explained variance in resilience beyond that explained by personality factors.

Just as there is evidence that the specific emotion regulation strategy of reappraisal is linked to life satisfaction, reappraisal is also linked to dispositional resilience, explaining

additional variance in resilience even after accounting for ability EI scores (Mestre et al., 2017). Thomas and Zolkoski (2020) found that reappraisal was associated with higher resilience in undergraduate students. They also found that students high in emotional intelligence were more likely to use reappraisal as an emotion regulation strategy than students lower in emotional intelligence, demonstrating the close ties between emotional intelligence and emotion regulation. Taken together, the evidence supports a conclusion that trait EI and emotion regulation are important factors related to resilience.

Dispositional Resilience and Life Satisfaction

The final link in the path diagram (path *i* in Figure 1) explores the proximal, positive association between dispositional resilience and life satisfaction. Dispositional resilience correlated positively with positive affect and negatively with negative affect, which are two of the three aspects of subjective well-being and stand in for life satisfaction; dispositional resilience also predicted both positive and negative affect above and beyond five-factor personality traits (Kardum et al., 2012). In a sample of widows, dispositional resilience was positively associated with life satisfaction and both mediated and moderated the relationship between perceived stress and life satisfaction (Rossi et al., 2007). That is, despite the common impression that stressful events are debilitating in themselves, in this study the effect of perceived stress on life satisfaction was not direct, but rather depended on the widows' degree of dispositional resilience. In a different line of inquiry, resting state fMRI images of brain regions associated with self-reported resilience in healthy university students were found to mediate between self-reported resilience and life satisfaction (Kong et al., 2015).

A meta-analysis, which included 60 studies, 111 effect sizes, and 68,720 participants, found evidence of a relationship between trait resilience and life satisfaction (Hu et al., 2015).

Specifically, both the correlation between trait resilience and negative indicators of mental health – depression, anxiety, and negative affect – as well as the correlation between trait resilience and positive indicators of mental health – life satisfaction and positive affect – produced medium effect sizes. Of the 16 independent samples reporting a correlation between trait resilience and life satisfaction, the correlation ranged from .15 to .62. This study also reported that the relationship between trait resilience and mental health was moderated by several factors. A weaker effect was observed for men than women, and for people who were not experiencing adversity compared to those who were. These moderating effects are an indication of the complexity involved in predicting life satisfaction. Despite these complexities, evidence supports a significant and strong link between resilience and life satisfaction.

Emotional Intelligence, Emotion Regulation, and Dispositional Resilience as Mediators of the Link Between Adult Attachment and Life Satisfaction

Evidence previously reviewed suggests that life satisfaction is systematically associated with the quality of adult attachment security. This association may be serially mediated by emotional intelligence, emotion regulation, and dispositional resilience in the two-stage parallel and serial model shown in Figure 1. Besides the direct links already reviewed, combined component paths of this model have been investigated in previous research. For example, trait EI was found to exert an indirect effect on life satisfaction through "affect balance" (the difference between positive affect and negative affect scores) as well as through a mediation chain of resilience and affect balance (Liu et al., 2013). This study also reported the indirect effect of resilience in the relationship between trait EI and affect balance. Other research showed that resilience had an indirect effect on the association between both secure and preoccupied attachment styles and quality of life (Naderi et al., 2016).

Attachment anxiety and avoidance were found to be related to university students' life satisfaction, and, separately, individuals high in resilience were more satisfied with their lives than individuals low in resilience (Tepeli Temiz & Tari Comert, 2018). However, unexpectedly, attachment was not related to resilience, although this may have been due to the loss of statistical power incurred by splitting continuous data into categories for analysis. Thus, findings of this study are inconclusive, and further work needs to be done to understand these relationships. Among Israeli melanoma survivors, greater hardiness was associated with higher well-being and lower distress, and those with secure and dismissing attachment styles experienced more well-being and less distress than preoccupied and fearful attachment styles (Hamama-Raz & Solomon, 2006). Attachment anxiety and avoidance accounted for the largest increment of variance explained in both well-being and distress, followed in size by primary (threat and challenge) and secondary (subjective ability to cope) cognitive appraisal and hardiness (Hamama-Raz & Solomon, 2006). Although their study included most of the variables in the current research (i.e., the effect of attachment, hardiness, and cognitive appraisal – which occurs as an emotion regulation process – on well-being), they did not test for mediational pathways between these variables, so there is still work needed to assess these constructs comprehensively.

Current Study

The current study proposes to investigate the causal model in Figure 1. Adult attachment serves as the primary causal input variable, followed in parallel by emotional intelligence and emotion regulation, which are in turn followed serially by dispositional resilience in a combined parallel plus two-stage serial mediation process. Karreman and Vingerhoets (2012) tested a mediational model incorporating nearly the same variables as the present study in a similar configuration. However, they used different operationalizations of all the constructs, tested a

mediation model in which emotion regulation and resilience were parallel rather than serial mediators (i.e., having independent mediating effects rather than effects linked in a causal chain), and drew their sample from adult listeners of a radio music program in a study on music and emotion. They found that those with secure attachment were more likely to reappraise and showed more resilience, and that these variables together had an indirect effect on well-being. In contrast, those with preoccupied attachment experienced lower well-being through being less likely to reappraise and showing lower resilience. However, contrary to expectations, both dismissing and fearful attachment styles, like a secure attachment style, were positively associated with well-being through higher use of reappraisal and higher resilience. Resilience was the strongest predictor of well-being, unlike the Hamama-Raz and Solomon (2006) study in which attachment style was a stronger predictor than hardiness. Emotional suppression did not have any significant effect in the model for all attachment styles (Karreman & Vingerhoets, 2012). Given these unexpected and partly inconsistent findings, it is worth exploring these relationships again.

The goal of the present study is to explore the mediation model shown in Figure 1 and offers several advantages. Adult attachment is operationalized as two orthogonal dimensions rather than categorical groups, consistent with the overwhelming weight of evidence (for a review, see Mikulincer & Shaver, 2016). The parallel and serial mediation model proposed for the present study offers a complex examination of the interplay between variables. Of note, serial mediation does not necessarily imply a long duration passage of time, such as months or years, which could only be investigated with a longitudinal study. Rather, this study examines the serial impact of one set of mediators upon a subsequent mediator. Given that adult attachment quality may be difficult to alter, it is important to examine mediating variables such as emotion

regulation and resilience that may be more amenable to psycho-educational interventions (Mallinckrodt, in press). To address these questions, this study has exploratory goals. I anticipate identifying different patterns of mediation for attachment avoidance, attachment anxiety, and their interaction as a proxy for the secure-fearful axis of attachment quality. In the research from which Brennan et al. (1998) developed the Experiences in Close Relationships (ECR) scale, the authors included this interaction term in regression analyses to explain variance in other constructs relevant to romantic attachment, but did not describe it or compare its contribution to the unique contributions of anxiety and avoidance, so it deserves exploration. Identifying different mediation patterns could help people with different degrees of attachment anxiety and avoidance to understand what might constitute more effective routes for improving their life satisfaction despite insecure attachment quality.

Method

Participants

The researchers who collected these archival data (Jeong et al., in press) recruited a convenience sample of 130 undergraduates from their psychology department's human subjects research pool at a large public university in the southeastern US. Data were collected during midterms week (mid-October, 2015) from students who were at least 18 years old and classified as first-year students in their first semester of college. Transfer students were excluded, based on the rationale that the first two months of college presented the adult version of Ainsworth's stressful "strange situation" of being separated from an attachment figure for students adjusting to the transition to living apart from their parents. Of the 130 initial participants, four were excluded due to indications of inattentive responding, and two others were excluded as multivariate outliers (details of this screening are described in the Results section).

Of the remaining 124 participants, 72 (58.1%) were women and 52 (41.9%) were men. Their mean age was 18.71 years (*SD* = 1.44), although this mean does not include 13 participants who did not report their age. With regard to ethnic identification, 103 (83.1%) reported "Caucasian European American," 8 (6.5%) "African American," 6 (4.8%) "Asian American," 4 (3.2%) "more than one," 2 (1.6%) "other not listed," and 1 (0.8%) Hispanic. Participants received course credit toward their grade and a $10 Amazon.com gift card as a participation incentive. This study was approved by the Institutional Review Board of the university.

Measures

Adult Attachment Quality

The Experiences in Close Relationships scale (ECR; Brennan et al., 1998) consists of 36 items apportioned into two, 18-item subscales designed to measure attachment Anxiety (e.g., "I worry that romantic partners won't care about me as much as I care about them.") and Avoidance (e.g., "I get uncomfortable when a romantic partner wants to be very close.") in adults. The instructions ask participants to respond using a 7-point Likert-type scale in which 1 = *Disagree strongly*, 2 = *Disagree somewhat*, 3 = *Disagree slightly*, 4 = *Neutral/mixed*, 5 = *Agree slightly*, 6 = *Agree somewhat*, and 7 = *Agree strongly*. Higher scores indicate stronger endorsement of the construct (either anxiety or avoidance). To establish construct and predictive validity, Brennan et al. (1998) compared the ECR to Bartholomew and Horowitz's (1991) categorical Relationship Questionnaire and found that the ECR discriminated more precisely between insecure styles when its data were converted to categories using cluster analysis. The ECR accounted for a notably greater amount of variance in attachment dimensions and other constructs relevant to romantic relationships than the older, established measure. These results supported the argument that the ECR scale was a valid measure of adult attachment (Brennan et al., 1998). In a sample of

US psychology undergraduate students, Brennan et al. (1998) reported internal consistency alpha coefficients for the Anxiety and Avoidance subscales of .91 and .94, respectively. Retest reliabilities (3-week interval) for both subscales were .70 (Brennan et al., 2000). Internal reliabilities in the current sample were $\alpha = .92$ and $\alpha = .93$, respectively.

Trait Emotional Intelligence

The Trait Meta-Mood Scale (TMMS; Salovey et al., 1995) is a 30-item self-report measure that identifies relatively stable individual differences in skillfulness with the capacity to disclose one's feelings to oneself and others. The authors did not develop the TMMS to assign respondents an emotional IQ score, but rather to explore individual differences in three subscales of emotional intelligence: paying focused *Attention* to one's feelings (13 items, e.g., "I pay a lot of attention to how I feel."), having accurate *Clarity* about what one is feeling (11 items, e.g., "I almost always know exactly how I am feeling."), and addressing the need to maintain pleasant moods or *Repair* unpleasant ones (6 items, e.g., "I try to think good thoughts no matter how badly I feel."). Participants respond on a 5-point Likert-type scale (1 = *strongly disagree*, 2 = *somewhat disagree*, 3 = *neither agree nor disagree*, 4 = *somewhat agree*, 5 = *strongly agree*) with higher scores representing greater trait emotional intelligence in the subscale's domain; total scores are not reported. The authors' (1995) confirmatory factor analysis demonstrated that the TMMS had good construct validity, and correlations with a variety of similar measures indicated good convergent validity. However, some questions were raised about the distinctiveness of the Repair subscale from general self-reports of optimism. In a sample of undergraduate psychology students, Salovey et al. (1995) found the internal consistency to be $\alpha = .86$, .88, and .82 for the Attention, Clarity, and Repair subscales, respectively. Reliabilities obtained from the current sample were .79, .85, and .79, respectively.

Emotion Regulation

Gratz and Roemer (2004) developed the Difficulties in Emotion Regulation Scale (DERS) to assess emotion regulation deficits in adults. Rather than conceptualizing emotion regulation as controlling or eliminating the experience and expression of negative emotion, they adopted the perspective that emotions serve a functional purpose, and that accepting, experiencing, and expressing – rather than suppressing or avoiding – emotions can be valuable for emotional health. With this in mind, they refrained from assigning value judgments to emotion regulation behaviors, acknowledged that what constitutes effective emotion regulation is often context-specific, and recognized that adaptive flexibility in strategy selection is important. The DERS consists of 36 self-report items assigned to six factors: (a) Nonacceptance of Emotional Responses (*Nonacceptance*; 6 items, e.g., "When I'm upset, I feel ashamed at myself for feeling that way."); (b) Difficulties Engaging in Goal-Directed Behavior (*Goals*; 5 items, e.g., "When I'm upset, I have difficulty focusing on other things."); (c) Impulse Control Difficulties (*Impulse*; 6 items, e.g., "When I'm upset, I lose control over my behavior."); (d) Lack of Emotional Awareness (*Awareness*; 6 items, e.g., "I pay attention to how I feel," which is reverse-scored); (e) Limited Access to Emotion Regulation Strategies (*Strategies*; 8 items, e.g., "When I'm upset, I believe that wallowing in it is all I can do."); and (f) Lack of Emotional Clarity (*Clarity*; 5 items, e.g., "I have no idea how I am feeling."). Respondents use a 5-point scale to indicate how frequently the item applies to them, with 1 = *almost never*, 2 = *sometimes*, 3 = *about half the time*, 4 = *most of the time*, and 5 = *almost always*. Higher scores indicate greater difficulty with emotion regulation. Gratz and Roemer (2004) reported construct validity in the original sample in the form of statistically significant correlations in the expected directions between the DERS and measures of emotion regulation, experiential avoidance, and emotional

expressivity. In a sample of undergraduate psychology students, Cronbach's α for the overall DERS was .93, and was above .80 for all subscales (Gratz & Romer, 2004). In the current sample, α was .88, .86, .86, .79, .84, and .83, for the Nonacceptance, Goals, Impulse, Awareness, Strategies, and Clarity subscales, respectively. Test-retest reliability over a four- to eight-week period for a general sample of university students was ρ_I = .88 for the overall DERS score, and .69, .69, .57, .68, .89, and .80 for the Nonacceptance, Goals, Impulse, Awareness, Strategies, and Clarity subscales, respectively.

Dispositional Resilience

Bartone (1995, 2007, 2013) developed a 15-item self-report measure of hardiness, the Dispositional Resilience Scale-15 (DRS-15), based on Kobasa's (1979) tripartite conceptualization of hardiness as a personality trait that aided people in remaining healthy under stressful conditions. Three subscales of five items each assess: Commitment (e.g., "Most days, life is really interesting and exciting for me."), Control (e.g., "How things go in my life depends on my own actions."), and Challenge (e.g., "Changes in routine are interesting to me."). Participants respond using a 4-point rating scale where 0 = *not at all true*, 1 = *a little true*, 2 = *quite true*, and 3 = *completely true* (Bartone, 1995; 2013). Scores are summed for an overall dispositional resilience score and for each subscale. Higher scores indicate greater hardiness or dispositional resilience. Bartone (2007) evaluated the 3-week test-retest reliability of the DRS-15 in a sample of West Point Military Academy first-year students. The coefficients were .75, .58, and .81 for the Commitment, Control, and Challenge subscales, respectively, and .78 for overall hardiness. The 15-item measure correlated r = .84 with the 30-item version of the DRS, thus exhibiting consistency with a prior validated version (Bartone, 2007). The psychometric properties of the DRS-15 were extensively examined in a sample of over 500 college athletes

(Madrigal et al., 2016). In this study, however, poor internal consistency was found for all three subscales (coefficient alphas ranged from .58 to .69), as well as poor fit of the three-factor structure. In the current sample, the internal consistencies were .70, .79, .72, and .82 for overall hardiness, Commitment, Control, and Challenge, respectively. The higher Cronbach's alpha for the Challenge subscale reflects the fact that item 9 had a very small, negative item-total correlation and was removed.

Life Satisfaction

The Satisfaction With Life Scale (SWLS; Diener et al., 1985) is a five-item, single-factor measure of people's subjective cognitive judgments about their global sense of satisfaction with their lives, rather than about satisfaction with any particular domain of life such as one's health, relationships, or career. The SWLS intentionally excludes items with an affective component, because positive and negative affect are the other dimensions of the tripartite model of SWB, so life satisfaction should not include variance from affect in the construct. Respondents indicate the degree to which they agree or disagree with the items on a 7-point scale in which 1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly disagree*, 4 = *neither agree nor disagree*, 5 = *slightly agree*, 6 = *agree*, and 7 = *strongly agree*. Higher scores indicate higher life satisfaction. Evidence for establishing construct validity was seen in moderately strong correlations with other well-being measures, and in the fact that higher SWLS scores predicted good personality adjustment and lack of symptomatology in an undergraduate sample (Diener et al., 1985). Furthermore, the global life satisfaction measured by the SWLS correlated $r = .57$ with a score of summed domain satisfactions, indicating that global and composite domain satisfaction are overlapping but not interchangeable constructs. Internal consistency in a Midwest US undergraduate psychology

student sample was α = .87, and the two-month test-retest correlation coefficient was .82 (Diener et al., 1985). The current sample had a Cronbach's α = .84.

Procedure

This project used archival data collected as part of a larger project to investigate stress, coping, and dropout in first-time, first-year college students. Data collected, but not analyzed as part of the present study, include salivary cortisol as well as self-report measures of perceived stress, psychological distress, and stressful life events. Participants reported to a classroom at 8:30 a.m. where they received a survey packet containing the consent form, the self-report survey instruments, and a 50 mL test tube for the collection of saliva. Participants read and signed the consent form, and then provided a saliva sample, which the researchers collected and stored on ice for later analyses in the original study. Finally, participants completed the survey. If participants finished early, they were asked to remain seated until the allotted 50 minutes had passed for the convenience of other students, then they turned in their survey packet, and the researchers supplied them with a debriefing form.

Research Design and Primary Data Analyses

The current study used archival, correlational data to test the two-stage parallel and serial mediation model shown in Figure 1 with subscales of self-reported trait emotional intelligence and difficulties in emotion regulation serving as parallel first-stage mediators and dispositional resilience as the serial second-stage mediator. Hayes' (2021) PROCESS macro for SPSS, Model 80, tested mediation with a single omnibus analysis by calculating and testing direct and indirect effects for significance through independent samples *t*-tests and bootstrapped confidence intervals, respectively. An indirect effect was deemed statistically significant when the confidence interval excluded zero (Hayes, 2017).

Note that the model shown in Figure 1 was analyzed separately with three different input variables: (a) the Anxiety subscale of the ECR for adult attachment; (b) the Avoidance subscale of the ECR for adult attachment; and (c) the multiplicative product of Anxiety × Avoidance, labeled in this paper as the "Secure-Fearful" axis. Brennan et al. (1998) included this interaction term as a predictor along with Anxiety and Avoidance in their regression analyses, but did not describe it. The third analysis in the present study examined the product of anxiety × avoidance as a conceptual index anchored at one pole by individuals with relatively secure adult attachment and the absence of both avoidance and anxiety; and anchored at the other pole by individuals with a fearful attachment style characterized by both anxiety and avoidance. Inclusion of this product term allowed exploration of negative synergies when both anxiety and avoidance are present together, and positive synergies when both anxiety and avoidance are relatively low.

Results

Preliminary Analyses

Data Screening and Descriptive Statistics

All analyses in the study utilized IBM SPSS Statistics (Version 27). The first set of preliminary analyses consisted of data screening for inattentive responding, missing data, multivariate outliers, and internal consistency. Of the 130 initial participants, four were excluded for inattentive responding, as determined by invalid responses to one or more of four validity check questions (e.g., "Please code a 5 for this item"; "Please leave this item blank"). With regard to missing data, overall, only 0.23% of items were missing from the data set. The majority of participants, 87.7%, were not missing any data. Of the 16 participants who were missing responses to items measuring variables in the model, all but one were missing fewer than 4% of their responses (one, two, or four items); the one exception was missing 12.3% (15 items). No

participants were missing more than 20% of their data, so no one was excluded on this basis. Therefore, missing values for 126 participants were imputed using the SPSS expectation-maximization procedure. When data were estimated for all variables in the model together, Little's test was not significant, χ^2 (df = 1631) = 1649.86, p = .367, consistent with a pattern of data missing completely at random (MCAR)[1]. Two additional participants were excluded as multivariate outliers for statistically significant chi-square tests of Mahalanobis distance (p < .001) using methods suggested by Tabachnick and Fidell (2019) based on the 15 variables included in the path model (excluding Secure-Fearful and DRS-15 Total, since their variance was already represented by the variables of which they were composites). The missing data were re-imputed excluding these two outliers so that their data did not affect the imputed values, and no new outliers were identified following this procedure. The final sample consisted of 124 participants.

Table 2 presents the mean, standard deviation, range, Cronbach's alpha, skew, and kurtosis values for the variables in the model. Values for skew between –2 and +2, and for kurtosis between –7 and +7, are considered acceptable (Byrne, 2010). All values for skew and kurtosis fall within these guidelines, so no transformations of the data were performed.

An examination of bivariate correlations between subscales of the two first-stage mediators, the TMMS and the DERS, determined that the DERS Awareness and Clarity subscales were essentially redundant with the TMMS Attention and Clarity subscales (r's ≥ .69; see Table 3). The subscales in each redundant pair were nearly equivalent in internal consistency (see Table 2). Therefore, the two DERS subscales from each redundant pair were excluded to

[1] When Misa ran the missing data estimation, some of the imputed values were far outside the theoretical range of values for the measure. Data were re-imputed separately for each measure, some of which resulted in significant Little's tests, but which also produced fewer and smaller out-of-range imputations. These were recoded to the closest in-range value prior to proceeding with the analyses.

equalize the number of remaining subscales in the two measures (three TMMS subscales, four DERS subscales).

A MANOVA examined sex differences on all variables in the model and found no significant overall differences, $F(13, 110) = 1.423$, $p = 0.16$, $h^2 = 0.14$. Nevertheless, examination of the univariate comparisons revealed that men ($M = 3.69$, $SD = 0.47$) scored lower than women ($M = 3.91$, $SD = 0.50$) regarding Attention to Feelings (a TMMS subscale), $F(1, 122) = 5.470$, $p = .021$, $h^2 = 0.04$. However, no other sex differences were statistically significant. Therefore, sex was not examined as a possible moderator of the mediation effects in subsequent analyses.

A median split was performed on the Anxiety (median = 3.50) and Avoidance (median = 2.93) scales in order to allow assignment to the four traditional attachment styles. Applying these splits resulted in the following groupings: Secure ($n = 33$, 26.6%), Preoccupied ($n = 29$, 23.4%), Dismissing ($n = 28$, 22.6%), and Fearful ($n = 34$, 27.4%). Figure 2 shows a scatterplot of Avoidance by Anxiety scores with the medians indicated and the attachment style categories labeled.

Bivariate Correlations

Bivariate correlations between variables in the model are shown in Table 3. Regarding the primary input variables of the proposed path model, the first column of Table 3 shows that Adult Attachment Anxiety was significantly negatively correlated with perceived trait emotional intelligence (i.e., TMMS) Clarity and Repair, and significantly positively correlated with all four aspects of affect regulation difficulties (i.e., DERS subscales) that were used in the analyses. Attachment Anxiety was also significantly negatively correlated with overall dispositional resilience (i.e., total DRS-15 scale score), as well as with the DRS-15 Commitment subscale, and

with life satisfaction. The second column of Table 3 reports correlations for the second primary input variable, Adult Attachment Avoidance, which was significantly negatively correlated with the perceived trait emotional intelligence subscales of Clarity and Attention, and positively associated with the Nonacceptance, Goals, and Strategies subscales of the DERS. Attachment Avoidance was also significantly negatively correlated with the Commitment subscale for dispositional resilience, as well as with life satisfaction. The third and final input variable, the Secure-Fearful axis, exhibited a pattern of correlations very similar to Adult Attachment Anxiety.

Table 3 shows that all correlations involving the Control and Challenge subscales of the second-stage mediator, dispositional resilience, were $r < .20$. In fact, excluding the total DRS-15 score, of the 32 correlations between these two subscales and other variables in the model—including other DRS-15 subscales—only three correlations were statistically significant: Control with TMMS Clarity, $r = .18$, $p < .05$; Control with DERS Clarity, which was excluded from analyses, $r = –.19$, $p < .05$; and Challenge with TMMS Repair, $r = .19$, $p < .05$. Consequently, the Control and Challenge subscales were excluded from further analyses. The total DRS-15 scale score was also excluded because it contained these two largely orthogonal subscales, and correlated $r = .69$ at $p < .001$ with Commitment. Therefore, only the Commitment subscale was retained as the most reliable available indicator of dispositional resilience.

The primary outcome variable in the path model was life satisfaction. An examination of the bottom row of Table 3 reveals that it was significantly negatively correlated with all aspects of attachment insecurity, positively correlated with the trait emotional intelligence qualities of clarity and repair, negatively correlated with all aspects of difficulty with emotion regulation, and positively correlated with dispositional resilience commitment and total score.

Exploration of the Mediation Path Model

Mediation analyses used the PROCESS macro (Version 3.53) for SPSS developed by Hayes (2021). In accordance with Long and Ervin (2000) and Hayes and Cai (2007), heteroscedasticity-consistent covariance matrix estimator HC3 was used in computations utilizing the standard error, and is denoted with "(HC3)" where appropriate. HC3 reduces the risk of Type I error in samples with fewer than 250 participants, and performs about as well whether the assumption of homoscedasticity is met or not, and about as well as the ordinary least squares covariate matrix (OLSCM) does when errors are homoscedastic. Therefore, both sets of authors recommend routinely using one of a family of heteroscedasticity-consistent covariance matrix estimators when conducting OLS regression, and HC3 was found to perform the best (Long & Ervin, 2000).

Model 80 from Hayes' (2017) PROCESS macro was used to examine the mediation model proposed in this study. However, Model 80 imposes a limitation of a maximum of six mediators, only one of which could be a second-stage mediator. To accommodate this limitation, mediation analyses required separate tests with the three subscales for emotional intelligence or the four non-redundant subscales for emotion regulation difficulties as the parallel first stage mediators, and the resilient Commitment subscale as the second stage mediator, for each of the three input variables. The direct and total indirect effects results of these six tests are shown in Table 4. Adult Attachment Anxiety and the Secure-Fearful axis both had a significant direct effect through the TMMS subscales on life satisfaction, and five of the six total indirect effects paths were significant. However, since the total indirect effects are the sum of the specific indirect effects, which may contain both positive and negative effects that cancel each other out (Hayes, 2017), the significance of the total indirect effect paths is deemphasized in this report.

Indirect Effects

PROCESS analyzes indirect effects by empirically generating a sampling distribution to construct a confidence interval for the effect (Hayes, 2017). The original sample becomes a representation of the population, and samples are drawn from it with replacement in an iterative process called *bootstrapping* that uses ordinary least squares regression to estimate the coefficients for the indirect effects. In simple mediation, the indirect effect is the product of (*a*) the path coefficient from the independent variable to the mediator and (*b*) the path coefficient from the mediator to the outcome variable. In the multiple mediator model used for this study, additional paths between mediators become additional terms in the calculated product. The resulting estimates of the indirect effect are sorted low to high to create the lower and upper limits of the confidence interval at the percentiles calculated to produce the specified confidence interval, e.g., 95%. The point estimate of the indirect effect is considered to be statistically significant if its confidence interval does not contain zero (Hayes, 2017). In the current research, 10,000 bootstrap resamples were used to estimate the confidence intervals.

The specific indirect effects for each of the three input variables are reported in Tables 5 – 7. For Adult Attachment Anxiety, the emotional intelligence skill of Repair, and the resilience quality of Commitment, both individually and sequentially together, mediated the relationship with Life Satisfaction (Table 5). Believing that one does not have access to effective Strategies for emotion regulation, together sequentially with resilient Commitment, also mediated this relationship between Attachment Anxiety and Life Satisfaction (Table 5).

When Adult Attachment Avoidance was the input variable, the emotional intelligence skill of Clarity, together sequentially with resilient Commitment, mediated the relationship with Life Satisfaction (Table 6). The path from Avoidance to Life Satisfaction, like the path from

Anxiety to Life Satisfaction, was also mediated by the sequential lack of access to effective emotion regulation Strategies and resilient Commitment.

Finally, the Secure-Fearful axis was intended to represent the extent to which individuals express positive combinations of Anxiety and Avoidance (i.e., low × low scores for Secure; high × high scores for Fearful). For this Secure-Fearful axis, the same pattern emerged for the TMMS subscales as for Anxiety: trait EI Repair and resilient Commitment, individually and together sequentially, mediated the relationship with Life Satisfaction. In the context of the DERS subscales, the path through resilient Commitment by itself also became significant. As with both Anxiety and Avoidance, the sequential path through both DERS Strategies and resilient Commitment also demonstrated mediation. Each of the direct and indirect paths for all three input variables examined are depicted graphically in Figures 3 – 5, with coefficients also presented in Tables 8 – 13.

Discussion

The purpose of this study was to explore possible mediating effects in the relationship between adult attachment and life satisfaction. Based on theory and empirical evidence, aspects of emotional intelligence, emotion regulation, and dispositional resilience served as the potential mediators. Such mediators may be more amenable to change through interventions than adult attachment itself (Mallinckrodt, in press), so it is important to identify which specific mediators might serve as the most effective routes to target for improvement so that all people, regardless of their degree of attachment security, can learn to feel more satisfied with their lives.

To test the proposed model, for each of the three input variables (Attachment Anxiety, Attachment Avoidance, and the Secure-Fearful axis), 16 mediation linkages with well-being were investigated in a two-stage parallel and serial mediation model. Of these 48 total possible

mediation paths, 11 specific indirect effects were statistically significant; all 11 were negative in valence. Reference to the bivariate correlations (Table 3) informs interpretation of these findings. In general, it appears that aspects of trait emotional intelligence and resilient commitment serve as coping resources that ameliorate the negative effects of insecure attachment (i.e., attachment anxiety, avoidance, or both) on life satisfaction. Higher levels of these coping resources are associated with higher life satisfaction, and tend to mitigate the otherwise negative effects of attachment anxiety and avoidance on life satisfaction. The opposite is true for aspects of difficulties in emotion regulation; that is, to the extent these deficits in coping are present, they tend to exacerbate the negative impact of attachment anxiety and avoidance on life satisfaction.

Adult Attachment Anxiety

Table 5 shows the three significant mediation paths from (1) Anxiety through the first-stage mediator trait EI repair to life satisfaction, (2) Anxiety through the second-stage mediator resilient commitment to life satisfaction, and (3) Anxiety through trait EI repair and then through resilient commitment to life satisfaction. Both the trait EI repair and resilient commitment mediators were negatively correlated with anxiety and positively correlated with life satisfaction, and with each other (Table 3). This pattern is consistent with an ameliorating effect on the negative direct relationship between attachment anxiety and life satisfaction. In other words, people who believe themselves to be skilled at repairing a negative mood, or at maintaining a positive mood, are also more likely to be resiliently committed to their work and social life in ways that promote a sense of life satisfaction. Further, the negative correlations between attachment anxiety and trait EI repair, and between anxiety and resilient commitment, suggest that people with high attachment anxiety are more likely to lack these coping resources. However, people who are somehow able to develop skills at perceived trait EI repair and/or who

achieve resilient commitment, despite their higher level of attachment anxiety, appear to perceive higher life satisfaction. These findings imply that to the extent people believe in their ability to repair their mood, and/or experience increases in resilient commitment, the negative effects of high attachment anxiety on life satisfaction can be ameliorated. Repair and commitment appear to operate both together and also independently as positive coping resources. In practice, learning more effective strategies for managing one's mood could improve people's willingness to participate in social or work situations that were previously perceived as personally threatening and emotionally distressing. As their engagement increases with positive results, they may find that their resilient commitment to being engaged in various domains of their life also confers a greater sense of overall life satisfaction.

With regard to affect regulation deficits, the fourth significant mediation path shown in Table 5 suggests that believing one does not have access to effective emotion regulation strategies, paired with resilient commitment, also mediated the relationship between anxiety and life satisfaction. The pattern of valence in the paths suggests these two mediators had opposite effects rather than synergistic effects like the serial mediators had in the context of trait EI. Lack of confidence about having effective strategies for emotion regulation was positively correlated with attachment anxiety and thus exacerbated its negative effects, whereas resilient commitment was negatively correlated with both preceding variables in the serial path and thus had an ameliorative effect. When trait EI repair was the first-stage mediator instead of lack of access to emotion regulation strategies, resilient commitment received a boost from having repair skills, whereas it had to combat the additional negative influence of lacking effective emotion regulation strategies. Unlike repair and commitment in the context of trait EI, neither lack of

strategies nor resilient commitment in the context of emotion regulation difficulties was a significant mediator by itself.

Thus, when the focus is positive (i.e., belief in one's repair skills), the affect-related mediator is sufficient by itself to produce ameliorating effects, as well as working in combination with resilient Commitment. But when the focus is negative (i.e., difficulties with emotion regulation), then attachment anxiety prompts lack of access to emotion regulation strategies, which reduces resilient commitment, which then decreases a sense of life satisfaction. In other words, it is the effect of emotion regulation strategy deficits (the first mediator) on resilient commitment (the second mediator) that carries the effect of attachment anxiety to life satisfaction. In this case, both mediators work in combination to exert a net exacerbating or ameliorating influence on the negative effects of attachment anxiety on life satisfaction.

The finding that skill at emotional repair and having strategies for emotion regulation are important for people high in attachment anxiety is consistent with theory and research on adult attachment (Mikulincer & Florian, 2002). People who are high in attachment anxiety tend to engage in the secondary strategy of attachment system hyperactivation in the face of perceived threat in order to achieve security (Main, 1990). Put into the terms of the acute stress response, hyperactivation is characterized as a "fight" strategy with the goal of wresting support from close others – who are perceived as unacceptably unavailable and inattentive – through the use of heightened emotional displays of distress, clinging, controlling, pleading, demanding, intrusiveness, and hypervigilance (Berant et al., 2005; Mikulincer & Florian, 2002). However, these strategies tend to be less effective than those employed by securely attached individuals and can lead to secondary problems such as excessive focus and rumination on negative emotional states and preoccupation with relationships to the exclusion of other priorities. These

problems, in turn, can create a feedback loop of escalating distress, fear of abandonment, low self-worth, and judging that one is helpless to self-regulate emotions (Berant et al., 2005; Mikulincer & Florian, 2002). In terms of the coping literature, people high in attachment anxiety tend to utilize emotion-focused coping such as self-preoccupied rumination intended to cognitively understand and alleviate distress, which may or may not address the emotional effects of the problem but which leave the problem itself unresolved to spark new distress (Mikulincer & Florian, 2002).

Results of the current study are also consistent with empirical evidence about hyperactivation of the attachment system in individuals with high attachment anxiety. For example, self-reported attachment dimension scores were associated with coded Rorschach inkblot test correlates of unconscious processes involved in attachment-related anxiety such as difficulties in emotion regulation, helplessness, distress, and unworthiness – all of which constitute functional aspects of the hyperactivating strategy to elicit closeness and support from others (Berant et al., 2005). Likewise, in several studies utilizing "morph movies" of facial expressions gradually changing from emotional to neutral or from neutral to emotional, hyperactivation was operationalized as vigilance to affective cues measured by the time it took participants to indicate they detected a change of expression (Fraley et al., 2006). Individuals high in anxiety detected expression change sooner, thereby exhibiting higher sensitivity to both the onset and termination of emotional expressions relative to individuals lower in anxiety. However, when forced to make expression-change judgments as quickly as possible and state what emotion was being expressed, people high in anxiety made more perceptual errors than people lower in anxiety. This result was seen as a paradoxical effect of emotional sensitivity, because sensitivity functioned to alert individuals to a potential attachment-related threat, but

simultaneously primed a “hair trigger” response that prompted greater relationship misunderstanding and conflict as individuals jumped to threatening conclusions about the meaning of emotional cues (Fraley et al., 2006).

It should be noted that, based on theory and previous research, the TMMS (i.e., trait EI) Attention subscale was expected to be a significant mediator of the link between attachment anxiety and life satisfaction. The DERS (i.e., emotion regulation deficits) Goals subscale, which assesses the ability to set aside emotions in order to engage in goal-directed behavior, might also be expected to function as a significant mediator for people high in attachment anxiety. One explanation for the lack of significant mediation in this study may be the level of ambivalence people with high attachment anxiety hold toward the value of attending to feelings, given that feelings are assessed as important but cause significant distress. Such ambivalence may be apparent in the lack of significant correlations in this study with either TMMS Attention or DERS Awareness.

Mikulincer and Florian (2002) describe secure attachment as a resilience factor that provides an adaptational advantage that protects against psychopathology and promotes well-being. They propose three likely sources of the resilience factor conferred by secure attachment: (a) optimism, trust, and willingness to seek support; (b) positive self-regard; and (c) open-mindedness, flexibility, and high tolerance for uncertainty. All of these qualities could be described as aspects of Kobasa’s hardiness construct that underlies the DRS-15 measure for dispositional resilience, although not all of them fall within the Commitment subscale that was the only significant resilience mediator in the present study. However, the current findings suggest that promoting these resilient characteristics could improve life satisfaction by increasing dispositional resilience as a proxy for secure attachment.

Adult Attachment Avoidance

Turning now to significant mediation paths involving attachment avoidance, Table 6 shows the fifth significant indirect effect, namely, that trait EI clarity, paired sequentially with resilient commitment, emerged as a significant mediator of the relationship with life satisfaction. Table 3 shows that both trait EI clarity and resilient commitment were negatively correlated with avoidance and positively correlated with life satisfaction and with each other. This pattern mirrors the pattern of trait EI repair in the context of attachment anxiety, and is consistent with an ameliorating effect on the negative direct relationship between attachment avoidance and life satisfaction. In other words, people who have emotional clarity and are able to accurately identify the emotions they are experiencing are also likely to experience a resilient commitment to their personal and professional life that promotes life satisfaction. However, the negative correlations between avoidance and trait EI clarity, and between avoidance and resilient commitment, suggest that people who are high in attachment avoidance tend to lack these coping resources. Despite this tendency, the ameliorative effects of the mediators suggest that people who are high in attachment avoidance who are nonetheless able to develop greater trait EI around emotional clarity, as well as greater resilient commitment, experience greater life satisfaction than they otherwise would. Unlike trait EI repair and resilient commitment in the context of attachment anxiety, where both mediators were independently significant, the ameliorating effect for trait EI clarity and resilient commitment was present only for a sequential combination of the two mediators on the impact of attachment avoidance.

Regarding affect regulation deficits, Table 6 shows that the sixth significant indirect path involved the combination of lack of access to effective emotion regulation strategies and resilient commitment. This finding mirrored the finding when attachment anxiety was the input variable

instead of avoidance. Specifically, attachment avoidance is associated with a lack effective emotion regulation strategies that seems to interfere with resilient commitment. That interference, in turn, appears to reduce life satisfaction. However, if confidence in one's ability to regulate one's emotions can be attained despite having high attachment avoidance, then resilient commitment can be fostered and support a greater sense of life satisfaction. Thus, the paths from both anxiety and avoidance to life satisfaction are mediated by the combination of emotion regulation strategy deficits and resilient commitment, but not by either mediator independently.

The finding that skill at emotional clarity and having strategies for emotion regulation are important for people high in attachment avoidance is consistent with theory and research on adult attachment (Mikulincer & Florian, 2002). The secondary emotion regulation strategy utilized by people high in attachment avoidance is to deactivate the attachment system so as to avoid awareness of stimuli that tend to elicit normal, primary attachment strategies (Main, 1990). In contrast to the "fight" stress reaction associated with attachment anxiety, the deactivation strategy of attachment avoidance appears to predispose a "flight" reaction when considered from an acute stress response perspective. The result is to suppress the expression or even the actual experience of distress in order to prevent a negative, rejecting, or punishing reaction from an attachment figure (Ecker et al., 2012; Mikulincer & Florian, 2002). People high in attachment avoidance tend to engage in distancing coping strategies that cognitively and behaviorally minimize contact with other people and with their own and others' emotions (Mikulincer & Florian, 2002). They deny their attachment needs and tend to be "compulsively self-reliant" because being close with others might reactivate the attachment system that has reliably led to frustration and pain in the past (Berant et al., 2005). The focus on self-reliance can lead to blocking awareness of personal vulnerabilities or shortcomings that would undermine the source

of protection they have cultivated in place of reliance on primary attachment strategies they have experienced as problematic (Berant et al., 2005; Mikulincer & Florian, 2002).

Given the degree to which avoidant individuals suppress attention to and awareness of emotions and attachment needs, it might seem like an inconsistency with attachment theory that the current study did not find TMMS Attention to be a significant mediator. However, unexpectedly, TMMS Attention was correlated with very few variables in the study. This result calls into question its construct validity in this sample, given that one source of evidence for construct validity is the strength of correlations a construct has with theoretically and empirically related variables. In contrast, DERS Awareness was correlated with Attachment Avoidance r = .34, $p < .001$ (compared to $r = –.19$, $p < .05$ for TMMS Attention), and may have emerged as a significant mediator had we tested it. Another possibility is that attachment avoidance is associated with affect suppression that, in itself, is unattended to and outside of conscious awareness, but which manifests as a lack of clarity about what one is feeling. Indeed, people who are simultaneously high in both attachment avoidance and attachment anxiety ("fearful avoidants," represented by one pole of the Secure-Fearful variable in this study) tend to be aware of their distress, but suppress expression of it, whereas people who are only high in avoidance tend to suppress even their awareness of distress – distress that is nevertheless physiologically detectable (John & Gross, 2004; Mikulincer & Florian, 2002; Sroufe & Waters, 1977b).

It might also seem inconsistent for DERS Strategies to be a significant mediator, in that it might be unexpected for people high in attachment avoidance to endorse items such as, "When I am upset, I believe that wallowing in it is all I can do." However, Mikulincer and Florian (2002) point out that avoidant attachment seems to be moderately related to well-being, except when the individual is under greater-than-normal stress, at which point avoidant individuals can become

distressed in a fashion similar to anxious individuals. Recall that the sample in the present study was composed of young people in their first semester at college to simulate Ainsworth's Strange Situation in an adult population, so it could be anticipated that stress would have an impact on these students at the time of the study. Indeed, some may have experienced "break-through affect," that is, a degree of distress that couldn't be successfully managed by avoidants' typical emotion regulation approach of deactivating their attachment system. Furthermore, some of the specific strategies that people high in attachment avoidance utilize to distance themselves from their emotions, such as using drugs or alcohol, can reduce stress in the immediate term but lead to other problems that increase stress in the longer term. Even the strategy of emotional suppression may not seem viable, whether because they are unaware that it is a strategy they already engage in and are thus unaware of its availability as an option, or because they *are* aware of their physiological reactions in spite of unconsciously using emotional suppression.

These findings are consistent with suggestions that attachment avoidance is associated with deactivation of the attachment system (Mikulincier & Shaver, 2017). For example, attachment avoidance was associated with scored Rorschach inkblots that are said to indicate lack of acknowledgment of needs and emotions, disengagement with the world, and inflated positive self-perceptions (Berant et al., 2005). Those characteristics reflect the practice of down-regulating the attachment system and exaggerating feelings of self-worth as part of a defensive façade to maintain their protective belief in their self-reliance. Having a lack of clarity about needs and emotions could help people high in attachment avoidance to disengage from feelings that indicate dependence on others. The findings from the emotion-change movie-morph study support the idea that attachment avoidance is associated with disengagement from emotions (Fraley et al., 2006). Niedenthal et al. (2002) had suggested that highly avoidant people might be

more sensitive to emotions than highly anxious people because their longer response times to signal they had detected the offset of an emotion suggested that they recognized the emotion's presence longer. Niedenthal et al. (2002) reasoned that by being sensitive to detecting potential threats in emotional cues, highly avoidant people would be able to instantly react by deactivating their attachment system as a defense against the threat. However, it was impossible to tell from the prior study whether highly avoidant people might instead achieve this defensive mechanism by blunting their perception of emotional cues and actually being less vigilant and sensitive than anxious people. Fraley et al. (2006) added an emotion onset task to disambiguate the prior results, and found that highly avoidant people also took longer to signal detection of the appearance of the emotion, as well as taking longer to signal an emotion's disappearance in the offset task, thereby confirming that avoidant attachment indicated less, rather than more, vigilance and sensitivity than anxious attachment. The lack of emotional clarity found in the current study is consistent with the emotional blunting approach to emotion regulation that involves less vigilance and lower sensitivity to emotional cues.

The Secure-Fearful Axis

The final five significant indirect effects all have the Secure-Fearful axis as the input variable. Table 7 shows that four of these significant mediation effects parallel each of the four significant mediators found when attachment anxiety was the input (shown in Table 5). Thus, all significant mediators for anxiety are replicated in the Secure-Fearful product, and will not be discussed again in this section. The unique significant mediator when avoidance was the input was not replicated in the Secure-Fearful product. Only one unique significant mediation path emerged for the Secure-Fearful product. Table 7 shows that in the context of emotion regulation

difficulties, resilient commitment was a significant mediator alone, that is, not in combination with any specific first-stage mediator.

Summary Support for the Path Model

Because results for the Secure-Fearful conceptual product largely duplicated results of analyses for anxiety alone, this summary will focus on only the 32 paths examined in the proposed model for anxiety and avoidance as unique inputs. Of these, six were significant at the $p < .05$ level. One significant path suggested that perceived emotional intelligence repair mitigated the negative effects of attachment anxiety on life satisfaction. A second path pointed to the role of resilient commitment in mitigating the negative effects of attachment anxiety. The four remaining significant paths all involved serial combinations of first- and second-stage mediators that either fostered or impeded resilient commitment and, through this two-stage pathway, thereby influenced the otherwise negative effect of attachment anxiety or avoidance on life satisfaction. Trait EI repair was positively related to resilient commitment in connection with anxiety, whereas trait EI clarity was positively related to commitment in connection with avoidance. Lack of strategies for emotion regulation was negatively related to commitment for both attachment anxiety and avoidance.

Limitations of the Current Study

The correlational, cross-sectional nature of this study precludes claims that differences in the outcome variable were caused by differences in the input and mediating variables. Although many of the study variables were significantly correlated, the single-time data collection for all variables makes it impossible to determine the temporal precedence of which constructs developed earlier than others. Thus, the present study makes no claim to having internal validity.

The strongest possible claims are that in some respects the study findings are "consistent with" the proposed causal model.

A common threat to validity in survey research is common method bias, which occurs when error variance among variables measured with the same method systematically inflates shared variance (Conway & Lance, 2010). All of the variables in the present study were measured using self-report. However, Conway and Lance (2010) point out that common method shared variance does not automatically bias results.

The operationalizations chosen for this study were all found to be relatively reliable and valid measures of the constructs they were intended to measure. However, each has strengths and weaknesses. Some unexpected results in the present research may highlight potential weaknesses. For example, the items in the ECR (measuring adult attachment) refer to the participant's "romantic partner," thereby assuming that participants have had one or more romantic relationships substantial enough to provide reliable ratings based on actual relationship experience instead of, for example, idealized notions. However, 66% of participants were not currently in an exclusive romantic relationship, and an unknown proportion of them, of whom 84% were 19 years old or younger, may not have ever had a meaningful romantic relationship. A study examining the psychometric properties of the revised ECR found that it explained 30% to 40% of the variance in anxiety- and avoidance-related emotions coded from daily diary entries about interactions with a romantic partner, but only 5% to 15% of these same emotions about interactions with close friends or family members (Sibley et al., 2005). In retrospect, for this study it would have been wise to include a measure to capture participants' level of experience with romantic relationships as a control variable/covariate. In terms of its strengths, the ECR is a dimensional measure of attachment rather than a categorical one. Comparisons of nominal

categories of attachment treat differences within categories as unimportant (e.g., Hayes, 2017; Ravitz et al., 2010). The ECR's dimensionality allows the full range of variation between individuals to contribute to statistical power (Ravitz et al., 2010).

The first-stage mediator, trait emotional intelligence, was measured with the TMMS. However, the literature supporting conceptualization of emotional intelligence as a trait rather than as an ability argues for the superiority of a different measure, the TEIQue, as the most comprehensive measure with the highest predictive validity (e.g., Freudenthaler et al., 2008; Petrides, 2011). One of the unexpected findings of the present study was that the TMMS Attention subscale was significantly correlated with only three other study variables other than the TMMS. Reviewing the items on the Attention scale suggests that they may be tapping more into beliefs about the worth and value of emotions rather than into the behavior of paying attention to emotions. For example, items such as "Feelings are a weakness humans have," and "It's usually a waste of time to think about your emotions," are typical of nine of the 13 items. The authors themselves state that they "have little interest in claiming that the measure discussed here is some kind of emotional intelligence test…[but that they] do believe it has utility in helping…to identify core individual differences that may characterize emotionally intelligent individuals capable of disclosing their feelings to themselves and other people" (Salovey et al., 1995, p. 127). Therefore, using the TEIQue instead of the TMMS may have provided better, more comprehensive coverage of trait EI. The TEIQue assesses 15 facets arranged into four factors: Emotionality, Self-Control, Sociability, and Well-Being, as well as global trait EI, and has good internal consistencies of $\alpha = .75$ - .84 for the four factors (Petrides, 2001, 2009).

The second-stage mediator, dispositional resilience, was measured with the DRS-15. Surprisingly, the Control and Challenge subscales of the DRS-15 were significantly correlated

with very few other variables in the study. Neither Control nor Challenge was significantly associated with even the other two subscales that comprise the DRS-15, nor with life satisfaction. It should be noted that the original 45-item measure was developed using a military sample, and that when the factor structure, reliability, and validity of the DRS-15 was tested in a college athlete sample – a sample more analogous to the present study's sample – numerous psychometric problems were identified (Madrigal et al., 2016). The 45-, 30-, and 15-item versions of the DRS were subjected to a systematic quality assessment of psychometric rigor along with 14 other self-report measures of resilience (Windle et al., 2011). The authors concluded that all of the measures examined, including all forms of the DRS, failed to meet minimum standards of rigor, which clarifies why no single measure of resilience has emerged as being the most widely used or preferable.

This study examined sixteen mediation paths for each of the three input variables for a total of 48 tests of specific indirect effects at the $\alpha = .05$ level. We did not adopt a correction for inflation in study-wise Type I error. However, we did mitigate the inflation of effects due to the shared variance of highly correlated variables to some extent by dropping the DERS Clarity and Awareness subscales, which were found to be highly correlated with TMMS Clarity and Attention, from the mediation analyses.

These archival data were originally gathered with the goal of studying stress, coping, and dropout in first-year university students. Generalization to all university students, or even to first-year students only, is limited because this was convenience sample drawn from students taking an introductory psychology course at a single, large, predominantly White, research-oriented public university in the southeastern United States. In addition, all the study participants volunteered in exchange for course extra credit, and arrived on campus at 8:30 a.m. to complete

survey data and provide a salivary cortisol sample. Any of these factors might have posed a threat to external validity.

Theoretical, Clinical, and Practical Implications

This study attempted to identify mediators that might serve as potential targets for intervention to help people with insecure attachment to improve their life satisfaction. The study identified mediators associated with having strategies for emotion regulation and mood repair skills as significant for people with high attachment anxiety. Given the correlational nature of this research, it would be inappropriate to recommend a particular application based only on these results. However, the study findings are in alignment with research supporting the idea that strategies for emotion regulation can be learned by people with high attachment anxiety. As a particularly illustrative example, borderline personality disorder (BPD) has been characterized as a disorder of disturbed attachment marked by extreme fears of abandonment and by behaviors designed to prevent abandonment. A review of 13 empirical studies (Agrawal et al., 2004) found that most BPD subjects possess attachment styles characterized as preoccupied (high anxiety; low avoidance), fearful (high anxiety; high avoidance), or unresolved.

Regarding the idea that strategies for emotion regulation can be learned by people with high attachment anxiety, such as BPD patients, Dialectical Behavior Therapy (DBT) is one of the most effective treatments for BPD. This intervention involves, among other things, skills training in mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness with an emphasis on promoting a life that the individual finds to be worth living – in other words, achieving high life satisfaction (Harvey et al., 2019). A review of seven randomized controlled trials of DBT across four independent research teams found that DBT helped reduce symptoms such as suicide attempts, nonsuicidal self-injury, emergency room visits, dropping out of

treatment, depression, and hopelessness (Lynch et al., 2007). These symptoms could all be extreme forms of the heightened distress and emotion regulation deficits seen in individuals with high attachment anxiety in general, not just the high attachment anxiety seen in BPD patients.

The fact that BPD has been successfully treated by increasing affect management skills like mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness underscores the potential for such interventions to ameliorate the negative effect of attachment insecurity on life satisfaction. Indeed, studies have found that attachment-related aspects of treatment may be the mechanism by which improvements in BPD occur (Bernheim et al., 2019; Levy et al., 2006). Given the theoretical and empirical evidence for the role of hyperactivation of the attachment system as an emotion regulation strategy in people high in attachment anxiety, the finding in the present study that mood repair skills and strategies for effective emotion regulation were significant mediators is consistent with the idea that targeting these areas, as is done in DBT, would have an ameliorating effect on the negative relationship between adult attachment anxiety and life satisfaction.

However, a systematic review of 14 intervention studies using DBT to treat a variety of conditions in which difficulties in emotion regulation are an issue found inconclusive evidence ranging from trivial effects to large effects that DBT improves emotion regulation skills as measured by the DERS (Harvey et al., 2019). This inconsistency was likely due to situational issues, unrelated to the potential effectiveness of the treatment itself, that need better control. Further research is also needed to determine the components of DBT that are necessary and sufficient for effectively improving emotion regulation skills in people high in attachment anxiety (Harvey et al., 2019). For example, it is uncertain whether measuring outcomes with the DERS, as Harvey et al. (2019) did, can capture changes in distress tolerance that might result

from DBT. This is important because improving distress tolerance might in turn, or in parallel, support efforts at mood repair and increase a sense of access to emotion regulation strategies. However, a factor analysis to combine four measures of distress tolerance into a comprehensive and uniform instrument produced items that seem to capture a different construct than those in the DERS (McHugh & Otto, 2012). Therefore, a broader assessment of emotion regulation as a mediator may be required when considering the intervention components necessary for effecting improvements to life satisfaction in the face of attachment insecurity.

Suggestions for Future Research

Correlational research such as the present study is a good initial step in describing relationships between psychological constructs; however, the causal influences implied by the serial mediation model employed in this study need to be experimentally tested to build evidence for actual causal relationships. Although longitudinal research is necessary for exploring the developmental trajectory of these constructs and their interplay, shorter-term intervention studies can also illuminate causality in the relationships between these constructs. One possible future study could involve obtaining pre- and post-test scores with the measures used in the present study to assess whether people with different attachment quality profiles responded differently, in terms of their life satisfaction, to an intervention designed to increase either their emotional clarity or their mood repair skills. Alternatively, another option for future research would be to use other operationalizations of the constructs examined in this study, to see if the indirect effects are generally replicated, allowing for subscale operationalization differences. In the case of trait emotional intelligence, evidence suggests that the TEIQue might be preferable (e.g., Freudenthaler et al., 2008; Petrides, 2001; Petrides, 2011). Regarding how to measure resilience, however, there is no clearly preferred measure (Windle et al., 2011), and discussion of which

operationalization might be best for purposes of the current research question is beyond the scope of this paper. A third option would be to use different measurement methods besides self-report scales, such as experience sampling, daily diaries, or focus groups with the highest and lowest scorers on measures of study variables, in order to triangulate on the current results.

Conclusion

This study contributes to our understanding of the mechanisms by which adult attachment influences life satisfaction. Emotional intelligence, emotion regulation, and dispositional resilience all appear to play roles in explaining this linkage. The role that these mediating variables play differs somewhat depending on which attachment dimension and which mediator is being considered, but there are also similarities. The benefits of being satisfied with one's life are such that it is worth considering how to help improve life satisfaction among people with insecure attachment, who tend to be dissatisfied with their lives. Therefore, interventions targeting the specific mediators that were significant, independently or serially, for particular dimensions of attachment quality, deserve further investigation so that the negative impact of attachment insecurity on life satisfaction can be ameliorated.

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Tables

Table 1

Frequencies of Sample Demographic Characteristics

Demographic	*n*	%
Age in Years		
18	53	42.7
19	51	41.1
20	5	4.0
22	1	0.8
32	1	0.8
Missing	13	10.5
Total	124	100.0
Sex		
Female	72	58.1
Male	52	41.9
Total	124	100.0
Ethnicity		
African American	8	6.5
Asian American	6	4.8
Caucasian / Euro-American	103	83.1
Hispanic	1	0.8
More than one	4	3.2
Other, not listed	2	1.6
Total	124	100.0
Relationship Status		
Not currently in an exclusive romantic relationship	82	66.1
I've made a commitment to date just one person	41	33.1
I live with my partner in a committed romantic relationship	1	0.8
I am married	0	0.0
I am divorced/separated	0	0.0
My spouse is deceased	0	0.0
Total	124	100.0

Table 2

Variable Descriptive Statistics

Variable	*M*	*SD*	Range	Possible Range	Cronbach's α	Skew	Kurtosis
Adult Attachment: Experiences in Close Relationships (ECR) Scale							
Anxiety	3.47	1.10	1.28 – 6.89	1 – 7	.92	0.30	–0.12
Avoidance	3.00	1.07	1.00 – 5.89	1 – 7	.93	0.32	–0.44
Secure-Fearful	10.70	5.42	1.28 – 27.81	1 – 49	n/a	0.65	0.28
Trait Emotional Intelligence: Trait Meta-Mood Scale (TMMS)							
Attention	3.82	0.50	2.69 – 4.92	1 – 5	.79	–0.15	–0.41
Clarity	3.45	0.66	1.36 – 4.64	1 – 5	.85	–0.55	0.51
Repair	3.89	0.70	2.17 – 5.00	1 – 5	.79	–0.57	–0.27
Emotion Regulation: Difficulties in Emotion Regulation Scale (DERS)							
Nonacceptance	2.04	0.84	1.00 – 5.00	1 – 5	.88	1.07	1.08
Goals	2.62	0.93	1.00 – 5.00	1 – 5	.86	0.60	–0.50
Impulse	1.63	0.66	1.00 – 4.17	1 – 5	.86	1.82	3.79
Awareness	2.34	0.66	1.00 – 4.00	1 – 5	.79	0.37	–0.25
Strategies	1.80	0.64	1.00 – 4.38	1 – 5	.84	1.33	2.13
Clarity	2.19	0.68	1.00 – 5.00	1 – 5	.83	1.21	3.00
Dispositional Resilience: Dispositional Resilience Scale-15 (DRS-15)							
Commitment	2.07	0.56	0.40 – 3.00	0 – 3	.79	–0.56	0.16
Control	2.51	0.44	1.00 – 3.00	0 – 3	.72	–0.87	0.39
Challenge	1.70	0.72	0.00 – 3.00	0 – 3	.82	–0.48	–0.36
Total Score	2.12	0.34	1.00 – 3.00	0 – 3	.70	–0.25	0.43
Life Satisfaction	5.00	1.23	2.20 – 7.00	1 – 7	.84	–0.43	–0.58

Note. $N = 124$. Item #9 was removed from the Challenge subscale of the DRS-15, as well as from the Total Score, due to a very small negative Corrected Item-Total Correlation. $SE_{skew} = .22$; $SE_{kurtosis} = .43$.

Table 3

Bivariate Correlations Between Study Variables

	ECR			TMMS			DERS						DRS-15			
Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Adult Attachment: Experiences in Close Relationships (ECR) Scale																
1. Anxiety	–															
2. Avoidance	**.25**	–														
3. Secure-Fearful	**.74**	**.81**	–													
Trait Emotional Intelligence: Trait Meta-Mood Scale (TMMS)																
4. Attention	.09	–.19	–.04	–												
5. Clarity	**–.32**	**–.47**	**–.51**	.23	–											
6. Repair	–.21	–.13	–.23	.22	**.31**	–										
Emotion Regulation: Difficulties in Emotion Regulation Scale (DERS)																
7. Nonacceptance	**.54**	.23	**.47**	–.13	**–.41**	–.20	–									
8. Goals	**.33**	.19	**.32**	–.01	**–.24**	–.23	**.35**	–								
9. Impulse	**.41**	.09	**.31**	–.08	**–.33**	**–.32**	**.49**	**.51**	–							
10. Awareness	.03	**.34**	.23	**–.69**	**–.34**	**–.33**	.21	.05	.13	–						
11. Strategies	**.54**	**.25**	**.51**	–.06	**–.36**	**–.46**	**.61**	**.46**	**.60**	.21	–					
12. Clarity	**.29**	**.49**	**.50**	**.25**	**–.82**	**–.30**	**.33**	.15	**.27**	**–.33**	**.34**	–				
Dispositional Resilience: Dispositional Resilience Scale-15 (DRS-15)																
13. Commitment	**–.33**	–.23	**–.36**	.21	**.39**	**.52**	**–.25**	**–.32**	**–.33**	**–.29**	**–.46**	**–.37**	–			
14. Control	–.00	–.14	–.11	.05	.18	.05	–.15	–.11	–.00	–.08	–.02	–.19	.17	–		
15. Challenge	–.14	.05	–.06	–.13	–.00	.19	.00	.07	.05	–.05	–.14	–.09	.04	–.06	–	
16. Total Score	**–.28**	–.16	**–.30**	.07	**.31**	**.44**	–.21	–.19	–.17	**–.24**	**–.36**	**–.35**	**.69**	**.53**	**.60**	–
17. Life Satisfaction	**–.37**	**–.24**	**–.38**	.15	**.28**	**.52**	**–.33**	**–.33**	**–.38**	**–.24**	**–.46**	**–.25**	**.56**	.02	–.06	**.30**

Note. $N = 124$. The DERS Awareness and Clarity subscales were redundant with the TMMS Attention and Clarity subscales, respectively, and were not included in analyses, but they are included here to demonstrate the redundancy. Item #9 was removed from the Challenge subscale of the DRS-15, as well as from the Total Score. $p < .05$. $\mathbf{p < .01}$. $\mathbf{p < .001}$.

Table 4

Direct and Total Indirect Effects of Adult Attachment on Life Satisfaction

Mediator			Parameter Estimate				95% CI	
1st-Stage	2nd-Stage	Type of Effect	Unstandardized	*SE*	Standardized	*t*	Lower Limit	Upper Limit
Independent Variable: Adult Attachment Anxiety								
TMMS subscales	DRS-15 Commitment	Direct	–.22	.09	–.20	–2.57	–.3968	–.0515
		Total indirect	–.19	.07	–.17		–.3365	–.0542 [a]
DERS subscales	DRS-15 Commitment	Direct	–.10	.10	–.09	–1.01	–.3100	.1008
		Total indirect	–.31	.09	–.27		–.4833	–.1432 [a]
Independent Variable: Adult Attachment Avoidance								
TMMS subscales	DRS-15 Commitment	Direct	–.15	.09	–.13	–1.65	–.3305	.0297
		Total indirect	–.13	.08	–.11		–.2900	.0207
DERS subscales	DRS-15 Commitment	Direct	–.10	.09	–.08	–1.12	–.2686	.0750
		Total indirect	–.18	.07	–.16		–.3252	–.0437 [a]
Independent Variable: Adult Attachment Secure-Fearful Axis								
TMMS subscales	DRS-15 Commitment	Direct	–.05	.02	–.21	**–2.63**	–.0835	–.0118
		Total indirect	–.04	.02	–.17		–.0708	–.0061 [a]
DERS subscales	DRS-15 Commitment	Direct	–.02	.02	–.11	–1.23	–.0643	.0150
		Total indirect	–.06	.02	–.27		–.0948	–.0306 [a]

Note. $N = 124$. Confidence intervals for the total indirect effects are for the unstandardized parameter estimate and are bootstrapped using 10,000 resamples. The direct effect *SE* was estimated using the HC3 heteroscedasticity-consistent covariance matrix. CI = Confidence Interval; TMMS = Trait Meta-Mood Scale (three subscales: Attention, Clarity, Repair); DERS = Difficulties in Emotion Regulation Scale (four subscales: Nonacceptance, Goals, Impulse, Strategies); DRS-15 = Dispositional Resilience Scale-15.
[a] indicates a statistically significant total indirect effect in which the confidence interval does not contain zero. $p < .05$. $\boldsymbol{p < .01}$.

Table 5

Specific Indirect Effects of Adult Attachment Anxiety on Life Satisfaction

Mediator		Parameter Estimate			Bootstrapped 95% CI	
1st-Stage Subscale	2nd-Stage Subscale	Unstandardized	*SE*	Standardized	Lower Limit	Upper Limit
First-Stage Mediator: Trait Meta-Mood Scale (TMMS)						
Attention	N/A	.00	.01	.00	–.0209	.0316
Clarity	N/A	.00	.03	.00	–.0617	.0728
Repair	N/A	–.07	.04	–.06	–.1634	–.0049 [a]
N/A	DRS-15 Commitment	–.07	.04	–.07	–.1634	–.0124 [a]
Attention	DRS-15 Commitment	.00	.01	.00	–.0061	.0191
Clarity	DRS-15 Commitment	–.02	.02	–.02	–.0603	.0027
Repair	DRS-15 Commitment	–.03	.02	–.03	–.0788	–.0040 [a]
First-Stage Mediator: Difficulties in Emotion Regulation Scale (DERS)						
Nonacceptance	N/A	–.03	.06	–.03	–.1684	.0892
Goals	N/A	–.02	.04	–.02	–.0902	.0563
Impulse	N/A	–.04	.05	–.04	–.1472	.0436
Strategies	N/A	–.06	.07	–.05	–.1935	.0677
N/A	DRS-15 Commitment	–.06	.06	–.06	–.1909	.0309
Nonacceptance	DRS-15 Commitment	.03	.03	.03	–.0261	.0940
Goals	DRS-15 Commitment	–.02	.01	–.02	–.0511	.0080
Impulse	DRS-15 Commitment	–.01	.02	–.01	–.0530	.0359
Strategies	DRS-15 Commitment	–.10	.04	–.09	–.1848	–.0075 [a]

Note. $N = 124$. Not all specific indirect effects included both a first- and second-stage mediator, indicated by "N/A". Confidence intervals are for the unstandardized parameter estimate and are bootstrapped with 10,000 resamples. Due to the number of decimal places reported, some parameter estimates appear to be zero or negative zero but are, in fact, a very small positive or negative number. CI = Confidence Interval; DRS-15 = Dispositional Resilience Scale-15.

[a] indicates a statistically significant specific indirect effect in which the confidence interval does not contain zero.

Table 6

Specific Indirect Effects of Adult Attachment Avoidance on Life Satisfaction

Mediator		Parameter Estimate			Bootstrapped 95% CI	
1st-Stage Subscale	2nd-Stage Subscale	Unstandardized	*SE*	Standardized	Lower Limit	Upper Limit
First-Stage Mediator: Trait Meta-Mood Scale (TMMS)						
Attention	N/A	.01	.02	.00	–.0271	.0513
Clarity	N/A	.01	.05	.01	–.0860	.1048
Repair	N/A	–.05	.04	–.04	–.1247	.0132
N/A	DRS-15 Commitment	–.03	.04	–.02	–.1153	.0509
Attention	DRS-15 Commitment	–.00	.01	–.00	–.0248	.0123
Clarity	DRS-15 Commitment	–.04	.02	–.04	–.0905	–.0010 [a]
Repair	DRS-15 Commitment	–.02	.02	–.02	–.0695	.0069
First-Stage Mediator: Difficulties in Emotion Regulation Scale (DERS)						
Nonacceptance	N/A	–.02	.03	–.02	–.0817	.0304
Goals	N/A	–.01	.02	–.01	–.0547	.0466
Impulse	N/A	–.01	.02	–.01	–.0586	.0095
Strategies	N/A	–.03	.04	–.03	–.1119	.0303
N/A	DRS-15 Commitment	–.06	.05	–.05	–.1586	.0268
Nonacceptance	DRS-15 Commitment	.01	.01	.01	–.0145	.0387
Goals	DRS-15 Commitment	–.01	.01	–.01	–.0328	.0056
Impulse	DRS-15 Commitment	–.00	.01	–.00	–.0197	.0074
Strategies	DRS-15 Commitment	–.05	.02	–.04	–.1019	–.0075 [a]

Note. $N = 124$. Not all specific indirect effects included both a first- and second-stage mediator, indicated by "N/A". Confidence intervals are for the unstandardized parameter estimate and are bootstrapped with 10,000 resamples. Due to the number of decimal places reported, some parameter estimates appear to be zero or negative zero but are, in fact, a very small positive or negative number. CI = Confidence Interval; DRS-15 = Dispositional Resilience Scale-15.

[a] indicates a statistically significant specific indirect effect in which the confidence interval does not contain zero.

Table 7

Specific Indirect Effects of Adult Attachment Secure-Fearful Axis on Life Satisfaction

Mediator		Parameter Estimate			Bootstrapped 95% CI	
1st-Stage Subscale	2nd-Stage Subscale	Unstandardized	*SE*	Standardized	Lower Limit	Upper Limit
First-Stage Mediator: Trait Meta-Mood Scale (TMMS)						
Attention	N/A	–.00	.00	–.00	–.0040	.0047
Clarity	N/A	.01	.01	.03	–.0147	.0281
Repair	N/A	–.02	.01	–.07	–.0347	–.0021 [a]
N/A	DRS-15 Commitment	–.01	.01	–.06	–.0320	–.0014 [a]
Attention	DRS-15 Commitment	–.00	.00	–.00	–.0027	.0017
Clarity	DRS-15 Commitment	–.01	.00	–.03	–.0156	.0024
Repair	DRS-15 Commitment	–.01	.00	–.03	–.0177	–.0015 [a]
First-Stage Mediator: Difficulties in Emotion Regulation Scale (DERS)						
Nonacceptance	N/A	–.01	.01	–.02	–.0288	.0144
Goals	N/A	–.00	.01	–.01	–.0164	.0124
Impulse	N/A	–.01	.01	–.03	–.0247	.0049
Strategies	N/A	–.01	.01	–.05	–.0372	.0144
N/A	DRS-15 Commitment	–.02	.01	–.08	–.0397	–.0009 [a]
Nonacceptance	DRS-15 Commitment	.01	.00	.02	–.0036	.0161
Goals	DRS-15 Commitment	–.00	.00	–.01	–.0090	.0019
Impulse	DRS-15 Commitment	–.00	.00	–.01	–.0098	.0042
Strategies	DRS-15 Commitment	–.02	.01	–.07	–.0340	–.0002 [a]

Note. $N = 124$. Not all specific indirect effects included both a first- and second-stage mediator, indicated by "N/A". Confidence intervals are for the unstandardized parameter estimate and are bootstrapped with 10,000 resamples. Due to the number of decimal places reported, some parameter estimates appear to be zero or negative zero but are, in fact, a very small positive or negative number. CI = Confidence Interval; DRS-15 = Dispositional Resilience Scale-15.

[a] indicates a statistically significant specific indirect effect in which the confidence interval does not contain zero.

Table 8

Regression Coefficients and Standard Errors for the Mediation Model in Figure 3 for Attachment Anxiety With TMMS as the First-Stage Mediator

	Consequent																				
	M_{1A} TMMS Attention					M_{1B} TMMS Clarity					M_{1C} TMMS Repair					M_3 DRS-15 Commitment					Y Life Satisfaction				
Antecedent	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*
X_1 Anxiety	a_{1A1}	.09	.04	.05	.356	a_{1B1}	**–.32**	–.19	.06	.001	a_{1C1}	–.21	–.13	.06	.019	a_{31}	–.19	–.10	.04	.020	c'_1	–.20	–.22	.09	.011
M_{1A} Attention			–					–					–			d_{31A}	.10	.12	.10	.244	b_{1A}	.03	.07	.20	.719
M_{1B} Clarity			–					–					–			d_{31B}	.18	.15	.10	.118	b_{1B}	–.01	–.02	.17	.881
M_{1C} Repair			–					–					–			d_{31C}	**.40**	.32	.07	<.001	b_{1C}	**.30**	.52	.19	.007
M_3 Commit.			–					–					–					–			b_3	**.34**	.76	.21	<.001
Constant			3.67	–	.16 <.001			4.12	–	.20 <.001			4.36	–	.20 <.001			0.19	–	.50 .699			1.99	–	.89 .027
	$R^2 = .01$ $F(1, 122) = 0.86$ $p = .356$					$R^2 = \mathbf{.10}$ $F(1, 122) = 10.67$ $p = .001$					$R^2 = .05$ $F(1, 122) = 5.68$ $p = .019$					$R^2 = \mathbf{.37}$ $F(4, 119) = 19.10$ $p < .001$					$R^2 = \mathbf{.42}$ $F(5, 118) = 15.30$ $p < .001$				

Note. $N = 124$. TMMS = Trait Meta-Mood Scale for trait emotional intelligence. DRS-15 = Dispositional Resilience Scale-15. β = Standardized regression path coefficient. *B* = Unstandardized regression path coefficient. *SE* = Standard Error. The *F* statistic and the *SE* for the unstandardized regression coefficient(s) were calculated using the heteroscedasticity-consistent covariance matrix estimator HC3.

$p < .05$. $\mathbf{p < .01}$. $\mathbf{p < .001}$.

Table 9

Regression Coefficients and Standard Errors for the Mediation Model in Figure 3 for Attachment Anxiety With DERS as the First-Stage Mediator

	Consequent																									
	M_{2A} DERS Nonacceptance					M_{2B} DERS Goals					M_{2C} DERS Impulse					M_{2D} DERS Strategies					M_3 DRS-15 Commitment					Y Life Satisfaction				
Antecedent	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*
X_1 Anxiety	a_{2A1}	**.54**	.41	.06	<.001	a_{2B1}	**.33**	.27	.08	.001	a_{2C1}	**.41**	.24	.06	<.001	a_{2D1}	**.54**	.31	.06	<.001	a_{31}	−.13	−.07	.06	.258	c'_1	−.09	−.10	.10	.315
M_{2A} Nonacc.			–					–					–					–			d_{32A}	.12	.08	.08	.313	b_{2A}	−.05	−.08	.16	.637
M_{2B} Goals			–					–					–					–			d_{32B}	−.11	−.07	.05	.206	b_{2B}	−.05	−.06	.13	.642
M_{2C} Impulse			–					–					–					–			d_{32C}	−.06	−.05	.10	.601	b_{2C}	−.09	−.18	.20	.378
M_{2D} Strategy			–					–					–					–			d_{32D}	−.37	−.32	.14	.021	b_{2D}	−.10	−.19	.21	.356
M_3 Commit.			–					–					–					–						–			b_3	**.43**	.95	.22	<.001
Constant			0.60	–	.20	.004			1.66	–	.26	<.001			0.78	–	.18	<.001			.72	–	.18	<.001			2.98	–	.18	<.001			4.35	–	.70	<.001
			R^2 = **.29**						R^2 = **.11**						R^2 = **.16**						R^2 = **.29**						R^2 = **.24**						R^2 = **.39**			
			$F(1, 122)$ = 42.84						$F(1, 122)$ = 12.37						$F(1, 122)$ = 19.31						$F(1, 122)$ = 30.15						$F(5, 118)$ = 6.37						$F(6, 117)$ = 9.00			
			p <.001						p = .001						p <.001						p <.001						p <.001						p <.001			

Note. N = 124. DERS = Difficulties in Emotion Regulation Scale. DRS-15 = Dispositional Resilience Scale-15. β = Standardized regression path coefficient. B = Unstandardized regression path coefficient. SE = Standard Error. The F statistic and the SE for the unstandardized regression coefficient(s) were calculated using the heteroscedasticity-consistent covariance matrix estimator HC3.

$p < .05$. $p < .01$. $p < .001$.

Table 10

Regression Coefficients and Standard Errors for the Mediation Model in Figure 4 for Attachment Avoidance With TMMS as the First-Stage Mediator

	Consequent																				
	M_{1A} TMMS Attention					M_{1B} TMMS Clarity					M_{1C} TMMS Repair					M_3 DRS-15 Commitment					Y Life Satisfaction				
Antecedent	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*
X_2 Avoid.	a_{1A2}	−.19	−.09	.04	.050	a_{1B2}	**−.47**	−.29	.04	<.001	a_{1C2}	−.13	−.08	.06	.152	a_{31}	−.06	−.03	.05	.513	c'_2	−.13	−.15	.09	.101
M_{1A} Attention			–					–					–			d_{31A}	.06	.07	.10	.511	b_{1A}	−.03	−.06	.19	.745
M_{1B} Clarity			–					–					–			d_{31B}	.21	.18	.09	.063	b_{1B}	−.02	−.04	.18	.839
M_{1C} Repair			–					–					–			d_{31C}	**.44**	.35	.08	<.001	b_{1C}	**.32**	.56	.20	.007
M_3 Commit.			–					–					–					–			b_3	**.38**	.84	.23	<.001
Constant		4.08	–	.13	<.001		4.32	–	.13	<.001		4.13	–	.17	<.001		−0.06	–	.57	.911		1.90	–	1.04	.070
	$R^2 = .03$ $F(1, 122) = 3.92$ $p = .050$					$R^2 = \mathbf{.22}$ $F(1, 122) = 48.79$ $p < .001$					$R^2 = .02$ $F(1, 122) = 2.08$ $p = .152$					$R^2 = \mathbf{.34}$ $F(4, 119) = 16.18$ $p < .001$					$R^2 = \mathbf{.40}$ $F(5, 118) = 14.29$ $p < .001$				

Note. $N = 124$. TMMS = Trait Meta-Mood Scale for trait emotional intelligence. DRS-15 = Dispositional Resilience Scale-15. β = Standardized regression path coefficient. *B* = Unstandardized regression path coefficient. *SE* = Standard Error. The *F* statistic and the *SE* for the unstandardized regression coefficient(s) were calculated using the heteroscedasticity-consistent covariance matrix estimator HC3.

$p < .05$. $\mathbf{p < .01}$. $\mathbf{p < .001}$.

Table 11

Regression Coefficients and Standard Errors for the Mediation Model in Figure 4 for Attachment Avoidance With DERS as the First-Stage Mediator

	Consequent																								
	M_{2A} DERS Nonacceptance					M_{2B} DERS Goals					M_{2C} DERS Impulse					M_{2D} DERS Strategies					M_3 DRS-15 Commitment					Y Life Satisfaction				
Antecedent	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*
X_2 Avoid.	a_{2A2}	**.23**	.18	.06	.001	a_{2B2}	.19	.17	.07	.026	a_{2C2}	.09	.06	.04	.208	a_{2D2}	**.25**	.15	.05	.004	a_{32}	−.12	−.06	.05	.207	c'_2	−.08	−.10	.09	.267
M_{2A} Nonacc.			–					–					–					–			d_{32A}	.09	.06	.07	.400	b_{2A}	−.07	−.10	.14	.465
M_{2B} Goals			–					–					–					–			d_{32B}	−.10	−.06	.05	.219	b_{2B}	−.04	−.05	.14	.696
M_{2C} Impulse			–					–					–					–			d_{32C}	−.09	−.07	.09	.425	b_{2C}	−.11	−.21	.20	.285
M_{2D} Strategy			–					–					–					–			d_{32D}	−.38	−.33	.13	.010	b_{2D}	−.11	−.21	.21	.314
M_3 Commit.			–					–					–					–						–			b_3	**.43**	.94	.22	<.001
Constant		1.49	–	.19	<.001		2.11	–	.23	<.001		1.45	–	.14	<.001		1.35	–	.15	<.001		3.01	–	.19	<.001		4.41	–	.71	<.001
		R^2 = **.05**					R^2 = .04					R^2 = .01					R^2 = **.06**					R^2 = **.24**					R^2 = **.39**			
		$F(1, 122) = 10.71$					$F(1, 122) = 5.10$					$F(1, 122) = 1.60$					$F(1, 122) = 8.41$					$F(5, 118) = 6.83$					$F(6, 117) = 8.62$			
		p = .001					p = .026					p = .208					p = .004					p <.001					p <.001			

Note. $N = 124$. DERS = Difficulties in Emotion Regulation Scale. DRS-15 = Dispositional Resilience Scale-15. β = Standardized regression path coefficient. *B* = Unstandardized regression path coefficient. *SE* = Standard Error. The *F* statistic and the *SE* for the unstandardized regression coefficient(s) were calculated using the heteroscedasticity-consistent covariance matrix estimator HC3.

$p < .05$. $p < .01$. $p < .001$.

Table 12

Regression Coefficients and Standard Errors for the Mediation Model in Figure 5 for Secure-Fearful With TMMS as the First-Stage Mediator

	Consequent																				
	M_{1A} TMMS Attention					M_{1B} TMMS Clarity					M_{1C} TMMS Repair					M_3 DRS-15 Commitment					Y Life Satisfaction				
Antecedent	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*
X_3 Secure-Fearful	a_{1A3}	−.04	−.00	.01	.672	a_{1B3}	**−.51**	−.06	.01	<.001	a_{1C3}	−.23	−.03	.01	.011	a_{33}	−.18	−.02	.01	.036	c'_3	−.21	−.05	.02	.010
M_{1A} Attention			–					–					–			d_{31A}	.08	.09	.10	.358	b_{1A}	.01	.02	.19	.926
M_{1B} Clarity			–					–					–			d_{31B}	.15	.13	.10	.189	b_{1B}	−.06	−.11	.18	.552
M_{1C} Repair			–					–					–			d_{31C}	**.42**	.33	.07	<.001	b_{1C}	**.30**	.54	.19	.007
M_3 Commit.			–					–					–					–			b_3	**.35**	.77	.22	.001
Constant			3.86	–	.10 <.001			4.12	–	.11 <.001			4.21	–	.13 <.001			0.19	–	.52 .722			2.11	–	.94 .027
			R^2 = .00 $F(1, 122)$ = 0.18 p = .672					R^2 = **.26** $F(1, 122)$ = 41.07 p <.001					R^2 = .05 $F(1, 122)$ = 6.66 p = .011					R^2 = **.36** $F(4, 119)$ = 18.48 p <.001					R^2 = **.42** $F(5, 118)$ = 16.67 p <.001		

Note. N = 124. TMMS = Trait Meta-Mood Scale for trait emotional intelligence. DRS-15 = Dispositional Resilience Scale-15. β = Standardized regression path coefficient. B = Unstandardized regression path coefficient. SE = Standard Error. The F statistic and the SE for the unstandardized regression coefficient(s) were calculated using the heteroscedasticity-consistent covariance matrix estimator HC3.

$p < .05$. **$p < .01$**. **$p < .001$**.

Table 13

Regression Coefficients and Standard Errors for the Mediation Model in Figure 5 for Secure-Fearful With DERS as the First-Stage Mediator

	Consequent																									
	M_{2A} DERS Nonacceptance					M_{2B} DERS Goals					M_{2C} DERS Impulse					M_{2D} DERS Strategies					M_3 DRS-15 Commitment					Y Life Satisfaction				
Antecedent	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*	Path	β	*B*	*SE*	*p*
X_3 Secure-Fearful	a_{2A3}	**.47**	.07	.01	<.001	a_{2B3}	**.32**	.05	.01	<.001	a_{2C3}	**.31**	.04	.01	<.001	a_{2D3}	**.51**	.06	.01	<.001	a_{33}	−.18	−.02	.01	.070	c'_3	−.11	−.02	.02	.221
M_{2A} Nonacc.			–					–					–					–			d_{32A}	.12	.08	.07	.263	b_{2A}	−.05	−.08	.15	.597
M_{2B} Goals			–					–					–					–			d_{32B}	−.10	−.06	.05	.235	b_{2B}	−.04	−.06	.14	.687
M_{2C} Impulse			–					–					–					–			d_{32C}	−.08	−.07	.10	.479	b_{2C}	−.11	−.20	.19	.301
M_{2D} Strategy			–					–					–					–			d_{32D}	−.34	−.30	.14	.035	b_{2D}	−.09	−.18	.21	.409
M_3 Commit.			–					–					–					–						–		b_3	**.42**	.93	.22	<.001
Constant		1.26	–	.14	<.001		2.04	–	.16	<.001		1.23	–	.11	<.001		1.16	–	.12	<.001		2.91	–	.16	<.001		4.28	–	.68	<.001
	R^2 = **.22** $F(1, 122) = 31.47$ p <.001					R^2 = **.10** $F(1, 122) = 13.38$ p <.001					R^2 = **.09** $F(1, 122) = 12.73$ p <.001					R^2 = **.26** $F(1, 122) = 23.26$ p <.001					R^2 = **.25** $F(5, 118) = 7.24$ p <.001					R^2 = **.39** $F(6, 117) = 8.67$ p <.001				

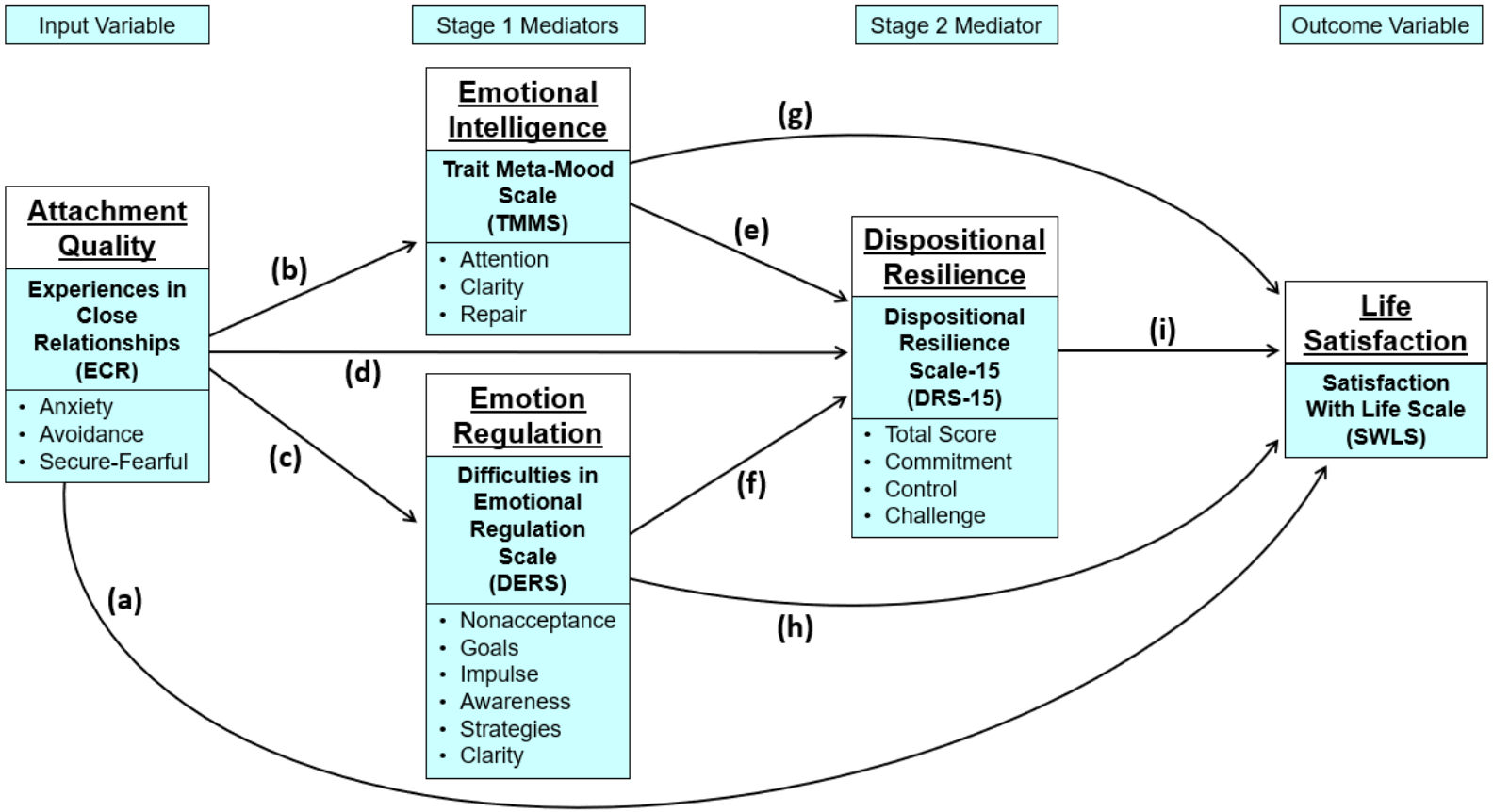
Note. N = 124. DERS = Difficulties in Emotion Regulation Scale. DRS-15 = Dispositional Resilience Scale-15. β = Standardized regression path coefficient. B = Unstandardized regression path coefficient. SE = Standard Error. The F statistic and the SE for the unstandardized regression coefficient(s) were calculated using the heteroscedasticity-consistent covariance matrix estimator HC3.

$p < .05$. $p < .01$. $p < .001$.

Figures

Figure 1

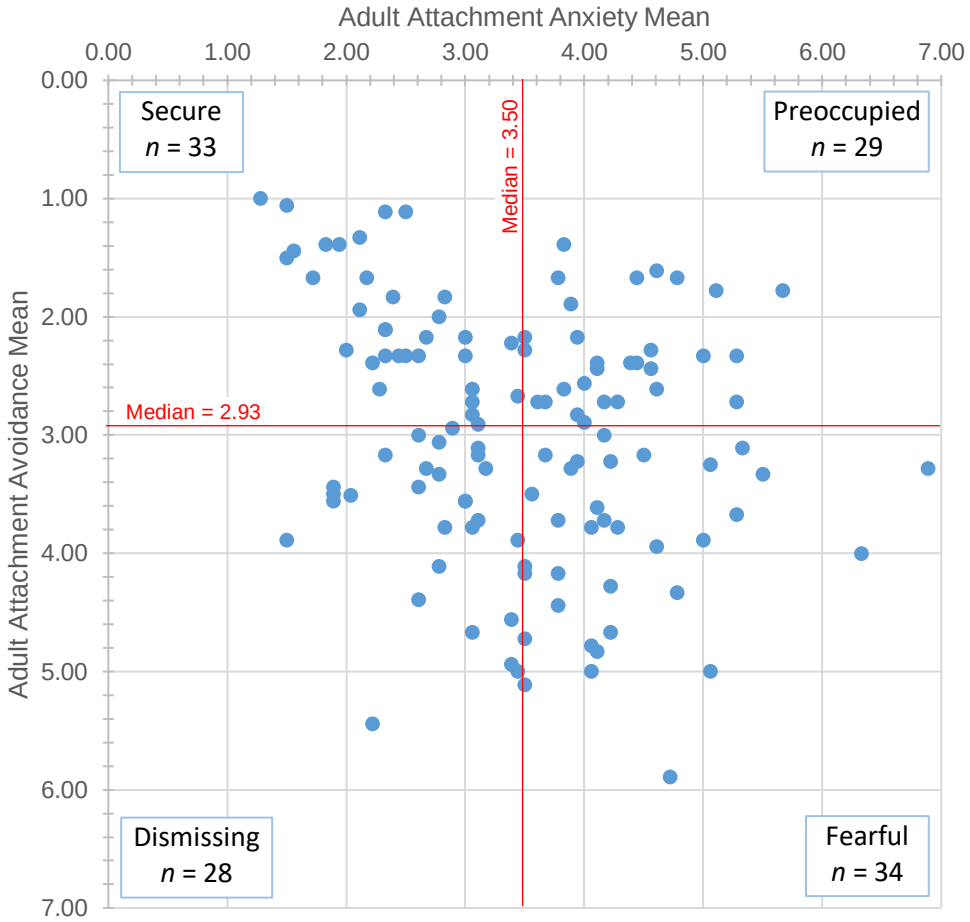
Parallel and Serial Mediation Path Model of Personality Constructs Predicting Life Satisfaction



Note. The white boxes name the construct, while the shaded boxes attached to them name the measure used to operationalize the construct in this study. Bullet points list the subscales, if any.

Figure 2

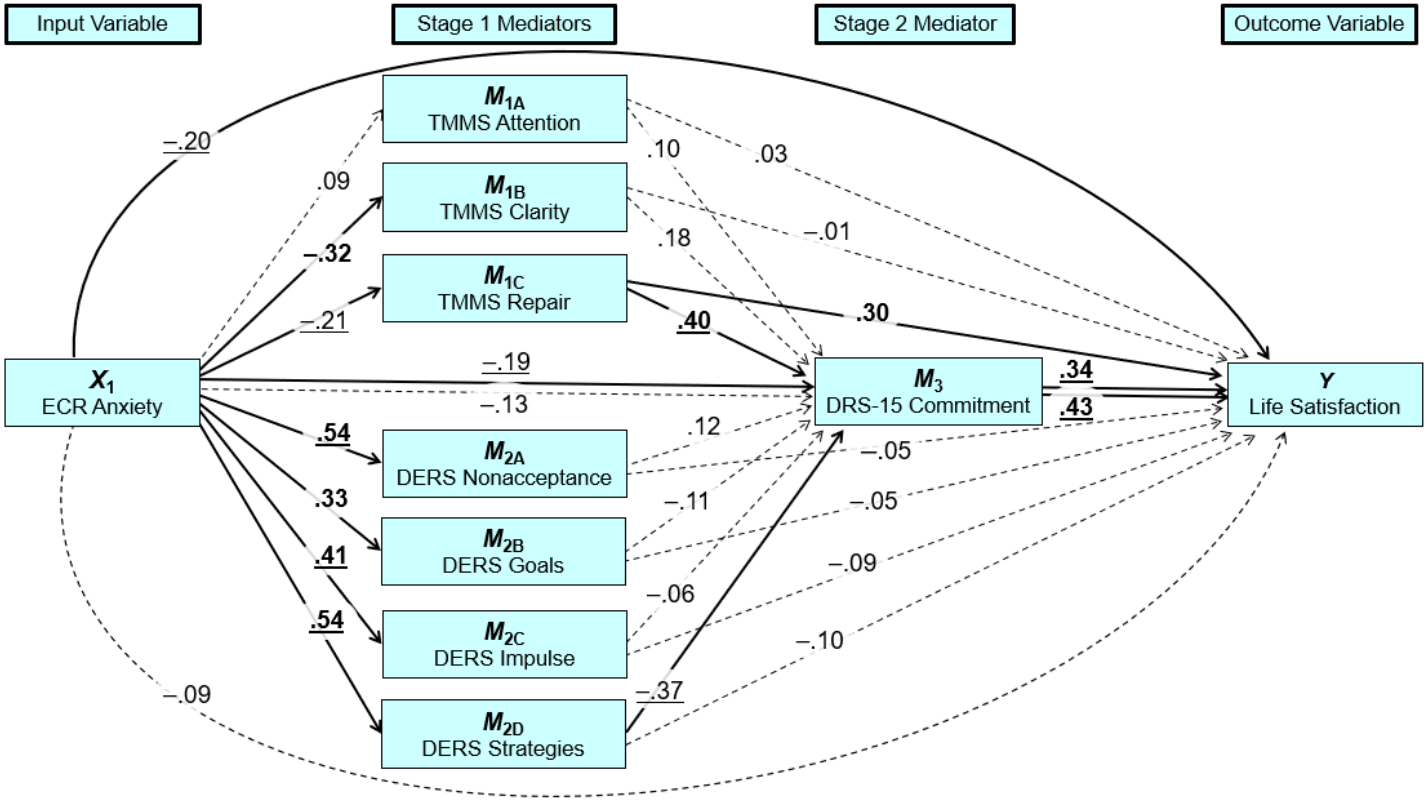
Scatterplot of Adult Attachment Avoidance Scores by Adult Attachment Anxiety Scores With Attachment Styles From Median Split



Note. $N = 124$. There were six individuals with Anxiety scores exactly on the median; these were classified as "high anxiety" in order to create roughly equivalent groups above and below the median (63 "high" and 61 "low").

Figure 3

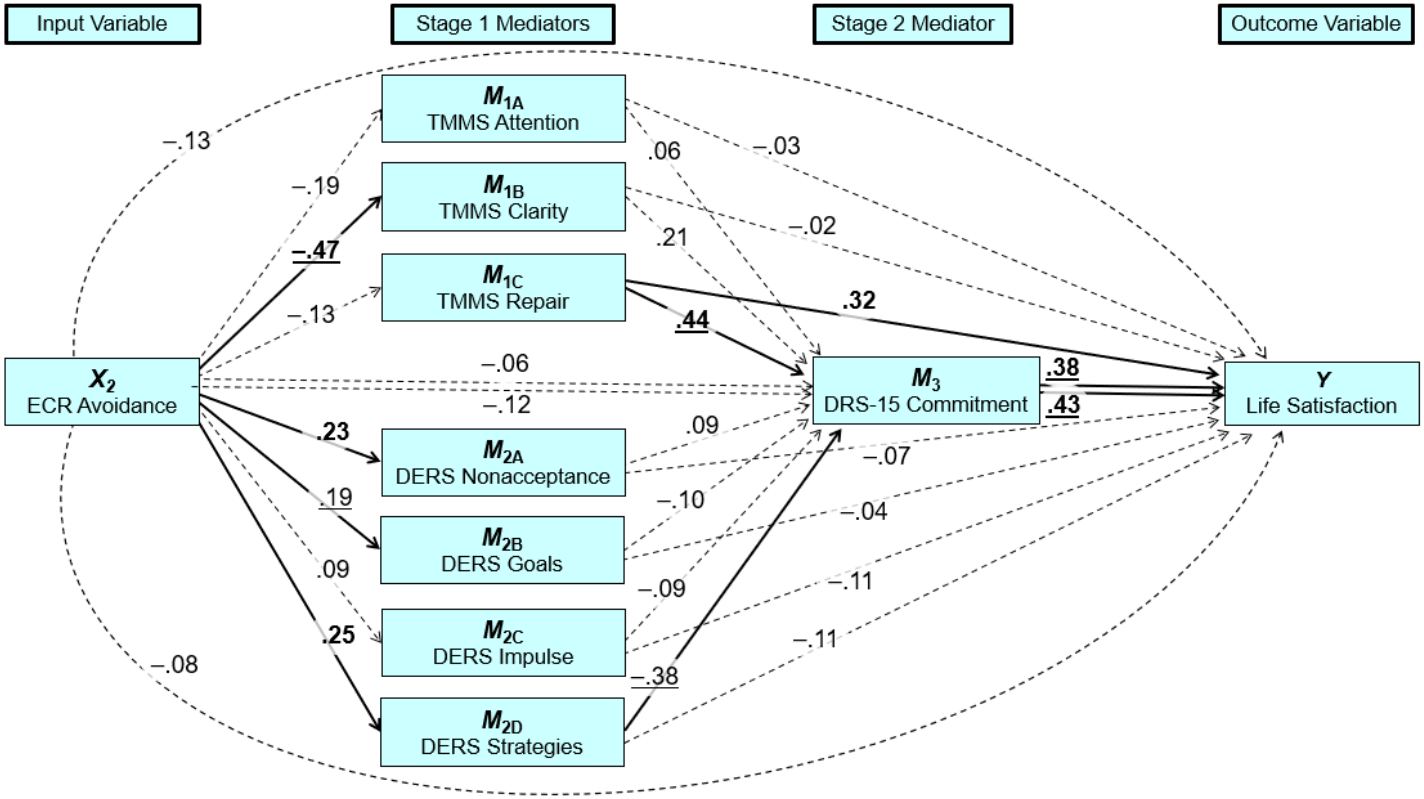
Parallel and Serial Mediation Path Model Predicting Life Satisfaction with Adult Attachment Anxiety and Either Trait Emotional Intelligence or Difficulties in Emotion Regulation



Note. Solid path lines indicate a statistically significant path coefficient; dashed lines indicate a non-significant path coefficient (see Tables 8 and 9). Although the TMMS and the DERS are depicted in the same model here, they were analyzed separately due to limitations with PROCESS Model 80. Where two paths connect variables, the top path represents the model including the TMMS; the bottom path represents the model including the DERS. ECR = Experiences in Close Relationships Scale. TMMS = Trait Meta-Mood Scale. DERS = Difficulties in Emotion Regulation Scale. DRS-15 = Dispositional Resilience Scale-15. $p < .05$. $\mathbf{p < .01}$. $\mathbf{p < .001}$.

Figure 4

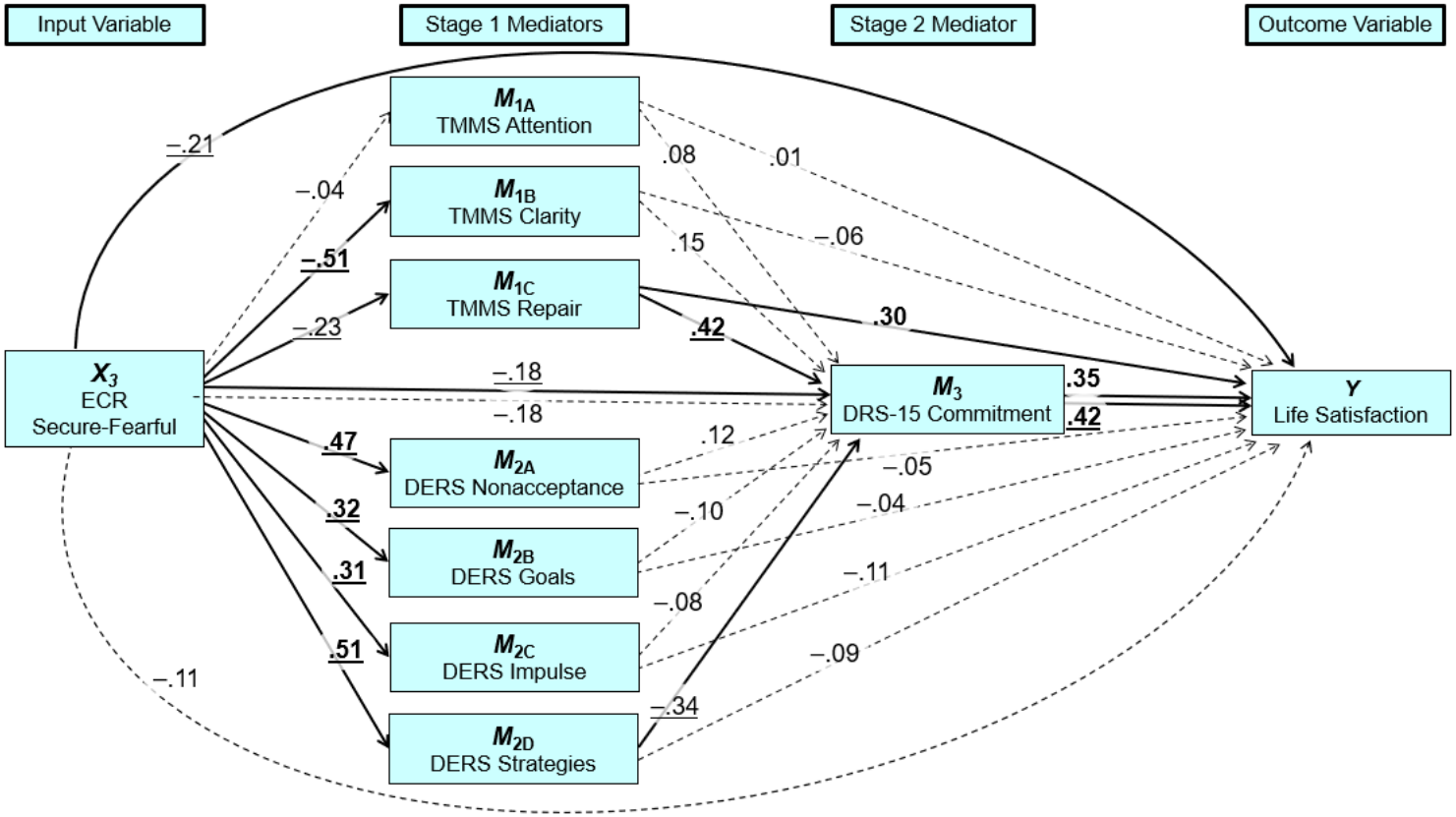
Parallel and Serial Mediation Path Model Predicting Life Satisfaction with Adult Attachment Avoidance and Either Trait Emotional Intelligence or Difficulties in Emotion Regulation



Note. Solid path lines indicate a statistically significant path coefficient; dashed lines indicate a non-significant path coefficient (see Tables 10 and 11). Although the TMMS and the DERS are depicted in the same model here, they were analyzed separately due to limitations with PROCESS Model 80. Where two paths connect variables, the top path represents the model including the TMMS; the bottom path represents the model including the DERS. ECR = Experiences in Close Relationships Scale. TMMS = Trait Meta-Mood Scale. DERS = Difficulties in Emotion Regulation Scale. DRS-15 = Dispositional Resilience Scale-15. $p < .05$. $\mathbf{p < .01}$. $\mathbf{p < .001}$.

Figure 5

Parallel and Serial Mediation Path Model Predicting Life Satisfaction with the Adult Attachment Secure-Fearful Axis and Either Trait Emotional Intelligence or Difficulties in Emotion Regulation



Note. Solid path lines indicate a statistically significant path coefficient; dashed lines indicate a non-significant path coefficient (see Tables 12 and 13). Although the TMMS and the DERS are depicted in the same model here, they were analyzed separately due to limitations with PROCESS Model 80. Where two paths connect variables, the top path represents the model including the TMMS; the bottom path represents the model including the DERS. ECR = Experiences in Close Relationships Scale. TMMS = Trait Meta-Mood Scale. DERS = Difficulties in Emotion Regulation Scale. DRS-15 = Dispositional Resilience Scale-15. $p < .05$. $\mathbf{p < .01}$. $\mathbf{p < .001}$.