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AN EVALUATION OF A MEDIATIONAL MODEL OF ADOLESCENT GLOBAL LIFE SATISFACTION

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AN EVALUATION OF A MEDIATIONAL MODEL OF ADOLESCENT GLOBAL LIFE
SATISFACTION

by

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I would like to thank my wife, Genevieve, for her constant love and support. I would also like to thank my parents and grandparents for instilling the values of education and hard work in me. Finally, thank you to my major professor, Scott Huebner, and all of my academic mentors for encouraging me throughout graduate school.

ABSTRACT

This study extended previous research by simultaneously examining determinants and presumed psychosocial mechanisms related to the development of individual differences in adolescent life satisfaction, based on Evans' (1994) proposed model. Specifically, this study assessed the relations between personality (extraversion, neuroticism) and environmental experiences (stressful life events) on early adolescents' global life satisfaction as mediated by approach and avoidance coping behaviors using a sample of 529 students from one middle school in the south eastern United States. The results of this study found partial evidence to support Evans' model. Statistically significant relations were found for a number of individual pathways between personality and environmental variables (i.e., predictors) with coping variables (i.e., mediators) as well as between approach coping (i.e., one mediator) and life satisfaction (i.e., outcome). Additionally, a small but statistically significant pathway was found between extraversion and life satisfaction when mediated by approach coping. Implications and future directions were also discussed.

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LIST OF ABBREVIATIONS

JEPQR-A.....	Abbreviated Junior Eysenck Personality Questionnaire
SLSS	Students' Life Satisfaction Survey
SRCS.....	Self-report Coping Scale

CHAPTER 1

INTRODUCTION

1.1 Positive Psychology

The field of psychology has historically focused on assessing and treating a person's weaknesses. In the past 100 years, psychologists have become increasingly adept at focusing on individual weaknesses and developing treatments to remediate these weaknesses. Early identification of psychological disorders such as learning disabilities, emotional and behavioral disorders, depression, and anxiety are occurring earlier in schools, and mental health professionals are beginning to provide effective therapies to treat these disorders.

Although assessments and interventions for mental health problems have become increasingly advanced, new research suggests that mental health professionals are missing an important component of individual functioning when they focus solely on deficits (Antaramian, Huebner, Hills & Valois, 2010; Greenspoon & Saklofse, 2001). In the past thirty years, psychologists have begun to move beyond a deficit-focused model to assess individual strengths in addition to weaknesses. The field of positive psychology has advocated a move away from the traditional deficit-focused model in psychology toward a comprehensive model of mental health (Seligman & Csikzenmihalyi, 2001). Positive psychologists attempt to assess individual weaknesses *and strengths* in order to provide a more complete understanding of the client and to incorporate strengths in

intervention plans (Seligman & Csikszentmihalyi, 2001). In doing so, researchers have suggested that a mental health professional can learn important information about the functioning of the client above what would be gathered in a standard psychological assessment (Antaramian, Huebner, Hills & Valois, 2010).

Positive psychological research first developed a strong research base exploring adult well-being. For example researchers have found that indicators of adult well-being can be important predictors of work, social, and physical health outcomes (Lyubomirsky, King & Diener, 2005). Furthermore, researchers have begun to develop models to attempt to explain positive well-being in adults, including the psychosocial mechanisms that account for the individual differences (Evans, 1994; Lent, 2004).

1.2 Life Satisfaction

One widely used construct in positive psychology is life satisfaction, which is defined as a person's overall evaluation of her life based on her own criteria (Shin & Johnson, 1978). This definition of life satisfaction reflects two important criteria. First, life satisfaction is primarily a measure of a person's *cognitive* evaluation (e.g., thoughts, judgments) of their life. Life satisfaction is distinguishable from a person's affective (i.e., emotional) evaluations because life satisfaction reflects a measure of individuals' summary judgments of their lives as a whole whereas emotional well-being reflects a measure of individuals' emotions in response to specific life experiences (Diener, Oishi & Lucas, 2003).

Second, life satisfaction is a *global* measure of a person's satisfaction with her life. Global measures of life satisfaction are distinct from other quality of life measures that attempt to capture a person's satisfaction with specific domains in their life. For

example, some measures of domain-specific life satisfaction measure a child's satisfaction with school, family, or friends. By contrast, life satisfaction (also referred to as global life satisfaction) is a measure of a person's overall life satisfaction without restriction to a particular domain.

Previous researchers who have examined levels of life satisfaction in children and adults have shown that both groups tend to report moderately high levels of life satisfaction on average. Diener and Diener (1996), for example, reported that the mean level of life satisfaction across 43 countries was 6.33 on a scale that ranged from 0 to 10. The same authors reported the mean level of life satisfaction in the United States as 7.73 (SD: 1.83). Huebner, Drane, and Valois (2000) found that mean levels of life satisfaction are also moderately high for children and adolescents. The authors found the mean level of life satisfaction for approximately 5,500 American high school students was approximately 5.30 (SD: 1.3) on a scale ranging from 0 to 7 and concluded that mean levels of life satisfaction for high school students typically fall in the "pleased" to "delighted" range. Nevertheless, significant variability exists in youth's levels of life satisfaction, with as many as 10 % of the students reporting high dissatisfaction with their lives.

1.3 Presumed Determinants of Youth Global Life Satisfaction

Researchers have also shown that global life satisfaction is highly correlated with a number of important outcomes, such as engagement in school, positive social relationships, and improved emotional outcomes (see Proctor, Linley & Maltby, 2009). In a number of studies, researchers have examined presumed determinants of individual differences in youth life satisfaction, such as demographic variables (e.g. sex, age, race),

social, emotional, and environmental constructs (Procter, Linley, & Maltby, 2009). The following sections review existing research on demographics and life satisfaction (2.1), relationships and life satisfaction (2.2), coping and life satisfaction (2.3), and environmental factors and life satisfaction (2.4).

1.4 Demographics and Life Satisfaction

Researchers who have examined the relationships between demographic variables and life satisfaction have found small effects of demographic variables at best (e.g., age, gender, race, SES) on life satisfaction (Procter, Lindley, & Maltby, 2009). In a review of the psychometric properties of five life satisfaction measures, Gilman and Huebner (2000) found small effect sizes in the relations between life satisfaction and demographic variables. Specifically, they noted that several studies have shown small correlations between demographic variables such as age, gender, and race for five widely used measures of child and adolescent global life satisfaction, including: the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), Students' Life Satisfaction Scale (SLSS; Huebner, 1991), and Perceived Life Satisfaction Scale (PLSS; Adelman, Taylor, & Nelson, 1989).

1.5 Interpersonal Relationships and Life Satisfaction

Researchers who have examined the relation between life satisfaction and family relationships have found substantial, positive relations. Family social support has been identified as an especially important variable related to positive life satisfaction (Oberle, Schonert-Reichel, & Zumbo 2011; Gilman & Huebner, 2003). Furthermore, Suldo and Huebner (2004) found that an authoritative parenting style is also positively related to life satisfaction in adolescents.

In addition to family support, researchers have also found that peer relationships are an important factor in the development of positive life satisfaction (Oberle, Schonert-Reichel, & Zumbo 2011). Nickerson and Nagle (2004) found positive peer relationships predicted life satisfaction more strongly for older adolescents compared to younger adolescents and children. This finding suggests that the effect of relational variables on life satisfaction may be moderated by an individual's maturation level.

1.6 Coping and Life Satisfaction

Lazarus and Folkman (1987) defined coping as a person's cognitive appraisal and coping behaviors in response to negative life events. Roth and Cohen (1986) identified coping as (1) approach coping and (2) avoidance coping. (1) Approach coping is defined as a coping behavior that primarily involves using problem-solving strategies to alter the stressor. Individuals who engage in approach coping behaviors often alter their own behavior and concentrate on specific behaviors to directly address the stressor. (2) Avoidance coping is defined as an indirect coping behavior that primarily involves the management of a person's emotional response associated with the stressor. Individuals who engage in avoidance coping behaviors often cope by avoiding the stressor, distancing themselves from the stressor, or ruminating on their emotional response.

Although a number of researchers have examined the relations between coping mechanisms and psychopathology (see Clarke, 2005), only a few studies have examined the relations between coping behaviors and life satisfaction. Fernando (2008) found significant positive relations between life satisfaction and approach coping behaviors as well as significant negative relations between two types of avoidance coping behaviors: internalizing and externalizing coping. However, she observed non-significant relations

between the avoidance behavior of distancing and life satisfaction. Saha (2011) also investigated the relations between life satisfaction and coping behaviors. Saha demonstrated that approach coping style is positively related to changes in life satisfaction across a one-year period. Like Fernando (2008), Saha also found a non-significant relation between avoidance coping behaviors and life satisfaction.

In a review of developmental pathways of coping behaviors, Zimmer-Gembeck and Skinner (2011) found that children and adolescents engage in different coping behaviors throughout development in response to stress. The authors found younger children engage in coping behaviors that rely on adults, while adolescents engage in more independent coping behaviors. The authors also found that older children engaged in a wider range of coping behaviors in response to different types of stressors. This finding suggests that adolescents may have a wider range of coping behaviors and have a stronger ability to differentiate between what is appropriate and inappropriate.

1.7 Physical Environment, Culture and Life Satisfaction

Research examining neighborhood, city, state and national differences in life satisfaction has found small to moderate effects for these differences. However, research in the area of community level differences is sparse. Some research suggests little evidence for socioeconomic (SES) as a predictor of differences in life satisfaction (Gilman, Huebner, & Laughlin, 2000; Louis & Zhao, 2002). Nickerson and Nagle (2004) demonstrated parent and peer alienation was negatively related to environmental satisfaction, suggesting that social support and environmental factors may interact. Evidence presented by Oberle, Schonert-Reichel, and Zumbo (2011) suggested that

neighborhood differences such as perceived neighborhood social support are positively related to adolescent life satisfaction.

Researchers examining cultural differences and life satisfaction suggest some differences in overall levels of life satisfaction (Oishi, Diener, Lucas, & Suh, 1999). However, Park and Huebner (2005) suggested adolescents might conceptualize life satisfaction differently across cultures. Park and Huebner (2005) found that Korean adolescents reported lower levels of life satisfaction compared to American adolescents. Additionally, level of school satisfaction contributed to overall life satisfaction for only Korean adolescents. By comparison, self-satisfaction was a stronger correlate of global life satisfaction for American adolescents. The authors concluded that differences across Eastern and Western cultures influence adolescents' conceptualizations of life satisfaction (i.e. on average, adolescents from Eastern cultures weigh family satisfaction greater than adolescents from Western nations). Liu (2005) also found that adolescents with lower levels of life satisfaction who are from Eastern nations are more likely to report symptoms of physical illness.

1.8 Summary of Findings

Although previous research suggests that life satisfaction is moderately related to relational, emotional, and environmental constructs, studies have found small or no relationship between demographic variables and life satisfaction. The aforementioned studies provide a good initial understanding of empirical relationships between a variety of individual and environmental variables and life satisfaction. However, the current body of research is primarily atheoretical (Huebner, 2004). To provide a comprehensive framework for understanding the development of life satisfaction, Evans (1994) proposed

one theoretical model to explain the development of life satisfaction that incorporates some of the major empirical research exploring the presumed determinants of life satisfaction described above.

1.9 Evans (1994) Model of Child Life Satisfaction

In a review of research on life satisfaction, Evans (1994) proposed a biosocial-cognitive model to explain the development of life satisfaction. The model proposed by Evans (1994) suggests that personality traits along with environmental factors directly and indirectly affect life satisfaction. Evans suggested that a variety of cognitive and behavioral mechanisms mediated the relations among environmental factors, personality factors and the outcome variable of life satisfaction. Since the time that Evans proposed the model, research related to the determinants and mechanisms by which life satisfaction develops in children and adolescents has grown. The extant body of research supports parts of the model proposed by Evans and provides important clues to mechanisms underlying the development of positive life satisfaction in youth. Although empirical studies have tested components of Evans' model, no study has tested Evans' complete model of life satisfaction with youth. Given that existing research has primarily involved non-experimental and non-longitudinal methods, empirical support is limited for Evans' model. The following sections review some of the empirical evidence related to the model proposed by Evans. Specifically, the following sections review the empirical support on the relations between (a) personality and life satisfaction, (b) stressful life events and life satisfaction, (c) coping, (d) personality and coping, (e) stressful life events and coping behavior, and (f) coping behavior and life satisfaction.

1.10 Personality and Life Satisfaction

Research shows that personality traits are moderately correlated with life satisfaction in children and adolescents (Fogle, Huebner & Lauglin, 2002). Although the causal pathway between life satisfaction and personality traits is unclear, Tellegen, Lykken, Bouchard, Wilcox, Segal, and Rich (1988) suggested that personality traits are highly heritable. That is, personality traits are considered to develop very early in life and to be determined by biological and genetic factors. Tellegen et al. (1988) found that approximately 50% of the variance in personality traits is associated with genetic influences and approximately 50% of the variance can be explained by environmental differences. This study also supported previous personality research indicating personality traits to be relatively stable across time. Given the stability of personality traits, Diener (1996) argued that personality traits are temporally precedent to life satisfaction and predispose individuals to different levels of life satisfaction. However, Diener cautioned against using personality traits as the sole predictor of life satisfaction, given the research showing that environmental characteristics also play a significant role in the development of life satisfaction.

Research on specific personality traits is often organized around the five major traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism. Two personality traits with moderate correlations to life satisfaction are extraversion and neuroticism (Steel, Schmidt & Shultz, 2008). Steel, Schmidt and Shultz found evidence to suggest a positive relation between life satisfaction and extraversion and a negative correlation with life satisfaction and neuroticism. These findings are also consistent with Davidson (2005), who found that neural connections in the brain between the amygdala

and prefrontal cortex provide a neurological explanation of the relations between trait emotional responses (i.e., personality traits) and affect.

Significant relations between extraversion and neuroticism and life satisfaction have also been found in samples of children and adolescents. For example, Greenspoon and Saklofske (2001) and Lyons, Huebner, Hills and Shinkareva (2013) found that extraversion and neuroticism were both significant predictors of life satisfaction and externalizing and internalizing behaviors in a sample of elementary and middle school students. McKnight, Huebner and Suldo (2002) also found moderate correlations between extraversion and neuroticism and life satisfaction in a sample of American students in grades 6 through 12. Finally, Huebner (1991) also found moderate, statistically significant correlations between life satisfaction and extraversion and neuroticism in samples of American children.

1.11 Stressful Life Events and Life Satisfaction

In addition to personality as an important predictor of life satisfaction in children and adults, researchers have found that environmental differences are significant predictors of life satisfaction. Steel, Schmidt, and Shultz (2008) estimated that approximately 50% of the variability in life satisfaction is attributable to environmental variables. One area of significant study is the role of interpersonal relationships in the development of life satisfaction. In general, life satisfaction is moderately correlated with positive interpersonal relationships. However, the strength of these correlations depends on the type of relationship (e.g., close friend, sibling, parent, and teacher). Shek (1997) found that positive family relationships are predictive of positive life satisfaction in adolescents. Furthermore, research on the relation between life satisfaction and parenting

with a sample of school students indicates that life satisfaction correlates more highly with authoritative parenting styles relative to other types of parenting styles (e.g., authoritative, permissive; Suldo & Huebner, 2004). This relation may suggest that prosocial mechanisms (e.g., parenting styles) mediate the relation between family interaction and life satisfaction. Dew and Huebner (1994) found that quality of parent relations accounted for substantial variance in life satisfaction in high school students in a sample of American adolescents. Life satisfaction and peer friendships also appear to be significantly related. Nickerson and Nagle (2004) found that the importance of friendships correlates more strongly with life satisfaction as American children move into adolescence, however, this pattern was not found in a study of Korean adolescents (Park & Huebner, 2005).

In addition to social relationships, other research on life satisfaction and environmental factors has examined the relations between stressful life events and life satisfaction. Researchers have examined this relation across different conceptualizations of stressful life events. For example, studies have conceptualized stressful life events in terms of valence (positive or negative stressors), magnitude (major or minor stressors), and controllability (controllable or uncontrollable stressors). In studies examining the magnitude of stressful life events, moderate correlations between major stressful life events (e.g., death of close friend, divorce of parents, relocation) and life satisfaction have been found. Headey and Wearing (1989), for example, found that stressful life events predicted additional variance in life satisfaction above and beyond personality traits (extraversion and neuroticism) for a sample of approximately 1,000 Australian adults. Ash and Huebner (2001) found support for major and minor stressors as important

predictors of life satisfaction among adolescents. McKnight, Huebner and Suldo (2002) also found that stressful life events were significantly negatively correlated with adolescent life satisfaction. In addition to magnitude, McCullough, Huebner, and Laughlin (2000) explored the relationship between the magnitude and valence of stressors on life satisfaction. The authors found that, positive minor life events significantly (and positively) correlated with life satisfaction and negative minor life events significantly (and negatively) correlated with positive affect. Additional studies have examined the relation between controllability of stressors and its relation to coping processes and life satisfaction. For example, Ash and Huebner (2001) found some support to suggest that adolescent perceptions about the controllability of stressful life events were significantly related to life satisfaction.

1.12 Personality and Coping

Compas, Connor-Smith, Saltzman, Thomsen, and Wadsworth (2001) as well as Conner-Smith and Flachsbart (2007) examined theoretical and empirical studies and found correlations between personality traits and coping. Researchers suggest that personality is an important predisposing factor related to individual differences in coping behaviors (Long & Sanster, 1993). Bolger (1990), for example, reported that higher levels of neuroticism were associated with avoidance coping behaviors (e.g., wishful thinking, self-blame) for a sample of undergraduate premedical students. Lengua and Long (2002) found that negative emotionality was positively related to avoidance coping behaviors. Surprisingly, the authors found that positive emotionality was not correlated with approach coping behaviors.

Although research has shown significant relations between personality and avoidance coping behaviors, the research that has examined the relation between personality and approach coping behaviors is mixed. Long and Sanster (1993) as well as Lengua and Long (2002) both observed no relation between personality and approach coping behaviors. However, other studies have found a significant association between personality and approach coping behaviors (see Conner-Smith & Flachsbart, 2007). For example, research on adults with multiple sclerosis has found that personality traits such as extraversion were predictive of adaptive coping strategies (Goretti et al., 2009). Although this relation has been studied far less in samples of children, a few studies have examined the relations between personality traits and coping.

1.13 Environmental Stressors and Coping

Researchers have shown positive outcomes for individuals who engage in approach coping behaviors under stress. Pruess and Dubow (2004) found that academically gifted sixth grade students engaged in more approach coping behaviors when faced with stressful life events compared to typical peers. The authors concluded that approach coping is one mediator of stress related to academic success. In a study of adolescents, Kardum and Krapic (2002) found stressful life events positively and moderately predicted approach coping behaviors. Other studies have shown that adaptive coping strategies moderated the effect of stressors on academic, physical and emotional health (Kraag, Zeegers, Kok, Hosman & Abu-Saad, 2006; Suldo, Shanessy, & Hardesty, 2008; Thomsen, Hockett, Abraibesh & Witt, 2002).

By contrast, research has linked negative outcomes for individuals who engage in avoidance coping behaviors under stress. Landis, Gaylord-Harden, Malinowski, Grant,

Carleton, and Ford (2007) demonstrated that adolescents who engaged in avoidance coping behaviors were more likely to report feelings of hopelessness in the presence of both controllable and uncontrollable stressors. Tolan, Gorman-Smith, Henery, Chung and Hunt (2002) also reported that avoidance coping behaviors were linked with behavioral problems such as depression and aggression. Finally, researchers suggest that avoidance coping behaviors may not promote positive long-term functioning (see Garbarino, Kostelny, & Dubrow, 1991). Kardum and Krapic (2002) as well as Seiffge-Krenke (2000) found that stressful life events were positively correlated with avoidant coping behaviors. These results suggest that the type of coping behavior is an important variable to consider in understanding an individual's adaptation.

1.14 Gender and coping

Researchers have found mixed results when examining the relation between gender and coping strategies in samples of adolescents. For example, some researchers have found that girls are more likely to engage in approach coping behaviors compared to boys (see Blanchard-Fields, Sulsky, & Robinson-Whelen, 1991; Perskike & Seiffge-Krenke, 2012). However, some studies have found the opposite is true; girls more frequently engage in avoidance coping behaviors than boys (see Al-Bahrani, Alhadfri, Alkharuis, Kazem, & Alzubiadi, 2013; Tompkins, Hockett, Abraibes, & Witt, 2011).

Eschenbeck, Kohlmann, and Lohaus (2007) proposed that these heterogeneous findings suggest that the relation between coping style and gender should be more closely studied. Eschenbeck concluded that the greater inconsistency in findings with children compared to those of adults suggests an interaction between gender and development may exist. Al-Bahrani, Alhadfri, Alkharuis, Kazem, and Alzubiadi (2013) also

hypothesized that heterogeneous findings in adolescents may suggest that other factors (e.g., family background, type of stressors, culture) may better explain coping style rather than gender.

1.15 Coping and life satisfaction

Although limited research has been conducted to investigate the relation between approach coping behaviors and life satisfaction, early research suggests a positive relation between these two variables. These findings are consistent with previous work that found positive relations between approach coping behaviors and positive long- term functioning (Garbarino, Kostelny, & Dubrow, 1991). Engin (2006), for example, found that approach coping behaviors positively correlated with life satisfaction in a sample of Turkish undergraduate students. These results have also been replicated in studies with children. For example, previous studies have suggested a significant relation between approach coping behaviors and life satisfaction (Suldo, Shaunessy & Hardesty, 2008; Lightsey & Sweeny, 2008).

Studies examining the relation between children's life satisfaction and avoidance coping behaviors have consistently found moderate, negative correlations. Studies that have explored the relations between internalizing and externalizing coping behaviors (two of three avoidance coping behaviors identified by Causey and Dubow (1992) and life satisfaction have shown significant negative relations (e.g., McKnight, Huebner & Suldo, 2002; Suldo & Huebner, 2006; Huebner & Alderman, 1993; Suldo, Shaunessy & Hardesty, 2008). Huebner and Gilman (2006) also reported that students with the lowest levels of life satisfaction demonstrated the greatest levels of maladaptive behaviors such as external locus of control, interpersonal problems, and academic difficulties. These

results are consistent with Evans' (1994) model of life satisfaction that suggests coping behavior is significantly related to environmental stressors and life satisfaction.

1.16 Conclusions

The previous sections reviewed research that investigated individual components of the theoretical model proposed by Evans (1994). These studies provide initial evidence of significant relations among environmental factors, personality, and life satisfaction. For example, empirical studies that have tested the association between life satisfaction and extraversion and neuroticism have found moderate correlations with life satisfaction. In general, extraversion is positively related to life satisfaction and neuroticism is negatively related to life satisfaction. Furthermore, studies examining significant life events and life satisfaction have found these environmental variables account for up to 50% of the variance in life satisfaction (Steel, Schmidt, & Shultz, 2005). These studies suggest that environmental events are also significantly related to life satisfaction.

Although existing research has shown significant cross-sectional relations between the individual components of Evans' (1994) model of life satisfaction (e.g., research has established a relation between life satisfaction and personality), few studies have simultaneously tested the effects of a more complete representations of Evans' model of personality, environmental, and behavioral variables on the life satisfaction of children and adolescents using a longitudinal design.

1.17 Current study

The current study will extend previous research by simultaneously examining determinants and presumed psychosocial mechanisms related to the development of individual differences in adolescent life satisfaction, based on Evans' (1994) proposed

model. Simultaneously assessing the effects of environmental, personality, and coping variables on the development of life satisfaction in a longitudinal analysis will provide a more accurate evaluation of the unique contributions of each of these variables in the context of the other variables. Specifically, this study will assess the relation between personality (extraversion, neuroticism) and environmental experiences (stressful life events) on early adolescents' global life satisfaction as mediated by approach and avoidance coping behaviors.

Based on the Evans' model and empirical evidence, I propose testing the model shown in Figure 1. The proposed model examines direct and indirect determinants of life satisfaction. Direct and indirect effects between the personality variables of extraversion and neuroticism and life satisfaction will be modeled as well as direct and indirect effects between stressful life events and life satisfaction. To provide additional support for personality, stressful life events, and coping behavior as determinants of life satisfaction, this model will also be used to predict changes in life satisfaction across time. The predictors will be used to test changes in early adolescents' life satisfaction across a 6-month period (see Figure 1).

1.18 Specific Aims and Hypotheses

I aim to address a gap in the child well-being literature by empirically testing a theoretical model of life satisfaction with a sample of middle school students. Specifically, I will test the influence of stressful life events, extraversion and neuroticism in predicting life satisfaction when mediated by coping behavior. These analyses will address the following research questions. (1) Is there a significant relation between stressful life events and coping behaviors at Time 1? (2) Is there a significant relation

between extraversion and coping behaviors at Time 1? (3) Is there a significant relation between neuroticism and coping behaviors at Time 1? (4) Is there a significant relation between coping behaviors and life satisfaction at Time 2 (controlling for life satisfaction at Time 1)? (5) Is coping behavior a significant mediator of the relation between stressful life events and life satisfaction at Time 1 (controlling for life satisfaction at Time 2)? (6) Is coping behavior a significant mediator of the relation between extraversion and life satisfaction at Time 2 (controlling for life satisfaction at Time 1)? (7) Is coping behavior a significant mediator of the relation between neuroticism and life satisfaction at Time 2 (controlling for life satisfaction at Time 1)? (8) Is gender a significant predictor of life satisfaction at Time 2; or, does coping style significantly moderate this relation?

Based the Evans' model and empirical research, I expect to find significant direct and indirect effects in the relations between personality, stressful life events, coping and life satisfaction. Specific hypotheses for each path are described below.

1.19 Direct Effects

In the hypothesized model, direct effects represent direct relations between predictor and mediator variables and life satisfaction. Researchers suggest a positive relation between extraversion and life satisfaction and a negative relation between neuroticism and life satisfaction (see Proctor, Linley, & Maltby 2009 for a review). Therefore, a positive relation is hypothesized between extraversion at Time 1 and life satisfaction at Time 2 (path 1a). Likewise, a negative relation is hypothesized between neuroticism at Time 1 and life satisfaction at Time 2 (path 1b). Studies have also shown a negative relation between stressful life events and life satisfaction (Suldo & Huebner, 2004; McCullough, Huebner, & Laughlin, 2000; Headey & Wearing, 1989). Therefore, a

negative relation is hypothesized between stressful life events at Time 1 and life satisfaction at Time 2 (path 1c). Finally, a number of authors have found no relations between gender and life satisfaction (see Proctor, Linley and Maltby, 2009). Therefore, a non-significant relation is hypothesized between gender and life satisfaction (path 1e)

In addition to personality and environmental effects, research also suggests that coping behaviors have a direct effect on the development of life satisfaction (Causey & Dubow, 1992; McKnight, Huebner & Suldo, 2002; Suldo & Huebner, 2006; Huebner & Alderman, 1993). In general, avoidance coping behaviors are associated with lower levels of life satisfaction and approach coping behaviors are associated with greater levels of life satisfaction (Lengua & Long, 2002). Therefore, a positive relation is hypothesized between approach coping behaviors and life satisfaction at Time 2 (path 1f). A negative relation is hypothesized between avoidance coping behaviors at Time 1 and life satisfaction at Time 2 (path 1g).

1.20 Indirect effects

In the model, indirect effects represent the relations between predictor variables and the mediators in the model. Indirect effects provide information about causal mechanisms underlying the relation between the predictors and life satisfaction. I hypothesize that extraversion will be positively related to approach coping behaviors (path 2a) and negatively related to avoidance coping behaviors (path 2b) because research indicates extraversion promotes adaptive coping behaviors (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Rigby & Huebner, 2005). In contrast, research indicates that neuroticism and stressful life events are risk factors for maladaptive behaviors. Therefore, I hypothesize that neuroticism and stressful life events will both be

negatively related to adaptive coping behaviors (paths 2c and 2d) and positively related to avoidance coping behaviors (paths 2e and 2f). Researchers have found inconsistent relations between gender and both approach and avoidance coping behaviors. Therefore, a hypothesis for this relation was not formulated (Perskike & Seiffge-Krenke, 2012a; Al-Bahrani, Alhadfri, Alkharuis, Kazem, & Alzubiadi, 2013; paths 2h and 2j).

CHAPTER 2

METHOD

2.1 Participants

The archival dataset was provided by a middle school in a Southeastern state in the United States. As part of a school-wide survey of school climate, student engagement, and student well-being, students completed a variety of self-report questionnaires in Fall 2012 and Spring 2013. At Time 1, 529 students from grades 6-8 completed the survey. At Time 2, 387 completed the survey. This corresponds to a 27% attrition rate. Participants who completed the survey at Time 1 but did not complete the survey at Time 2 did so for unknown reasons. However, informal qualitative data collected suggest that students did not complete the survey at Time 2 because many voluntarily elected not to take the survey. Although quantitative data is not available to explain the missing data, this response rate is consistent with other longitudinal, survey research (Mroczek, 2007). The sample consisted of 137 sixth graders, 163 seventh graders, and 229 eighth graders at Time 1. The sample also consisted of 51% of girls and 19% of the sample participated in the free and reduced lunch program. In terms of racial makeup, 95% of the sample identified themselves as Caucasian, 2% identified themselves as African American, and the remainder identified themselves as from other racial backgrounds. Among the sample of students who did not complete survey at the second time point, 49% were girls, 18% participated in the free and reduced lunch program, 94% of the sample identified as Caucasian, 1% identified as African American and the

remainder were from other racial backgrounds. Chi-square tests on demographic variables were conducted to assess bias related to attrition between students who completed the surveys at Time 1 only and students who completed the surveys at both time points. There was no association between administration time and race, $\chi^2 (2) = .308, p=.857$, time and gender $\chi^2 (1) = .004, p=.949$, time and grade level $\chi^2 (2) = 4.006, p=.135$, or time and free and reduced lunch status $\chi^2 (2) = 0.017, p=.991$ suggesting comparability across samples.

2.2 Measures

School Records. Information regarding free or reduced lunch status were obtained from school records by authorized school personnel. All identifying information was removed from student data prior to data analysis for this research.

The Abbreviated Junior Eysenck Personality Questionnaire (JEPQR-A: Francis, 1996). The Junior Eysenck Personality Questionnaire (JEPQR) is a 12- item self-report scale based on Eysenck's theory of personality that measures extraversion and neuroticism. One item, "I feel like my life is not worth living" was removed at the request of the school principal. Students respond to questions in a "yes, no" format and higher scores indicated greater levels of the personality trait. The convergent validity of the JEPQR-A is supported by high correlations between the JEPRA and the JEPQR-A Extraversion scale ($r=0.91$) as well as the Neuroticism scale ($r= 0.91$) as reported by Francis (1996). Francis (1996) reported the coefficient alpha values as .66 and .70 for the Extraversion and Neuroticism scales respectively. In this study, the coefficient alphas for the Extraversion and Neuroticism scales equaled .68 and .70 respectively.

Stressful Life Events Scale (Johnson & McCutcheon, 1980). The Stressful Life Event Scale is a self-report measure in which participants indicate if they have experienced a particular stressful life event over the past 12 months. This scale includes 28 items that refer to controllable stressful life events and 17 items that refer to uncontrollable stressful life events. One item, “increased arguments with parents” was removed at the request of the school principal. Johnson and McCutcheon (1980) report test-retest reliability coefficients of .69 - .72 over a two-week period. They also provided evidence of concurrent validity through meaningful associations with measures of depression, locus of control, trait anxiety, school days missed, and health problems along with discriminant validity through a non-significant association with a measure of social desirability.

The *Self-Report Coping Scale* (SRCS; Causey & Dubow, 1992) is a 34-item measure that is comprised of two subscales measuring approach and avoidance coping behaviors. Respondents self-report coping behaviors based on a five-point Likert scale, in which 1 = Never and 5 = Always. Studies indicate sound psychometric properties for the Self-Report Coping Scale (SRCS). One factor analytic study with the SRCS provided support for its five subscales (Causey & Dubow, 1992). In addition, internal consistency reliabilities for the subscales range from .66 to .84 in prior research (Antaramian, Huebner, Hills & Valois, 2010; Causey & Dubow, 1992). Prior research also demonstrated two-week test-retest reliabilities ranging from .59 and .78 for the subscales (Causey & Dubow, 1992). The coefficient alpha of these scales ranged from .65 to .87 in this study.

The approach subscale is comprised of the sum of the scores on the Seeking Social Support, Self-Reliance and Problem Solving indices. The Seeking Social Support index is comprised of eight items, such as “Get help from a friend and “Ask a family member for advice”. The Self-Reliance and Problem Solving index also contains eight items and contains statements such as “Change something so things will work out” and “Try to think of a different way to solve it”.

The avoidance subscale is comprised of the sum of the scores on the Internalizing, Externalizing, and Distancing indices. The Internalizing index is comprised of seven items, such as “Worry too much about it” and “Become so upset that I can’t talk to anyone.” The Externalizing index includes four items, such as “Get mad and throw or hit something” and “Yell to let off steam.” The Distancing index includes seven items that contains items such as “Make believe nothing happened” and “Forget the whole thing”.

Students’ Life Satisfaction Scale (SLSS: Huebner, 1991). The SLSS is a seven-item self-report scale designed to measure global youth life satisfaction. Participants respond to statements about their perceived quality of life using a 6-item Likert scale (1=strongly disagree, 6= strongly agree). The seven items on the SLSS are domain free and do not address specific areas of satisfaction (e.g., satisfaction with school or family). Rather, the SLSS is meant to measure a child’s global, or overall, life satisfaction. Student responses are summed and averaged and higher average scores are considered an indication of higher levels of life satisfaction. Summaries of research have shown the SLSS to have good validity and reliability for elementary, middle, and high school students (Bender, 1997; Proctor, Linley & Maltby, 2009). For example, the SLSS correlates significantly with other measures of life satisfaction (Huebner, 1991) as well as

parent reports (Gilman & Huebner, 1997). In this study, the coefficient alpha equaled .81 at Time 1 and .85 at Time 2.

2.3 Data Analysis

To assess the mean levels of in life satisfaction for each individual based on the mechanisms outlined by Evans (1994), a multi-mediator model was estimated at Time 1 with baseline life satisfaction, stressful life events, extraversion, and neuroticism predicting Time 2 life satisfaction as mediated by approach and avoidance coping behaviors. All variables were converted to z-scores in order to estimate the mediated effect and to allow effects to be interpreted on a standard metric. Following from terminology introduced by Baron and Kenny (1986), two pathways were estimated. The “A Path” representing the effect of the predictors on the mediators was estimated first. Then the “B Path” was estimated to test the effect of the mediators on the outcome (for a review, see Fairchild & McQuillin, 2010). Missing data were treated using full information maximum likelihood which as been shown to be an acceptable method for data missing at random as well as missing completely at random (Enders & Bandalos, 2001)

Relations of predictors to mediators (A Path). To assess the effect of the predictors on the mediators, a multivariate regression equation was estimated in which baseline levels of extraversion, neuroticism, and stressful life events were used to predict baseline levels of approach and avoidance coping behaviors. These parameters were estimated only at Time 1 and do not reflect changes longitudinally (see equation 1).

$$\text{Approach} + \text{Avoidance} = \beta_0 + \beta_1(\text{Extraversion}) + \beta_2(\text{Neurot}) + \beta_3(\text{Stress}) + \beta_4(\text{Gender}) + \beta_5(\text{LS T1})$$

Relations of mediators to criterion variables (B Path). The impact of the mediators on life satisfaction was assessed using a multivariate regression. The regression equation included Time 1 life satisfaction, stressful life events, extraversion, neuroticism, approach and avoidance coping behaviors predicting Time 2 life satisfaction.

$$\text{LS. T2} = \beta_0 + \beta_1 (\text{LS. T1}) + \beta_2 (\text{Extraversion}) + \beta_3 (\text{Neurot}) + \beta_4 (\text{Stress}) \\ + \beta_5 (\text{Approach}) + \beta_6 (\text{Avoidance})$$

Relations of the predictors to the criterion variables (AB Path). The product of the beta coefficients from the “A” and “B” paths was calculated to obtain an estimate of the full mediated effect for each pathway. As described by MacKinnon (2008), the standard errors estimated from multi-mediator models are inaccurate because the product of two normal sampling distributions does not result in a normal sampling distribution. Following MacKinnon (2008), an empirical sampling distribution for each mediated pathway was estimated and confidence intervals for each pathway were constructed. Confidence intervals for the mediated pathways were estimated from using bootstrapped data.

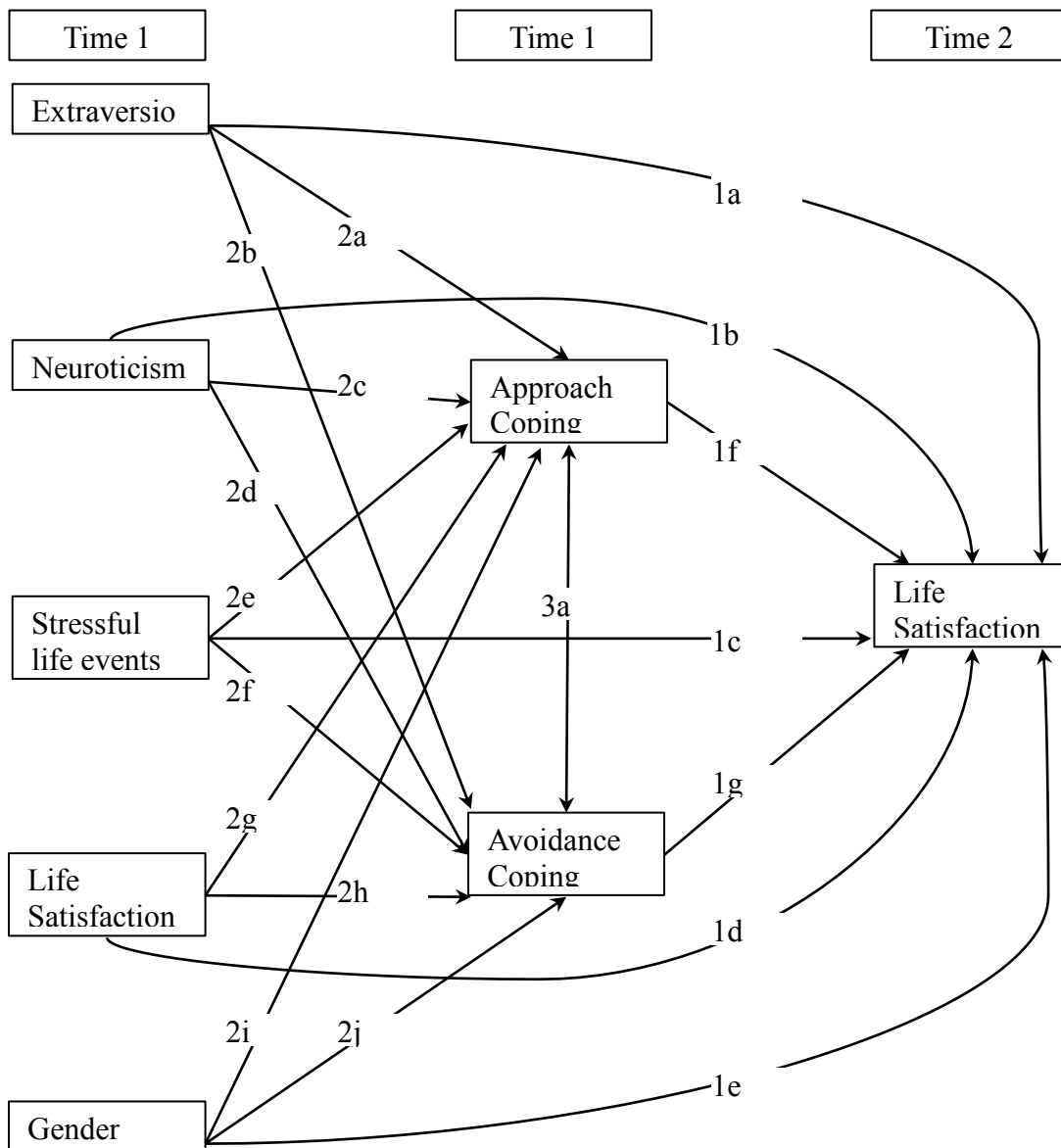


Figure 2.1: Hypothesized mediational model of life satisfaction

CHAPTER 3

RESULTS

3.1 Relations of Predictors to Mediators (A Path)

To assess the relations between the predictors and mediators, a multivariate regression equation was estimated in which stressful life events, extraversion, neuroticism and baseline levels of student life satisfaction predicted approach and avoidance coping behaviors. Table 1 shows the complete results of these analyses including standardized parameter estimates (i.e., beta weights) as a measure of effect size.

The parameter estimate between Extraversion at Time 1 predicting approach coping equaled 0.399 and was statistically significant $t(528) = 2.657, p = 0.008, \beta = 0.124$. Likewise, the parameter estimate between Neuroticism at Time 1 predicting approach coping equaled 0.218 and was statistically significant $t(528) = 1.982, p = 0.047, \beta = 0.093$. Finally, the parameter estimate between Life Satisfaction at Time 1 predicting approach coping equaled 0.266 and was statistically significant $t(528) = 7.281, p < 0.001, \beta = 0.328$. The relations between gender and approach coping was non-significant $t(528) = 1.560, p = 0.119, \beta = 0.068$.

In contrast, the Neuroticism score at Time 1 was the only predictor to significantly predict avoidance coping behaviors at Time 1. The parameter estimate between Neuroticism at Time 1 predicting avoidance coping equaled 0.746 and was statistically significant $t(528) = 8.773, p < 0.001, \beta = 0.369$. The relation between stressful life events at time 1 and avoidance

coping approached significance $t(528) = 1.926, p = 0.054, \beta = 0.127$. The relation between gender and avoidance coping was non-significant $t(528) = 0.177, p = 0.859, \beta = 0.007$.

Table 3.1: Parameter estimates for relations of predictors to mediators (A path)

Criterion	Predictor	B	β	S.E.	t-value	P-value
Approach Coping						
	Gender (1=Female)	0.101	0.068	0.065	1.560	0.119
	Extraversion T1	0.399	0.124	0.150	2.657	0.008
	Neuroticism T1	0.218	0.093	0.110	1.982	0.047
	Stressful Life Events T1	0.259	0.049	0.296	0.876	0.381
	Life Satisfaction T1	0.266	0.328	0.036	7.281	0.000
Avoidance Coping						
	Gender (1=Female)	0.008	0.007	0.047	0.177	0.859
	Extraversion T1	0.043	0.017	0.103	0.421	0.674
	Neuroticism T1	0.746	0.396	0.085	8.773	0.000
	Stressful Life Events T1	0.531	0.127	0.276	1.926	0.054
	Life Satisfaction T1	-0.039	-0.061	0.032	-1.222	0.222

3.2 Relations of Mediators to Criterion Variable (B Path)

To assess the relations between the mediators (approach and avoidance coping behaviors) with the criterion variable (life satisfaction at Time 2), a multiple regression was run in which the mediators and predictors were used to predict the criterion variable. The complete results of these analyses are reported in Table 2, which show the parameter estimates and tests of significance for all predictors included in the model. The parameter estimate between approach coping at Time 1 predicting life satisfaction at Time 2 equaled 0.128 and was statistically significant $t(528) = 1.965, p = 0.049, \beta = 0.100$. However, the parameter estimate between avoidance coping at Time 1 predicting life satisfaction at Time 2 equaled -0.080 and was not statistically significant $t(528) = -0.998, p = 0.318, \beta = -0.050$.

Table 3.2: Parameter estimates for relations of mediators to life satisfaction T2 (B path)

	B	β	S.E.	t-value	P-value
Gender (1=Female)	0.146	0.077	0.084	1.745	0.081
Approach Coping T1	0.128	0.100	0.065	1.965	0.049
Avoidance Coping T1	-0.080	-0.050	0.080	-0.998	0.318
Extraversion T1	0.020	0.005	0.172	0.119	0.905
Neuroticism T1	-0.170	-0.057	0.152	-1.117	0.264
Stressful Life Events T1	-0.876	-0.131	0.281	-3.111	0.002
Life Satisfaction T1	0.466	0.451	0.072	6.504	0.000

3.3 Relations of the Predictors to the Criterion Variables (AB Path)

Based on the empirical sampling distribution of 500 bootstrapped datasets, 95% confidence intervals were constructed to assess the effects of the predictors on the criterion variables. Confidence intervals that do not contain zero indicate a statistically significant effect at $p < 0.05$. The complete results of these indirect effects are reported in Table 3.

Only the pathway between extraversion at Time 1 and life satisfaction through approach coping was found to be statistically significant. The parameter estimate for this effect equaled 0.034, 95% CI [0.004, 0.140]. No other effect was found to be statistically significant.

Table 3.3: Parameter estimates for relations of predictors to Life Satisfaction (AB path)

Predictor	Mediator	B	β	95% CI
Extraversion	Approach coping	0.059*	0.014*	[0.004, 0.140]
Neuroticism	Approach coping	0.038	0.013	[-0.008, 0.095]
Stressful life events	Approach coping	0.031	0.005	[-0.078, 0.148]
Life Satisfaction T1	Approach coping	0.037	0.036	[-0.007, 0.078]
Extraversion	Avoidance coping	-0.004	-0.001	[-0.050, 0.018]
Neuroticism	Avoidance coping	-0.059	-0.020	[-0.226, 0.057]
Stressful life events	Avoidance coping	-0.042	-0.006	[-0.215, 0.046]
Life Satisfaction T1	Avoidance coping	0.003	0.003	[-0.004, 0.016]

* $p < 0.05$

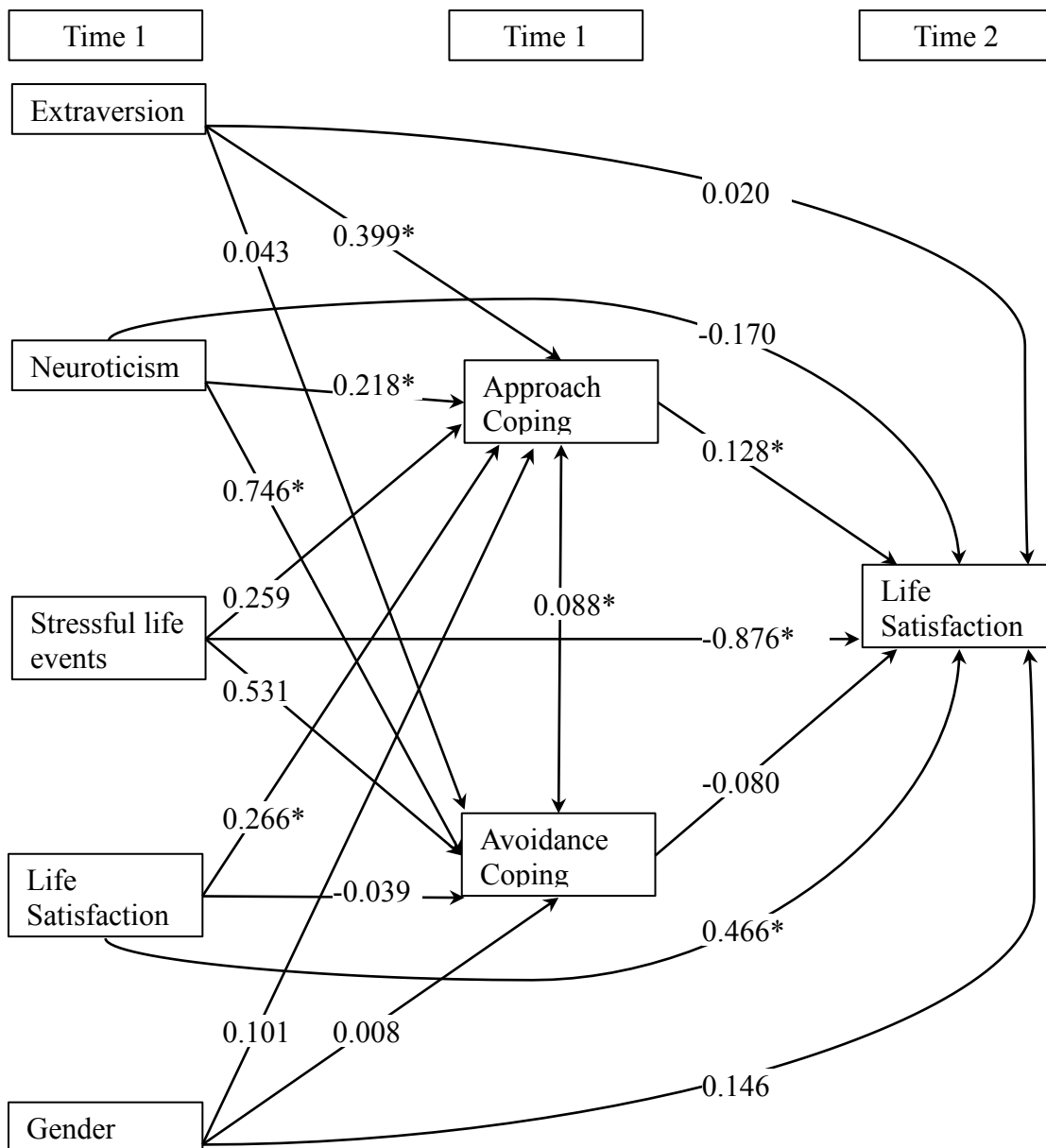


Figure 3.2: Path model of relations between predictors and life satisfaction (unstandardized coefficients)

CHAPTER 4

DISCUSSION

4.1 Implications

Research exploring the psychosocial mechanisms involved in the development of positive adolescent life satisfaction is in its infancy. The model proposed by Evans (1994) suggests that personality and environmental factors directly and indirectly affect the development of life satisfaction in children and adolescents through social behavioral mechanisms. To our knowledge, Lyons, Huebner, Hills, and VanHorn (2013) provided the first known longitudinal test of part of this model by exploring the relations between personality and environmental factors as mediated by two avoidance coping behaviors (i.e., internalizing and externalizing behaviors) over a 2-year period. The results from these analyses found partial support for the model proposed by Evans. Specifically, the authors found that linear change in life satisfaction was predicted by extraversion, neuroticism and stressful life events through internalizing coping behaviors. The current short-term longitudinal analyses extend on this previous work by examining a wider range of coping mechanisms that potentially mediate the relations between personality and environmental variables with life satisfaction.

The results indicated that extraversion and neuroticism were positively related to approach and avoidance coping behaviors. However, extraversion was positively related

to life satisfaction whereas neuroticism is negatively related to life satisfaction. The results of the analyses also indicated that one type of environmental variable (i.e., stressful life events) was negatively related to life satisfaction and approach coping and positively related to avoidance coping. These results also suggest that gender is not significantly related to approach and avoidance coping styles or life satisfaction after a six-month period. This suggests that further tests of gender interactions were not necessary. Finally, tests of a mediated relationship between personality and environmental variables and life satisfaction when mediated by coping behaviors found a significant mediated relationship between extraversion, life satisfaction and approach coping. Overall, these analyses partially support the model proposed by Evans (1994). The results of these analyses support findings from Lyons, Huebner, Hills and VanHorn (2013), indicating that adaptive social behaviors are positively related to the development of life satisfaction and maladaptive social behaviors are unrelated or negatively related to the development of life satisfaction. In addition to the overall findings, specific implications of these analyses are addressed below.

First, we addressed the statistical significance and magnitude of the relations between the predictor variables and mediators. The results of these analyses suggest small to medium effect sizes among the relations between extraversion, neuroticism and stressful life events and approach and avoidance coping behaviors. These results are consistent with previous research suggesting that extraversion is positively related to approach coping behaviors and neuroticism is positively related to avoidance coping behaviors (Conner-Smith & Flachsbart, 2007; Long & Sanster, 1993; Bolger, 1990). These results suggest that individuals who report greater levels of extraversion are more

likely to engage in approach coping behaviors whereas individuals reporting greater levels of neuroticism are more likely to engage in avoidance coping behaviors. This finding is consistent with previous research that suggests that extraverted individuals engage in approach coping behaviors (e.g., Conner-Smith & Flachsbart, 2007) and individuals reporting greater levels of neuroticism engage in avoidance coping behaviors such as wishful thinking and self-blame (e.g., Bolger, 1990). Finally, the results suggest that individuals who report greater frequencies of stressful life events engage in fewer approach-focused coping behaviors and more avoidance coping behaviors. This finding is consistent with a number of studies that report a similar relations between stressors and coping strategies (Pruess & Dubow, 2004; Kardum & Krapic, 2002; Suldo, Shanessy & Hardesty, 2008).

Second, we addressed the statistical significance and magnitude of the relations between mediators and criterion variable. The results reveal small, but statistically significant relations between approach and avoidance coping behaviors and adolescent-reported life satisfaction after a 6-month period. These results suggest that early adolescents who report greater frequencies of approach coping behaviors are more likely to report higher levels of life satisfaction after a 6-month period whereas individuals reporting higher frequencies of avoidance coping behaviors are more likely to report lower life satisfaction after a 6-month period. These results are consistent with previous research suggesting positive relations between approach coping behaviors and life satisfaction (Engin, 2006; Garbarino, Kostelny & Dubrow, 1991) as well as negative relations between avoidance coping behaviors and life satisfaction (e.g., Huebner & Alderman, 1993; McKnight, Huebner & Suldo, 2002; Suldo & Huebner, 2006).

Third, we evaluated the statistical significance and magnitude of the relations between the predictor variables and criterion variable. Only the mediating pathway between extraversion and life satisfaction through approach coping behaviors was found to be significant, and a small effect size was observed. Although few studies have been conducted to evaluate indirect effects between personality variables and life satisfaction, this result is somewhat consistent with previous cross-sectional research that suggests small, but statistically significant indirect effects for these relations (Bolger, 1990; Fogle, Huebner & Laughlin, 2002; Long & Sangster, 1993).

Finally, we evaluated the relations between gender, coping and life satisfaction and found that gender was unrelated to early adolescents' life satisfaction or coping styles. The finding that gender is not significantly related to life satisfaction after a six-month period is consistent with previous research that suggests demographic variables, including gender are unrelated to a person's self-assessed global life satisfaction (Procter, Lindley & Maltby, 2009; Gilman & Huebner, 2000). Results also suggest that gender was not significantly related to approach or avoidance coping style. Although gender differences in the use of coping strategies in adult samples is well documented (Tamres, Janicki & Helgeson, 2002), there is more heterogeneity in relations between gender and coping styles for adolescents. Hampel and Petermann (2005), for example, found that females used more avoidant coping strategies (e.g., avoidance and aggression) compared to males. However, this finding is inconsistent with other research that suggests that adolescent girls are more likely to engage in approach coping strategies (Eschenbeck, Kohlmann, & Lohaus, 2007) such as seeking social support and problem solving whereas boys are more likely to engage in avoidant coping strategies. The non-significant

relationship between gender, coping and life satisfaction suggests the mechanisms tested in this model operate similarly for boys and girls.

Overall, this study provides additional empirical support for the theoretical model presented by Evans (1994). The results indicate that the personality trait of extraversion is linked to positive life satisfaction in early adolescents through the use of approach coping behaviors. Specifically, when confronted with stressful interpersonal circumstances, adolescents who are high in extraversion are more likely to use approach coping strategies, which in turn are more likely to lead to higher life satisfaction.

These findings should inform professional practice of school psychologists and other mental health professionals working in the schools. Previous researchers have also found that individuals who experience low life satisfaction regardless of their level of psychopathology are at risk for a variety of negative outcomes such as lower grades, attendance, and poor social behaviors (Lyons, Huebner & Hills, 2012; Suldo, Thalji, & Ferron, 2011). The results of this study are consistent with previous research that suggest the importance of measuring positive coping skills (i.e., approach coping) in addition to negative coping skills in order to better understand (and promote) student well-being. Additionally, these findings suggest that interventions targeting student life satisfaction may improve life satisfaction by teaching skills to promote the use of positive coping skills.

4.2 Limitations and Future Directions

Although this study provides additional support for the model proposed by Evans (1994), future studies should be conducted to extend on the results to provide researchers with a more comprehensive understanding of the development and maintenance of life

satisfaction in adolescents. Future studies should extend on these analyses in several ways.

First, future studies should examine a wider range of variables as covariates and mediators. For example, this study only included acute, uncontrollable life stressors and previous studies have shown significant interactions between the type of stressor and coping style and life satisfaction (see Ash & Huebner, 2001; Headey & Wearing, 1989; McCullough, Huebner, & Laughlin, 2000). Evans (1994) also identified other mediators such as social support, affect, and other general skills (e.g., problem solving, communication) that theoretically mediate the relationship between personality and environmental variables with life satisfaction. Including a broader scope of mediators in the Evans' model may help to better understand the relationship between personality and environmental variables with life satisfaction. For example, Rigby and Huebner (2005) found that attribution style significantly mediated the relationship between neuroticism and life satisfaction in a cross-sectional study of adolescents. Therefore, future studies should strive to incorporate a broader range of mediators to test a more comprehensive model of life satisfaction development. For example, future studies may incorporate a wider range of specific approach (e.g., seeking social support, problem solving) and avoidance (e.g., distancing, externalizing) coping variables.

Second, future studies should test this model using a more diverse sample. This study only included participants from one middle school in the Southeast US with relatively homogeneous racial, ethnic, and socioeconomic backgrounds. Although researchers have found weak associations between racial, ethnic and socioeconomic background and life satisfaction in developed countries, such as the US, researchers have

found that significant relations between these demographic variables and coping strategies. For example, Umana, Varagas-Chanes, Garcia, and Gonzales-Backen (2008) found that ethnic identity predicted approach coping strategies in a sample of Latino adolescents. Plucker (1998) also found moderate differences in coping strategies between Caucasian and African American adolescents. Specifically, Plucker found that African American adolescents tend to seek spiritual support more frequently than Caucasian students. Given these differences, future studies may examine differences in the effect of race on the development of life satisfaction as mediated by a variety of adaptive and maladaptive coping strategies.

Third, future studies should examine the relation between gender, coping style, and life satisfaction. Research on adults has shown significant gender differences in coping styles while research on adolescents has yielded mixed findings. Eschenbeck, Kohlmann and Lohaus (2007) suggest that the inconsistent findings across studies examining the relations between gender and coping in adolescents may be the result of unmeasured developmental or environmental factors. The findings of this study also suggest that more research needs to be conducted over a longer period of time to better understand the developmental trajectory of the relations between gender, coping and life satisfaction. Previous research suggests that gender moderates coping style for adults (see Tamres, Janicki, Helgeson, 2002 for a review), but the findings regarding this relation have been inconsistent in samples of adolescents (see Eschenbeck, Kohlmann, & Lohaus, 2007). Therefore, future longitudinal studies examining the relations between gender, coping style and life satisfaction throughout adolescence to capture possible developmental differences in these relations.

Finally, future studies should employ a variety of study designs in order to make stronger causal inferences about the relationship between personality, stressful life events, coping and life satisfaction. Although longitudinal studies relying on adolescent self-report provide stronger evidence for the existence of causal relationships, non-randomized study designs do not provide the strongest evidence for causal relationships. Therefore, researchers should seek to use methods that will allow them to make stronger claims about causal relations between variables.

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APPENDIX A – SURVEY ADMINISTERED TO STUDENTS AT TIME 1

Part I

Student Engagement Instrument

◆◆◆ Choose the option that best represents your thoughts about each item. There are no right or wrong responses.

Circle 1 if you **STONGLY DISAGREE** with the sentence

Circle 2 if you **DISAGREE** with the sentence

Circle 3 if you **AGREE** with the sentence

Circle 4 if you **STRONGLY AGREE** with the sentence

1. The tests in my classes do a good job of measuring what I'm able to do.
2. I enjoy talking to the students here.
3. Going to school after high school is important.
4. My education will create many future opportunities for me.
5. When something good happens at school, my family/guardian(s) want to know about it.
6. I plan to continue my education following high school.
7. When I do well in school it's because I work hard.
8. When I have problems at school my family/guardian(s) are willing to help me.
9. My family/guardian(s) want me to keep trying when things are tough at school.
10. What I'm learning in my classes will be important in my future.
11. Most of what is important to know you learn in school.
12. Overall, adults at my school treat students fairly.
13. I feel like I have a say about what happens to me at school.
14. The grades in my classes do a good job of measuring what I'm able to do.
15. School is important for achieving my future goals.
16. The school rules are fair.
17. Other students here like me the way I am.
18. Most teachers at my school are interested in me as a person, not just as a student.
19. After finishing my schoolwork, I check it over to see if it's correct.
20. I have some friends at school.
21. I'll learn, but only if the teacher gives me a reward.
22. At my school, teachers care about students.
23. Students at my school are there for me when I need them.
24. Learning is fun because I get better at something.
25. I enjoy talking to the teachers here.
26. Other students at school care about me.

27. Students here respect what I have to say.
28. My family/guardian(s) are there for me when I need them.
29. I am hopeful about my future.
30. Overall, my teachers are open and honest with me.
31. Adults at my school listen to the students.
32. I feel safe at school.
33. When I do schoolwork I check to see whether I understand what I'm doing.
34. I'll learn, but only if my family/guardian(s) give me a reward.
35. My teachers are there for me when I need them.

Behavioral Engagement Subscale-School Engagement Scale

◆◆◆ Here are questions that ask about your school experience. There are no right or wrong answers.

- Circle 1 if you **NEVER** do this
- Circle 2 if you **RARELY** do this
- Circle 3 if you **SOMETIMES** do this
- Circle 4 if you do this **OFTEN BUT NOT ALL** of the time
- Circle 5 if you do this **ALL OF THE TIME**

1. I follow the rules at school.
2. I get in trouble at school.
3. I pay attention in class.
4. I complete my work on time.

The Abbreviated Junior Eysenck Personality Questionnaire

◆◆◆ Please answer the following questions about **YOU**. Please circle only ONE answer for each question.

- Circle 1 if the answer is **YES**
- Circle 2 if the answer is **NO**

1. Can you get a party going?
2. Are you rather lively?
3. Do you like going out a lot?
4. Do you find it hard to really enjoy yourself at a lively party?
5. Would you rather be alone instead of being with other young people?
6. Can you let yourself go and enjoy yourself a lot at a lively party?
7. Do you often feel 'fed-up'?
8. Are you easily hurt when people find things wrong with you or the work you do?
9. Do you find it hard to get to sleep at night because you are worrying about things?
10. Do you worry for a long while if you feel you have made a fool of yourself?
11. Are you feelings rather easily hurt?

Stressful Life Events Scale (Uncontrollable events)

◆◆◆ Below is a list of things that sometimes happen to people. Please read over the entire list before you begin and circle only ONE answer for each question.

Circle **1** if the event you **HAVE** experienced **during the past year (12 months)**.

Circle **2** if event you **HAVE NOT** experienced during the **past year(12 months)**.

1. Moving to a new home
2. New brother or sister
3. Changing to a new school
4. Serious illness or injury of a family member
5. Parents divorced
6. Mother or father lost a job
7. Death of a family member
8. Parents separated
9. Death of a close friend
10. Increased absence of parent from the home
11. Brother or sister leaving home
12. Serious illness or injury of close friend
13. Parent getting into trouble with law
14. Parent getting a new job
15. Parent going to jail
16. Change in parents financial status

Students' Life Satisfaction Scale

◆◆◆ *We would like to know what thoughts about life you have had during the past several weeks. Think about how you spend each day and night and then think about how your life has been during most of this time. Here are some questions that ask you to indicate your satisfaction with your overall life. Circle the words next to each statement that indicate the extent to which you agree or disagree with each statement.*

Circle **1** if you **STONGLY DISAGREE** with the sentence

Circle **2** if you **MODERATELY DISAGREE** with the sentence

Circle **3** if you **MILDLY DISAGREE** with the sentence

Circle **4** if you **MILDLY AGREE** with the sentence

Circle **5** if you **MODERATELY AGREE** with the sentence

Circle **6** if you **STRONGLY AGREE** with the sentence

1. My life is going well.
2. My Life is just right.
3. I would like to change many things in my life.
4. I wish I had a different kind of life.
5. I have a good life.
6. I have what I want in life.
7. My life is better than most kids'.

The Children's Hope Scale (CHS)

◆◆◆ The 6 sentences below describe how children think about themselves and how they do things in general. For each sentence, please think about how you are in most situations. Circle the number that describes you best. For example, circle **1** if it describes you "none of the time." Or, if you are this way "all of the time," circle **6**.

- 1 = NONE OF THE TIME**
- 2 = A LITTLE OF THE TIME**
- 3 = SOME OF THE TIME**
- 4 = A LOT OF THE TIME**
- 5 = MOST OF THE TIME**
- 6 = ALL OF THE TIME**

1. I think I am doing pretty well.
2. I can think of many ways to get the things in life that are most important to me.
3. I am doing just as well as other kids my age.
4. When I have a problem, I can come up with lots of ways to solve it.
5. I think the things I have done in the past will help me in the future.
6. Even when others want to quit, I know that I can find ways to solve the problem.

Part II

The Inventory of Parent and Peer Attachment (IPPA) (Only Parent Form)

◆◆◆ Some of the following statements ask about your *feelings* about your **MOTHER** or the person who has acted as your mother. If you have more than one person acting as your mother (e.g. natural mother and a step-mother) answer the questions for the one that you feel has most influenced you.

WHEN THINKING ABOUT THE STATEMENTS BELOW I AM THINKING ABOUT MY:

- a. Biological Mother
- b. Stepmother
- c. Adopted Mother
- d. Foster Mother
- e. Other (please write in) _____
- f. I will not be answering this question because I don't have a mother

Please respond to each of the items below by circling the **ONE** number that **MOST CLOSELY** tells how true the statement is for you.

Circle **1** if the statement is **ALMOST NEVER TRUE OR NEVER TRUE** for you

Circle **2** if the statement is **NOT VERY OFTEN TRUE** for you

Circle **3** if the statement is **SOMETIMES TRUE** for you

Circle **4** if the statement is **OFTEN TRUE** for you

Circle **5** if the statement is **ALMOST ALWAYS OR ALWAYS TRUE** for you

1. My mother respects my feelings.
2. My mother accepts me as I am.

3. My mother can tell when I am upset about something.
4. I get upset a lot more than my mother knows about.
5. When we discuss things my mother cares about my point of view.
6. My mother trusts my judgment.
7. My mother has her own problems so I don't bother her with mine.
8. I tell my mother about my problems and troubles.
9. My mother helps me to talk about my difficulties.
10. My mother doesn't understand what I am going through these days.
11. I can count on my mother when I need to get something off of my chest.
12. My mother understands me.

◆◆◆ Some of the following statements ask about your *feelings* about your **FATHER** or the person who has acted as your father. If you have more than one person acting as your father (e.g. natural father and a step-father) answer the questions for the one that you feel has most influenced you.

WHEN THINKING ABOUT THE STATEMENTS BELOW I AM THINKING ABOUT MY:

- a. Biological Father
- b. Stepfather
- c. Adopted Father
- d. Foster Father
- e. Other (please write in) _____
- f. I will not be answering this question because I don't have a father.

Please respond to each of the items below by circling the **ONE** number that **MOST CLOSELY** tells how true the statement is for you.

Circle **1** if the statement is **ALMOST NEVER TRUE OR NEVER TRUE** for you

Circle **2** if the statement is **NOT VERY OFTEN TRUE** for you

Circle **3** if the statement is **SOMETIMES TRUE** for you

Circle **4** if the statement is **OFTEN TRUE** for you

Circle **5** if the statement is **ALMOST ALWAYS OR ALWAYS TRUE** for you

1. My father respects my feelings.
2. My father accepts me as I am.
3. My father can tell when I am upset about something.
4. I get upset a lot more than my father knows about.
5. When we discuss things my father cares about my point of view.
6. My father trusts my judgment.
7. My father has his own problems so I don't bother him with mine.
8. I tell my father about my problems and troubles.
9. My father helps me to talk about my difficulties.
10. My father doesn't understand what I am going through these days.
11. I can count on my father when I need to get something off of my chest.
12. My father understands me.

Coping

◆◆◆ Here is a list of ways that kids your age often respond to problems they may have. When you have an argument or fight with a friend.....

Circle 1 if you **NEVER** deal with the problem this way.

Circle 2 if you **ALMOST NEVER** deal with the problem this way.

Circle 3 if **SOMETIMES** you deal with the problem this way.

Circle 4 if you **ALMOST ALWAYS** deal with the problem this way.

Circle 5 if you **ALWAYS** deal with the problem this way.

1. Tell a friend or family member what happened.
2. Try to think of different ways to solve it.
3. Make believe nothing happened.
4. Take it out on others because I feel sad or angry.
5. Talk to somebody about how it made me feel.
6. Change something so things will work out.
7. Go off by myself.
8. Become so upset that I can't talk to anyone.
9. Get help from a friend.
10. Decide on one way to deal with the problem and I do it.
11. Forget the whole thing.
12. Worry too much about it.
13. Ask a friend for advice.
14. Do something to make up for it.
15. Tell myself it doesn't matter.
16. Cry about it.
17. Ask a family member for advice.
18. Know there are things I can do to make it better.
19. Just feel sorry for myself.
20. Refuse to think about it.
21. Yell to let off steam.
22. Ask someone who has had this problem before what he or she would do.
23. Go over in my mind what to do or say.
24. Do something to take my mind off of it.
25. Worry that others will think badly of me.
26. Curse out loud.
27. Try to understand why this happened to me.
28. Say I don't care.
29. Ignore it when people say something about it.
30. Get mad and throw or hit something.
31. Get help from a family member.
32. Get mad at myself for doing something that I shouldn't have done.
33. Try extra hard to keep this from happening again.
34. Talk to the teacher about it.

Social Problem-Solving Inventory for Adolescents (SPSI-A)

◆◆◆ Below are statements that reflect how you respond to problems and how you think and feel about yourself afterward. You should think of **serious problems** that are related to your family, health, friends, school, and sports. You should also try to think about a serious problem that you had to solve recently as you reply to these statements.

Circle **1** if the statement is **Not at All TRUE** for you

Circle **2** if the statement is **Slightly TRUE** for you

Circle **3** if the statement is **Moderately TRUE** for you

Circle **4** if the statement is **Very TRUE** for you

Circle **5** if the statement is **Extremely TRUE** for you

1. When I have a problem, I think of the ways that I have handled the same kind of problem before.
2. To solve a problem, I do what has worked for me in the past.
3. When I solve a problem, I use the skills I have developed that have worked for me in the past.
4. When I can't solve a problem quickly and easily, I think that I am stupid.
5. I often doubt that there is a good way to solve problems that I have.
6. When faced with a hard problem, I believe that, if I try, I will be able to solve it on my own.
7. I feel afraid when I have an important problem to solve.
8. Complex problems make me very angry or upset.
9. I often become sad and do not feel like doing anything when I have a problem to solve.
10. I put off solving a problem for as long as I can.
11. I avoid dealing with problems in my life.
12. I put off solving problems until it is too late to do anything about them.
13. When I have a problem, I find out if it is part of a bigger problem that I should deal with.
14. I try to solve a complex problem by breaking it into smaller pieces that I can solve one at a time.
15. Before I solve a problem, I gather as many facts about the problem as I can.
16. When I solve a problem, I think of a number of options and combine them to make a better solution.
17. I try to think of as many ways to approach a problem as I can.
18. When I solve a problem, I think of as many options as I can until I can't think of any more.
19. When I decide which option is best, I predict what the outcome will be.
20. I weigh the outcomes for each of the options I can think of.
21. I think of the short-term and long-term outcomes of each option.
22. Before I try to solve a problem, I set a goal so I know what I want to achieve.
23. Before solving a problem, I practice my solution to increase my chances of success.
24. I write a specific objective down so I know how to solve my problem.
25. After solving a problem, I decide if the situation is better.
26. After I solve a problem, I decide if I feel better about the situation.

27. I often solve my problems and achieve my goals.
28. If the solution to a problem fails, I go back to the beginning and try again.
29. When a solution does not work, I try to determine what part of the process went wrong.
30. I go through the problem-solving process again when my first option fails.