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An investigation of a dual-factor model of mental health and related physical health outcomes among early adolescents

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An Investigation of a Dual-Factor Model of Mental Health and Related Physical Health Outcomes among Early Adolescents

by

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A thesis submitted in partial fulfillment of the requirements for the degree of Education Specialist Department of Psychological and Social Foundations College of Education University of South Florida

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An Investigation of a Dual-Factor Model of Mental Health and Related Physical Health Outcomes among Early Adolescents

Emily J. Shaffer

ABSTRACT

This study investigated the mental and physical health of early adolescents ($n = 339$) using a dual-factor model of mental health. When employing a dual-factor model, mental well-being is not simply assumed from the absence of negative indicators of mental health (psychopathology). Rather, assessments of positive indicators of mental health (subjective well-being) are used to determine one’s level of mental wellness. The current study tested the existence of a dual-factor model of mental health by examining the separability of participants’ reports of subjective well-being and psychopathology. Specifically, the researcher hypothesized that the assessment of both of these constructs would result in multiple mental health classifications, beyond that of the continuum found with only the assessment of psychopathology (i.e., low to high psychopathology). Findings from this study support the classifications of four mental health groups using measures of subjective well-being and psychopathology. In addition, significant differences in physical health outcomes were found among participants in the different mental health groups. These findings support the existence of a dual-factor model of mental health, and suggest the need for assessment of both negative and positive indicators of functioning in order to accurately estimate adolescents’ physical health.
CHAPTER 1

Statement of the Problem

Mental health has been proposed as a complete state of being, consisting not merely of the absence of illness or disorder but also the presence of positive factors such as hope, self-esteem, and happiness (Ryff & Singer, 1998; Sigerist, 1941). However, the majority of research on children’s and adolescents’ mental health focuses exclusively on forms of psychopathology (PTH) - both internalizing disorders such as depression or anxiety and externalizing disorders such as conduct disorder or oppositional defiant disorder (Jahoda, 1958). The mental health concerns of youth who do not display clinical levels of PTH have been overlooked to a large degree (Greenspoon & Saklofske, 2001; Keyes, 2002). The integration of positive as well as negative indicators of well-being into mental health assessment yields a more comprehensive picture of functioning. This type of assessment would also assist in targeting children and adolescents who may be at-risk of developing future problems – those who are not displaying symptoms of PTH, but who also report decreased life satisfaction, or happiness. By examining both mental illness and wellness (e.g., life satisfaction, hope, and other positive indicators of functioning) in youth, practitioners and researchers could better understand and address the mental health concerns of this population.

Only one published study has examined the measurement of both PTH and life satisfaction in youth with respect to various associated outcomes. Greenspoon and
Saklofske (2001) examined a large sample of children in grades 3 to 6 on measures of mental illness (PTH) and mental well-being, referred to as subjective well-being (SWB). These assessments resulted in the establishment of four mental health classifications for children. Two of these classifications fit a traditional model of mental health assessment: 1) Children reporting high levels of PTH and low SWB (‘troubled youth’) and 2) Children reporting low levels of PTH and high SWB (‘happy youth’). However, the other two classifications of mental health isolated in this research did not support a traditional continuum model of mental health. Rather, the third and fourth classifications supported what the researchers referred to as a dual-factor model of mental health. Children in group 3 reported high levels of PTH and high levels of SWB (‘disturbed but content youth’) and children in a fourth group reported low levels of PTH but also low levels of SWB (‘vulnerable youth’ or at-risk, yet with no overt symptoms). The third group of children displayed high sociability and good interpersonal relations compared to the first group of children who reported high PTH but low SWB. The fourth group of children is of particular concern to mental health professionals as traditionally, these children would not be targeted for intervention due to the absence of PTH. Greenspoon and Saklofske reported that this fourth group of children also had decreased self-esteem and poor interpersonal relationships. These findings support the importance of SWB as equally important to the traditional focus on psychological disorders in mental health assessment.

*Traditional Measure of Mental Health – Psychopathology (PTH)*

Psychopathology or (PTH), as conceptualized in this study, refers to both internalizing psychological disorders (e.g., depression, anxiety) and externalizing disorders (e.g., conduct disorder, oppositional defiant disorder), as outlined in the
Traditionally, mental health diagnosis is defined simply by the presence or absence of disorders or associated negative outcomes. Using diagnostic interviews and rating scales, psychiatrists and psychologists determine the appropriate diagnosis, if any, for their patients. If criteria are not met for a certain disorder, the patient is termed as sub-clinical and no subsequent intervention would likely follow. By using traditional assessments, mental health becomes an inferred byproduct in the absence of mental illness.

**Subjective Well-Being (SWB)**

Subjective well-being (SWB) is the scientific term for happiness (Diener, Eunkook, & Lucas, 1999). SWB is comprised of three related but separate constructs: life satisfaction, positive affect, and negative affect (Diener, 2000). Life satisfaction includes both global and domain-specific cognitive appraisals of one’s happiness (e.g., happiness with family life or school life). Affect entails fairly stable emotions and mood states. Positive affect includes frequent pleasant feelings and mood, including joy, elation, and delight, while negative affect refers to a consistent experiencing of bothersome or disagreeable emotions such as sadness, stress, guilt, and anger (Diener & Seligman, 2002). An individual reporting high SWB would make a positive judgment of the overall quality of his or her life, and experience a greater degree of positive affect relative to negative affect. Diener (2000) has noted that often the terms life satisfaction and SWB are used interchangeably throughout the literature; however, SWB is the more comprehensive measure of well-being.
In acknowledging the importance of assessing SWB in addition to forms of PTH, various researchers have proposed comprehensive models of mental health incorporating these constructs. Roeser, Eccles, and Sameroff (2000) assert the need for promotion of positive social and emotional development in today’s school systems. Additionally, Park (2004) has attested to the importance of subjective well-being, stating that “positive indicators such as life satisfaction should be included in any assessment battery to capture comprehensively what is meant by the psychological well-being of youth” (p. 27). However, to date, still only a few empirical studies have examined the utility of including SWB in assessments of mental health.

Mental Health in Relation to Physical Health Outcomes for Youth

The relationship between physical and mental health has been examined throughout the past decade by focusing on how PTH is related to physical functioning. For example, relations between chronic illnesses and depression have been well documented (Baker, Spector, McGrath, & Soteriou, 2005; Williamson, Walters, & Shaffer, 2002). However, most likely because the investigation of SWB and other positive psychology constructs is still in the early stages of research, examination of SWB and physical health has been very limited. The relationship between mental well-being and physical health and functioning remains an important concept to be studied in child and adolescent populations.

Physical health functioning was operationalized in the current study as self-perceptions of physical health and functioning during the past six-months to one year. This self-description of physical health includes descriptions of both acute and chronic health conditions, including their frequency and severity, as well as adjectives and
descriptors of self-perceived health (e.g., very healthy, get sick regularly, poor health).
The rationale for this operationalization is based on the work of Schmidt, Garratt, and Fitzpatrick (2002), who recommend gathering health perceptions from children based on a six-month to one-year time period. The authors also state that a self-perception of general health should include descriptors of overall functioning and a depiction of any health conditions the child has experienced during that time period.

Purpose of the Current Study

The current study expanded on the aforementioned seminal research of Greenspoon and Saklofske (2001), who examined mental health using measures of both PTH and SWB. However, these results were based on research with elementary school children in Canada. The present study provided the first examination of a dual-factor model of mental health in American youth. The study also examined a sample of early adolescents, which expands the generalizability of this model to other age groups.

With respect to adjustment outcomes, the current study focused on important physical health outcomes in relation to early adolescents’ varying mental health profiles. Previous research with youth has revealed links between PTH and physical health problems, such as obesity (Pine, Cohen, & Brook, 1997), total number of medical problems (Rohde, Lewinsohn, & Seeley, 1994) and self-reported overall health (Bardone et al., 1998). In addition, the relationship between life satisfaction and health-related quality of life has been explored in a large-scale study of over 5,000 adolescents (Zullig, Valois, Huebner, & Drane, 2005). This research supported a significant relationship between self-rated physical health and life satisfaction. Only one study has examined SWB in relation to physical health functioning in youth, and found that pediatric
oncology patients’ life satisfaction and affect were comparable to that of healthy controls (McKnight, 2004). However, a relatively small sample size (n = 29) may have reduced the ability to detect significant differences in SWB. The current study is the first examination of SWB and physical health in a general population of more than 300 adolescents. Outcome indicators of physical health that were assessed in the present study include perceptions of overall health and physical functioning, as well as the extent to which health problems limit adolescents’ activities.

The current study contributes to the literature by providing the first examination of SWB and PTH in relation to physical health among a general population of early adolescents. The four mental health categorizations hypothesized in this study yield a more comprehensive picture of mental health. The identification of a subgroup of vulnerable youth who report diminished SWB, even though they do not report clinical PTH, would potentially bring attention to an important group of at-risk individuals. Identifying youth at-risk is crucial to prevention efforts that aspire to provide services prior to the onset of severe PTH. If the current study reveals differences between the physical health of early adolescents who are vulnerable vs. disturbed or happy, psychologists will have an empirical rationale for attending to mental health beyond illness – a goal consistent with a commitment to increase wellness in all youth.

In sum, the research questions to be answered in this study were as follows:

1. What are the distinguishable categories of mental health among middle school youth, when considering both subjective well-being and psychopathology?
2. What are the physical health outcomes for youth in each of these distinguishable mental health categories?
Hypotheses

Based on research among elementary-aged students, it was predicted that four distinguishable categories of mental health will be apparent among middle school students, when assessing both SWB and PTH (Greenspoon & Saklofske, 2001). These proposed categorizations of mental health are displayed in Figure 1.

Figure 1. A proposed model of mental health classifications (adapted from Greenspoon & Saklofske, 2001).

<table>
<thead>
<tr>
<th>“Vulnerable Youth”</th>
<th>“Troubled Youth”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low SWB</td>
<td>Low SWB</td>
</tr>
<tr>
<td>Low PTH</td>
<td>High PTH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>“Happy Youth”</th>
<th>“Disturbed but Content”</th>
</tr>
</thead>
<tbody>
<tr>
<td>High SWB</td>
<td>High SWB</td>
</tr>
<tr>
<td>Low PTH</td>
<td>High PTH</td>
</tr>
</tbody>
</table>

(SWB = Subjective well-being, PTH = Psychopathology)

The researcher also predicted that more differences than similarities in physical health will be found between youth reporting differing classifications of mental health; specifically, youth with higher levels of PTH and lower levels of SWB were predicted to report the most severe and chronic physical health outcomes. In addition, youth with lower levels of PTH and high levels of SWB were predicted to report the least physical health symptoms and limitations. These predictions were based on the limited research concerning the relationship between mental and physical health among children and adolescents. Research with children living with chronic physical conditions has shown
concurrent decreased SWB (Hampton, 2004). Also, a large-scale study examining American adolescents has shown negative correlations between poor physical health and global life satisfaction (Zullig et al., 2005). Finally, research with adult populations has shown that ‘completely mentally healthy’ adults, as measured by both positive and negative indicators of well-being, reported the fewest health limitations of daily living activities (Keyes, 2005).
CHAPTER 2

This chapter provides a review of mental health assessment as it has evolved from traditional roots to a broader, more contemporary conceptualization of mental health. This broader definition of mental health includes assessment of both positive and negative indicators of functioning. One specific positive indicator of mental health, subjective well-being, is discussed, and models of mental health assessment incorporating this construct are reviewed. An ecological perspective purports that mental health and functioning cannot exist in isolation, rather, various factors are associated with an individual’s well-being. To this end, a comprehensive review of correlates and proposed outcomes related to mental health and well-being is provided in the chapter. The importance of one understudied outcome in particular, physical health, is highlighted as a focus of the current study.

Traditional Definitions of Mental Health

The measurement of an individual’s mental health has concerned professionals in psychology and other fields for decades. The roots of mental health assessment were based all but exclusively on a traditional medical model of wellness, in that the absence of psychopathology indicated a positive well-being, at least to some degree (Jahoda, 1958). Still today, a person’s well-being is often marked simply by the absence of disease/disorder or negative outcomes such as behavior or academic problems (Diener, 2000).
In essence, many assessment procedures used by mental health practitioners are focused primarily on the examination of psychopathology in patients to determine a level of mental ‘health.’ Among assessments focused on negative indicators of well-being is the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR), the most widely used diagnostic manual in clinical practice today. The purpose of the DSM-IV-TR is to “provide clear descriptions of diagnostic categories in order to enable clinicians and investigators to diagnose, communicate about, study, and treat people with various mental disorders” (American Psychiatric Association, 2000, p. xxxvii). Although classifying a mental disorder can provide useful information for treatment, this type of diagnosis is quite limited. Specifically, by only diagnosing and treating mental illness, practitioners ignore opportunities to assess an individual’s true happiness with his or her life.

A similar form of diagnostic criteria exists in our current special education system in public schools. In order to serve students with special mental health needs in the school environment, as outlined in the Individuals with Disabilities Education Act (2004), children must meet criteria or cutoff points for a diagnosis of emotional handicap or serious emotional disturbance. Even though labels within the educational system are generally broader than specific terminology used in the DSM-IV, ultimately the IDEA criterion for emotional disabilities replicate a categorical model for treating and intervening for children’s mental health needs that exclude the vast majority of students.

Although these types of diagnostic procedures provide evidence for a null presence of mental sickness or problem, they are not truly accurate perspectives of an individual’s overall mental well-being. Recent research incorporating assessments of
both positive and negative indicators of mental health has identified a group of children that were found to score low on measures of psychopathology yet still report low levels of subjective well-being, or happiness with their lives (Greenspoon & Saklofske, 2001). Clearly, although this group of individuals would most likely be determined as mentally ‘healthy’ according to traditional diagnostic procedures (i.e., absence of psychopathology), their reports of low satisfaction with their lives suggests they are not experiencing ‘optimal’ functioning. In other words, even though these individuals do not report mental illness or problems, this cannot be automatically interpreted as mental health, based on their concurrent reports of low life satisfaction.

Wilkinson and Walford (1998) demonstrated that adolescent psychological health is distinguishable as two separate, yet highly correlated constructs, termed as ‘well-being’ and ‘distress.’ A sample of more than 300 adolescents completed measures of psychological health; subsequent factor analyses of these data supported a two-factor model of mental health. Measures of anxiety and negative affect comprised a ‘distress’ construct and measures of subjective well-being, happiness, and positive affect comprised a ‘well-being’ construct. These findings offer support that psychological wellness and illness should not be viewed as a single continuum, whereby the presence of one assumes the absence of the other. Rather, a comprehensive view of mental health must distinguish between factors that comprise both well-being and distress.

Positive Indicators of Mental Health

According to Jahoda (1958), “the absence of disease may constitute a necessary, but not sufficient, criterion for mental health” (p.15). In other words, a traditional (i.e. pathology focused) model of mental health provides limited information pertaining to
individuals’ true well-being. A focus exclusively on pathology limits the range of services mental health professionals can provide to individuals by only addressing issues of mental illness instead of striving for optimal development.

Over the past few decades, a growing interest has developed in healthy development or wellness. This topic is of particular importance during the critical adolescent years when emotional and social development is vastly expanding. Compared to the substantial body of literature on indicators of psychopathology, little research has examined happiness, or other positive indicators of well-being. Diener (2000) described the interest in positive indicators as part of the positive psychology movement and essentially a paradigm shift within the mental health field. The traditional model of wellness places mental health/happiness on a continuum with psychopathology (PTH), each being at opposite ends. Yet, Diener, Lucas, and Oishi (2002) asserted that the absence of disease is not an adequate criterion to describe a person as mentally healthy, and particularly not as possessing high or even average levels of happiness or optimal adjustment. Therefore, in contrast to a one-dimensional view of mental health, a more encompassing view would define PTH and mental health as separate yet interrelated constructs (Wilkinson & Walford, 1998). By recognizing that happiness and well-being do in fact exist separately from disease, the field of positive psychology has started to focus on prevention and optimal functioning, as opposed to solely focusing on the treatment of problems that manifest. Adopting an expanded model of mental health allows practitioners to recognize and work with more diverse groups of individuals.

More contemporary conceptualizations of mental health strive to define mental health not only as the absence of negative indicators of adjustment but also as the
presence of positive development. Positive indicators of mental health include variables such as life satisfaction, locus of control over circumstances, hope, self-efficacy, and other factors related to one’s mental wellness (Lopez & Snyder, 2003). Among the central tenants of these positive indicators of mental health is the measure of subjective well-being (SWB), also referred to as happiness.

**Subjective Well-Being – Definition and Measurement**

The present study will examine one important indicator of positive psychological well-being known as subjective well-being (SWB). In order to appreciate the need for a measure of SWB when assessing mental health in children and adults, it is important to first understand what SWB encompasses and how it has advanced to its current conceptualization. The notion of optimal functioning, including that of SWB, has evolved fairly recently in the field of psychology (i.e., the past thirty years). Diener and colleagues (1999) described how SWB differs from objective measures of a ‘good life,’ such as number of friends or salary, in that every person essentially has the right to decide whether his or her life is valuable and filled with a degree of happiness. SWB, then, refers to an individual’s evaluation of his or her life in all domains, and more specifically, ‘people’s cognitive and affective evaluations’ (Diener, 2000). SWB moves beyond the basic fulfillment of needs to a desire for optimal functioning and one’s own evaluations about how close they are to optimal functioning. Diener (2000) asserts that happiness and life satisfaction are considered important in all societies but to a greater extent in westernized cultures, where more focus is placed on individuals rather than on society as a whole. In individualistic societies, how people rate their lives and their level of happiness is usually much more important than in collectivistic societies.
SWB is comprised of three related, but separable constructs: life satisfaction, positive affect and minimal levels of negative affect (Diener, 2000). Life satisfaction includes both global and domain-specific cognitive appraisals of one’s happiness. Global life satisfaction pertains to an individual’s overall assessment of personal happiness (e.g., ‘I am happy with my life’), while domain-specific life satisfaction has been measured as subjective happiness across both inner (e.g., self) and outer-directed domains (i.e., school, friends, family, and environment). A high relationship between global and domain-specific life satisfaction has been supported through previous factor-analytic procedures (Huebner, Gilman, & Laughlin, 1999). Affect entails emotions and mood states, in that positive affect includes frequent pleasant feelings and mood, including joy, elation, and delight, while negative affect refers to a consistent experiencing of bothersome or disagreeable emotions such as sadness, stress, guilt, and anger (Laurent et al., 1999). Diener and Seligman (2002) have demonstrated that very happy people experience a greater frequency of positive versus negative affect. These three factors (life satisfaction, positive affect, low negative affect) have long been defined in the literature as components of SWB, but much of the early research on SWB of children focused solely on global life satisfaction. Given that the positive and negative affect domains of SWB represent emotion and mood, factors susceptible to frequent shifts and changes within an individual, life satisfaction is considered to be the more stable component of SWB measurement. Thus, many assessments of children’s SWB to date have exclusively included global and/or domain-specific measures of life satisfaction. However, it is quite possible that a child may be satisfied with his or her life on the whole, but experience a high frequency of negative emotions surrounding a temporary life circumstance.
Therefore, knowing information pertaining to all three identified components assists in forming a more comprehensive picture of a person’s true SWB (Diener et al., 2002).

The examination of SWB among children and adolescents is very limited compared to the number of studies conducted with adult populations. Although the concept of life satisfaction has not been discussed to a substantial extent in the developmental literature, the construct of “happiness” has been identified as one indicator for positive mental health (Huebner, 1994; Huebner, Suldo, & Valois, 2005). Huebner (1994) proposed that the limited research on happiness in youth may be due to the lack of sound measurement of SWB for children. For instance, several early studies assessed SWB using a one-item indicator such as “I am happy with my life.” Students then rated their level of agreement with the statement on a likert-type scale. For instance, Natvig, Albreksten, and Qvarnstrom (2003) assessed adolescents’ life satisfaction by asking “In general, how do you feel with your life at present?” Leung and Leung (1992) also assessed global life satisfaction among Chinese students using a one-item indicator (“How do you feel about your life as a whole?”). As a more comprehensive measure of children’s and adolescents’ life satisfaction, the Multidimensional Students’ Life Satisfaction Scale (MSLSS: Huebner, 1994) was developed. This scale yields a profile of children’s satisfaction with specific life domains (e.g., friends, family, school) as well as provides a composite of overall life satisfaction. The Students’ Life Satisfaction Scale (SLSS: Huebner, 1991), a predecessor to the MSLSS, taps children’s global life satisfaction judgments with a seven-item questionnaire.

Although life satisfaction as a one-item indicator or questionnaire may be the most frequent assessment of SWB among youth as well as adults, more comprehensive
measures of happiness have also been used. Diener (2000) stated that thorough measures of happiness include assessments that tap each of the three theorized components of SWB. For example, an affect scale measuring both positive and negative emotions or feelings may be included as well as a scale to measure global life satisfaction and satisfaction in certain domains such as work, family, and social relationships. The Positive and Negative Affect Schedule (PANAS: Watson, Clark, & Tellegen, 1988) was developed as a brief measurement of positive and negative affect for use with adult populations and has been used in subsequent measurements of SWB throughout the past decade (Kercher, 1992). This scale assesses the degree to which individuals experience positive and negative affect in daily life using emotion descriptions such as ‘mad’, ‘delighted’, and ‘gloomy.’ A similar scale, the Positive and Negative Affect Scale for Children (PANAS-C: Laurent et al., 1999), was developed for use with children and adolescents, with minor modifications of items to adjust for readability and comprehension, including removal of abstract words such as ‘hostile’ and addition of concrete descriptors such as ‘happy’ and ‘calm’.

Recently, researchers have employed innovative techniques to assess the truest sense of SWB possible. Positive and negative affect have been measured at random times over a span of several weeks as a more naturalistic method of assessing individual’s true feelings (Kardum & Daskijevic, 2001). Also, longitudinal research has found SWB to be stable across time. Lepper (1998) found that SWB, as measured by affect and life satisfaction, was highly stable over a nine-month period among a population of retired adults. Additionally, reports of a person’s life satisfaction have been shown to be fairly consistent with reports from significant others in that person’s life, providing some
evidence that SWB can be manifested in overt ways so that others are aware of a person’s inner feelings and evaluations (Lepper, 1998). However, SWB is certainly subject to forms of bias because it is, in fact, a completely subjective measure. An individual’s concurrent emotional state as well as situational factors at the time of assessment may influence responses. Also, like many other self-report scales, people may give socially desirable responses rather than true reflections of their judgments and feelings. Rather than indicating disappointment with friendships, for example, a respondent may state that they feel fulfilled with their social relationships in order to provide what they consider a more socially desirable response.

Research on the construct of SWB has recently shifted from looking at which groups of people tend to be happy (such as married people or people who attend church regularly) to more of a focus on what it takes to be happy. Research shows that individuals from many varying backgrounds and circumstances may report adequate or high SWB, and that, to a certain extent, happiness is not tied to specific status or condition (Diener, 2000). A person’s values and aspirations, upbringing, and contribution to a greater community or society all play a role in life satisfaction, and obtaining information on these factors is important in understanding SWB (Diener, Eunkook, & Lucas, 1999).

Models of Mental Health Incorporating SWB and Wellness

In the past decade, multiple psychologists have advanced models of mental health that necessitate the examination of SWB and wellness factors as valuable components to well-being. The following conceptualizations of mental health incorporate SWB as an indicator of mental health assessment. Three models pertain directly to children and
adolescents (Greenspoon & Saklofske, 2001; Park, 2003; Roeser, Eccles, & Sameroff, 2000;) while an additional model, though applicable to youth as well, has been validated in the adult population (Keyes, 2002).

*Roeser, Eccles, and Sameroff (2000).* As an alternative to a traditional medical-model definition of mental health, leading developmental psychologists (Roeser, Eccles, & Sameroff; 2000) proposed a comprehensive model of adolescent mental health. This model includes traditional indicators of psychopathology but also assesses positive indicators of mental health identified in two interrelated domains- school functioning and social-emotional development. School functioning includes measures of academic motivational beliefs, emotions or values regarding school, and in-school conduct. Social-emotional development assesses general feelings of well-being (i.e. life satisfaction) and distress as well as peer relationships. Together, these constructs measure adolescents’ well-being more comprehensively and in turn, assist in determining potential behavioral deficits and/or strengths. Data is needed to determine (a) mental health categories or clusters that arise from these separate indicators, and (b) the importance of such categories in predicting important outcomes such as educational and physical functioning.

*Keyes (2002).* Corey Keyes (2002), a researcher in the field of social work, advanced an operationalization of mental health in terms of a presence or absence of positive feelings and functioning. Keyes proposed a continuum of mental health categories as follows: those with the most positive or complete mental health are termed as *flourishing*, and report high levels of well-being and positive functioning. Adults who are *moderately mentally healthy* report neither significantly high nor low levels of well-
being, and therefore are termed to have moderate levels of mental health. Those with incomplete mental health are referred to as *languishing*, and report low levels of well-being and positive functioning. These individuals may describe their lives as “hollow” and “empty.” Finally, a subgroup of adults with mental illness report one or more forms of psychopathology, and were operationalized as individuals with depression in this study.

In applying this model of mental health to an archival dataset of over 3,000 adults ages 24-74 years, findings revealed that 17.2 % of those surveyed were found to be flourishing while 12.1 % were languishing. Measures to assess mental health as either languishing or flourishing consisted of assessments of emotional and psychological well-being, social well-being, and psychosocial functioning and impairment. Emotional and psychological well-being were measured by self-response of how frequently six symptoms of positive affect were experienced in the last month as well as six domains of subjective well-being (self-acceptance, positive relations with others, personal growth, purpose in life, environmental mastery, and autonomy). These six domains of SWB are consistent with previous measures of well-being (Ryff, 1989).

Mental illness was assessed in this research using a diagnostic interview form to screen for symptoms consistent with major depressive disorder (MDD). From the assessment of both mental illness and mental health comes an important finding of Keyes’ research. Approximately 14 % of participants surveyed met the criteria for major depressive disorder (MDD), as characterized by the DSM-III-R diagnostic criteria, and of this 14 %, 4.7 % were also characterized as languishing according to Keyes’ mental health measures, while 9.4 % *were not* languishing. In other words, over 9 % of adults
surveyed met criteria for a form of psychopathology but did not concurrently report a significant absence of positive feelings and functioning. Keyes’ model provides strong evidence for a separation of wellness (SWB) and psychopathology (PTH) assessments in determining the most authentic measurement of psychological functioning and mental health. Notably, this study examined categories of mental health in relation to an important outcome- depression. Further examinations of outcomes including emotional problems such as anxiety or externalizing disorder would provide further support for the importance of assessing adults’ SWB.

Park (2003). Another model of mental health is proposed by a school psychologist, who asserts that promoting wellness among adolescents is a better and more cost-effective way of dealing with depression (Park, 2003). Instead of simply treating depressed youth when they exhibit symptoms, identifying the protective factors of depression, one of which is greater life satisfaction, can provide many financial and emotional advantages. By promoting life satisfaction among children, individualized, costly treatments for depression may be avoided for a significant number of youth. However, the pathways to depression and other forms of PTH tend to be fairly complex and individualized. Therefore, Park cautions that promoting SWB is only one step, though an important one, in preventing future problems. The promotion of other positive constructs of mental health such as locus-of-control and hope may also be important components of a prevention model. Park asserts that programs and services promoting global life satisfaction and general positive affect are more effective than programs targeting specific feelings or domains, as these may not apply to the majority of children. This model is limited by a lack of empirical support.
Greenspoon and Saklofske (2001). Additional insight from extending a similar model of mental health assessment to a younger population was provided by Greenspoon and Saklofske (2001). In this seminal study, the researchers investigated the constructs of SWB and PTH as two separate, yet interrelated constructs. Approximately 400 children in grades 3 through 6 completed questionnaires assessing personality, SWB, PTH, and other related constructs. Among the several important results of this research, Greenspoon and Saklofske isolated two sub-groups of individuals: children who concurrently reported high life satisfaction but also demonstrated psychopathology and children identified as scoring low on measures of PTH yet still reporting low levels of SWB.

These results suggest that some children who are dissatisfied with their life may not exhibit a greater degree of problems than children who are happy with their life. Also, the results provide evidence that multiple pathways to the presence of PTH exist, and individuals with both high and low SWB may experience problems. The dual factor of mental health proposed by these researchers presents further evidence for the importance of studying SWB separately to gain a more complete picture of mental health. The utility of such a model was demonstrated through the identification of important differences in social functioning and personality dimensions between the groups (findings summarized later in this chapter).

In sum, researchers in diverse fields (i.e., social work, school psychology, developmental psychology) have independently suggested the same theme- psychologists must assess more than mental illness in order to understand and predict functioning. Empirical studies with children (i.e., Greenspoon & Saklofske, 2001) and adults (i.e.,
Keyes, 2002) have demonstrated that mental health is not a continuum. In contrast, combinations of positive and negative indicators yield comprehensive categories of mental health. Because the dual-factor model proposed by Greenspoon and Saklofske (2001) has the most empirical support with respect to the importance of these categories in predictions of developmental outcomes in childhood, this model was selected as a framework for the current study of early adolescents’ physical health.

Importance of Assessing SWB in Children

Understanding SWB in youth is important for helping children to reach greater levels of life satisfaction, which in turn can also help prevent future problems from manifesting as well (Suldo & Huebner, 2004a). In other words, attending to SWB also serves a preventative role in mental health promotion rather than a traditional treatment function. A growing body of research supports the various functions that life satisfaction may play as a protective factor against PTH, as well as fostering a greater productivity level in society and more positive relationships with others. In support of the protective role the SWB may play, low life satisfaction has been shown to precede depression onset in the adult years utilizing a sample of over 2,000 participants (Lewinsohn, Redner, & Seeley, 1991). Additionally, Frisch (1999) found low life satisfaction to predict factors such as suicidal behavior and physical health.

Beyond a role of prevention in screening for ‘at-risk’ levels of well-being, happiness has also been found to be correlated with various positive personal circumstances. For instance, Lyubomirsky and colleagues found that happiness does indeed provide benefits at the individual, family, and community level (Lyubomirsky, King, & Diener, 2005). Meta-analyses of longitudinal data revealed that, in general,
happier people gained benefits such as a more positive state of mind, social advantages such as a higher likelihood of marriage and more friends, greater work productivity and higher income, as well as increased energy and activity. Of note, results showed that happiness *preceded* as well as paralleled many of these successful outcomes. In other words, individuals were not simply happier as a result of better life circumstance, but rather, their frequency of positive affect played a role in future desirable outcomes and successes. However, other confounding variables contributing to positive life outcomes beyond happiness could not be controlled for in these analyses; therefore, a definitive conclusion of these relationships cannot be determined.

When considering the many advantageous byproducts of happiness and SWB, promotion of happiness among our youth becomes a vital step in ensuring a more positive and productive future and livelihood. In order to promote happiness, we must first recognize the need to accurately assess and examine SWB and factors to which it relates. Such study affords the ability to identify various factors and life circumstances that may either promote or inhibit happiness. A summary of many of these correlates yielded from existing cross-sectional studies is provided below.

**Correlates of Subjective Well-Being**

There are many factors that play a role in a person’s level of SWB. Issues such as family relationships and stressful life events or circumstances are all central in one’s formation of a SWB judgment (Huebner, Suldo, & Gilman, 2006). In addition, cognitions pertaining to these life events and circumstances as well as personality characteristics (e.g., optimism versus pessimism) can indirectly influence SWB. Although not every factor will affect each individual and the degree of impact varies,
understanding of potential predictors provides clearer insight into the bases for subjective evaluations of one’s life.

An important line of inquiry in the study of children’s subjective well-being pertains to the extent to which SWB relates to various outcomes (e.g., emotional, social, educational, and physical functioning). Notably, much of the research on outcomes of SWB has not attempted to disentangle the causality of these relationships; however, a moderate to strong relationship has certainly been demonstrated for many of these domains in studies of adults (Lyubomirsky, Sheldon, & Schkade, 2005). For instance, higher levels of SWB have been associated with social rewards such as greater numbers of friends and richer social interactions (i.e., greater perceived depth to conversations and greater perceived caring from friends) (Harker & Keltner, 2001; Okun, Stock, Haring, & Witter, 1984). Also, those who report greater levels of happiness in life have been found to exhibit greater self-control and more coping abilities (Aspinwall, 1998; Fredrickson & Joiner, 2002).

In sum, research to date has examined the degree to which personal characteristics and life circumstances impact SWB, as well as how low SWB may affect physical health, relationships, and other aspects of life. In order to provide a comprehensive understanding of the development of subjective well-being in youth, the most frequent correlates of children and adolescents’ life satisfaction will be summarized briefly in the subsequent sections of this chapter. An extensive review of outcomes related to SWB (i.e., social, emotional, educational, and physical functioning) follows, as physical health outcomes are a particular focus of the current study.
Demographic Variables

When considering the studies thus far examining demographic characteristics related to life satisfaction, no differences have been identified for the majority of variables, including gender, race, and/or socioeconomic status (Huebner et al., 2006). Age, however, may play a small role in life satisfaction fluctuations. Particularly, global life satisfaction reports tend to decline slightly as children proceed into and through adolescence (Suldo & Huebner, 2004b). This finding has demonstrated consistency across cultures and geographic regions such as China (Chang, McBride-Chang, Stewart, & Au, 2003) and Israel (Ullman & Tatar, 2001) as well. Though SWB may be subject to temporary fluctuations throughout life, a national study in Australia demonstrated that happiness ratings remain consistent across age groups; no significant differences in SWB were found across age groups when controlling for other variables such as gender, and place of residence (Cummins, Eckersley, Pallant, Van Vugt, & Misajon, 2003).

Self-Perceptions and Cognitions

Attitudes and thoughts explain a substantial portion of variation in children’s life satisfaction reports. Various cognitive styles including an internal locus of control have been found to correlate with SWB (Ash & Huebner, 2001). Specifically, adolescents who adhere to an internal locus of control (those who believe their personal successes and accomplishments are a result of their own effort and ability to achieve each success) report elevated levels of life satisfaction as compared to peers who explain these same positive events as a result of chance or environmental influences, thereby adhering to an external locus of control. In a similar line of research, Rigby and Huebner (2005) found
that attributional style played a functional role in adolescents’ life satisfaction. Among a sample of over 200 high school students, attributional style was the mediating factor between adolescents’ emotional stability and life satisfaction. An adaptive attributional style, defined as internal, stable, and global attributions for positive outcomes in life, was significantly positively correlated ($r = .40$) with life satisfaction. A significant negative correlation ($r = -.23$) was found between a maladaptive attributional style (similar to an external locus of control) and life satisfaction. Results also showed that an adaptive attributional style partially mediates the relationship between emotional stability and life satisfaction. Finally, higher self-esteem has been related to increased life satisfaction during the child and adolescent years (Dew & Huebner, 1994). Research with 350 college students in Korea (mean age = 21.40 years) yielded similar findings, indicating a positive correlation ($r = .39$) between self-esteem and subjective well-being (Cha, 2003).

**Personality**

Personality and temperament also influence a young person’s life satisfaction. McKnight, Huebner, and Suldo (2002) found a negative correlation ($r = -.39$) between neuroticism and life satisfaction, indicating that the more adolescents tend to worry about their lives and impose stress on themselves, the more their life satisfaction level diminishes. The researchers suggested that personality influences on life satisfaction are important to consider before implementing any prevention strategies. For instance, it would be ineffective to work at raising a person’s life satisfaction if they remain fixated on worrying about everything that may happen to them.

Cheng and Furnham (2003) also found that certain personality aspects were correlated with adolescents’ happiness. In addition to confirming McKnight et al.’s
(2002) findings regarding the inverse relationship between neuroticism and life satisfaction ($r = -.43$), in Cheng and Furnham’s sample extraversion was modestly, positively correlated ($r = .45$) with life satisfaction. One interpretation of this finding could be that greater levels of extroversion may contribute to having more friends or better social relationships, which are associated with increased SWB.

**Environmental Characteristics**

Environmental variables, including the quality of children’s surroundings such as family, parenting, and neighborhood characteristics, are strong correlates of life satisfaction. Family factors found to be related to happiness during youth include parent marital status and degree of involvement from caregivers. For instance, Demo and Acock (1996) found that divorced or remarried parental status was related to diminished reports of well-being. Parental involvement is an even stronger family predictor; youth may perceive lack of involvement as indicative of a poor parent-child relationship, thus resulting in decreased life satisfaction (Grossman & Rowat, 1995).

*Parenting style and practices.* Aspects of parent-child relationships are among the strongest predictors of SWB during youth (Huebner et al., 2006). For instance, research based on self-reports from a sample of 1,200 middle and high school students demonstrate that parental social support and warmth are strongly associated with life satisfaction at every stage of childhood and adolescence, with a mean correlation of .49 (Suldo & Huebner, 2004b). Moreover, the strength of this relationship has shown consistency even in the face of stressful life events such as high school dropout (Zimmerman, Salem, & Maton, 1995) and teenage pregnancy (Stevenson, Maton, & Teti, 1999). In a broader sense, an authoritative parenting style (one that encompasses social
support and warmth among other factors such as promotion of adolescents’ autonomy and strictness-supervision), is related to more positive reports of life satisfaction among youth (Petito & Cummins, 2000; Suldo & Huebner, 2004b). Specifically, Petito and Cummins (2000) identified four parenting styles based on parent-child decision making: authoritarian (parents make decisions), authoritative (joint process), indulgent (joint process but adolescent decides) and unengaged (adolescent decides). Analyses revealed the life satisfaction of adolescents who perceived an authoritative parenting style was significantly higher than the life satisfaction of adolescents who perceived an unengaged parenting style. No significant differences were found between adolescents who perceived other types of parenting styles. These studies suggest that children’s perception of moderate parental involvement, support, and joint decision-making leads to greater levels of life satisfaction than a perception of little to no social support, and/or unengaged parents.

**Neighborhood/community.** Broader neighborhood and community factors have also been found to correlate with children’s and adolescents’ happiness levels. Specifically, location and diversity of neighborhoods have proven to be among important larger-scale contextual variables. Homel and Burns (1989) reported that children with high life satisfaction are more likely to reside in residential areas or suburbs versus inner-city commercial areas. Similar findings have been established in the adult literature; Australian residents residing in ‘country’ areas reported higher levels of subjective well-being than those living in large cities or urban districts (Cummins et al., 2003). The business and stress of residing in urban areas (e.g., close quarters, noise levels, higher rates of crime) may attribute to these differences in life satisfaction, although further
research investigating these variables is needed to draw conclusions. Additionally, one study in Norway discovered that neighborhoods with a fairly homogenous ethnic/racial composition were found to be associated with higher reported life satisfaction of its resident youth; this finding was particularly pertinent among recently immigrated children (Sam, 1998). These studies suggest that a sense of similarity and perceived commonality among neighbors may have a positive influence on life satisfaction as well.

In conclusion, these findings support the notion that individual differences in global life satisfaction reports of youth are linked to a variety of intrapersonal, interpersonal, and environmental variables. Rather than viewing SWB simply as an outcome variable, more recent research has supported the functional role of life satisfaction and the role it may play in children and adolescents’ behavior and functioning (Huebner et al., 2006). Therefore, another important line of research examines the degree to which high or low life satisfaction levels in turn impact various outcomes. Indeed, fairly moderate relationships between SWB and outcomes across several domains of functioning (i.e. emotional, social, physical) have been previously demonstrated in research with adult populations (Lyubomirsky, King, & Diener, 2005). The following sections provide a review of these outcomes related to mental health among children and adolescents.

Developmental Outcomes Associated with Subjective Well-Being

Social Functioning

As noted, life satisfaction is impacted by the social environment in which a person functions. Additionally, perceived social support and personal social competence are related to children’s SWB. For instance, in their seminal research of a dual-factor model
of mental health among children, Greenspoon and Saklofske (2001) examined the degree to which interpersonal relations, among other factors, impacted reported levels of SWB and PTH among a sample of 407 children in grades three through six (mean age = 10.5 years) in western Canada. SWB was measured using the MSLSS, while PTH was assessed via the teacher- and self-report forms of the Behavior Assessment System for Children (BASC: Reynolds & Kamphaus, 1992). Students with low levels of SWB (regardless of reported PTH levels) perceived the overall quality of their interpersonal relations (measured via the Assessment of Interpersonal Relations (AIR: Bracken, 1993)) as poor compared to students reporting high levels of SWB and low levels of PTH. In other words, low subjective well-being was consistently related to a diminished perception of relationships, despite whether students showed symptoms of mental illness. Replication of the dual-factor model of assessment with participants diverse in age and ethnicity is necessary to assess the applicability across various demographics.

A similar investigation of life satisfaction (assessed via the SLSS) in relation to perceived social support was conducted among a sample of 698 middle and high school students (Suldo & Huebner, 2006). The researchers found that adolescents reporting extremely high life satisfaction (i.e., in the top 10% of life satisfaction scores relative to peers) reported the highest levels of social support compared to peers reporting average and low levels of life satisfaction. Social support was measured using the Child and Adolescent Social Support Scale (CASSS: Malecki & Demaray, 2002), which assesses children’s perceptions of social support from four sources: parent(s), teacher(s), classmate(s), and a close friend. Adolescents with very high life satisfaction reported the greatest levels of social support across all four domains. This finding is notable because
more perceived social support was reported by adolescents with very high life satisfaction when compared to adolescents reporting both average and low life satisfaction. Interestingly, students reporting average life satisfaction still indicated levels in the slightly to moderately positive range. In other words, extremely high life satisfaction does seem to have advantages for social functioning even over average life satisfaction. The advantages of extremely high life satisfaction for adolescents in other domains of functioning (e.g., educational and physical health) have yet to be determined.

Finally, Fogle, Huebner, and Laughlin (2002) examined the relationship between temperament, social self-efficacy, social competence, and life satisfaction among 160 adolescents ages 10 to 15 years. Social self-efficacy (measured via a subscale of the Student Self-Concept Scale (SSCS: Gresham, Elliott, & Evans-Fernandez, 1993) was found to play a mediating role in the relationship between extraversion and life satisfaction (measured via the SLSS). In other words, students that perceive themselves as extraverted also tend to report greater perceived social competence, thereby boosting levels of satisfaction with their lives as well. Interestingly, objective levels of social competence, as rated by students’ teachers (via the School Social Behavior Scales (SSBS: Merrell, 1993)), were not related to life satisfaction. Ratings of social competence from other sources such as parents or peers may provide further insight into whether objective indicators of social competence play a role in life satisfaction among youth.

Emotional Functioning

Consistent with the aforementioned relationship between SWB and PTH, researchers have demonstrated that life satisfaction has meaningful relations with emotional functioning. For instance, Huebner and Alderman (1993) found that 28
elementary school children diagnosed with emotional disabilities reported lower levels of life satisfaction, measured using the SLSS, as compared to 28 children with learning disabilities or with no diagnosed handicap. To control for confounding variables, students were matched on race/ethnicity and gender. Research conducted by Huebner, Funk, and Gilman (2000) shows that relationships between emotional functioning and life satisfaction are relatively stable across time as well. Ninety-nine high school students (mean age = 16.4 years) were administered the SLSS and the BASC twice over a period of one year. The BASC is a nationally standardized instrument that assesses problem behaviors such as anxiety, depression, and atypicality as well as behaviors and attitudes associated with healthy adaptation, including interpersonal relations, self-esteem, and self-reliance. Results showed moderate positive correlations between the BASC adaptive scales and life satisfaction ($r = .22$ to $.48$), and moderate negative correlations between life satisfaction and the scales assessing problem behavior ($r = -.12$ to $-.56$). Correlations between Time 1 and Time 2 LS and BASC outcomes remained consistent across both administrations, supporting the notion that these relationships are constant throughout development.

The existing literature examining various problem behaviors among youth as related to positive indicators of mental health has also yielded consistent relationships. In one study, the relationship between perceived life satisfaction and substance abuse among 5,000 high school students was assessed (Zullig, Valois, Huebner, Oeltmann, & Drane, 2001). The use of various drugs and alcohol was significantly associated with reduced life satisfaction, as measured by a six-item scale adapted from the MSLSS. Internal consistency for this adapted scale was found to be .85. However, race and gender had
significant moderating effects on the type of substance abuse that resulted in decreased LS, and the degree to which LS was impacted. For instance, beginning smoking after 13 years of age was associated with decreased life satisfaction for white females and black males. Also, drinking before age 13 was negatively correlated with life satisfaction for all groups except white males. Of note, the subgroups compared were of fairly equal size (i.e., white females comprised largest subgroup, with 26% of respondents and black males comprised the smallest subgroup (21.2%), leading to a consistent power level across subgroups for comparative analyses). Possible explanations for these findings included differing societal pressures and standards in regard to substance use across genders and ethnicities. The degree to which these behaviors are acceptable to family and peer groups may also impact their correlation with life satisfaction, but these hypotheses have yet to be empirically tested. Another finding of this research was that the age at which specific drugs were first attempted impacted the degree to which their later abuse led to decreased life satisfaction. Specifically, smoking the first cigarette before age 13 years was significantly associated with decreased life satisfaction across all groups of adolescents. Each of these findings must be interpreted with caution as reports of life satisfaction and substance use were administered concurrently; therefore, the temporal sequence of substance use and decreased life satisfaction cannot be determined.

Valois and colleagues examined the degree to which decreased life satisfaction was correlated with suicide among high school students (Valois, Zullig, Huebner, & Drane, 2004). The Youth Risk Behavior Survey was administered to the same 5,000 adolescents ages 13-18 to assess suicidal thoughts and behavior (e.g., ‘During the past 12 months, did you ever seriously consider attempting suicide?’). Logistic regression
analyses revealed that all four items assessing suicide were significantly related to reduced life satisfaction (mean odds ratio of 4.44 across gender and ethnicity), as measured by the Brief Multidimensional Students’ Life Satisfaction Scale (BMSLSS: Seligson, Huebner, & Valois, 2003). Additionally, gender and ethnicity dictated the degree to which suicidal thoughts and/or behavior resulted in decreased life satisfaction, with the greatest negative impact on LS found among white females. These results support the notion that positive mental health is significantly related to emotional functioning, but the magnitude of this relationship varies across intrapersonal and contextual variables.

Educational Outcomes

Although studies of life satisfaction in relation to schooling are less prevalent than examinations of happiness related to social and emotional functioning, this relationship is equally important to consider, particularly among children and adolescents. Society places a strong focus on education during these developmental periods, and young people spend a majority of their day in school-related activities. Therefore, the impact of educational factors on happiness is a priority for current research.

Students’ satisfaction with school has shown a direct relationship with their overall life satisfaction. For example, an examination of students’ happiness in a sample of 887 Norwegian youth age 13-15 years demonstrated that feelings of school alienation (disregard for and dislike of school) and school distress (negative emotional impact of attending school) were associated with decreased happiness (measured via a one-item indicator, ‘In general, how do you feel about your life at present?’) (Natvig et al., 2003). Additionally, the MSLSS provides support for a five-factor model of children’s life
satisfaction, a model in which satisfaction with school is one component that comprises overall satisfaction with life (Huebner & Gilman, 2002). Research with 79 American high school students demonstrated a moderate correlation \((r = .31)\) between scores on the SLSS (global life satisfaction) and a one-item indicator of current school satisfaction (Huebner, 1991).

Specific school climate variables such as levels of teacher support provided to students have also been shown to correlate with children’s SWB. Suldo and Huebner’s (2006) study of 70 adolescents ages 11-19 with extremely high life satisfaction revealed that these adolescents perceived higher mean levels of social support from teachers than 224 same-aged peers with both average and low life satisfaction. Additionally, Natvig and colleagues’ (2003) research with Norwegian students provides further evidence that students’ perceptions of teacher support are related to global life satisfaction. Students completed a three-item measure of emotional support from teachers and a one-item indicator of happiness. Logistic regression analyses revealed that increased perceptions of support from teachers was related to increased life satisfaction. Notably, support from classmates was not a significant predictor of life satisfaction. Leung and Leung (1992) found that teacher support was not as highly correlated with life satisfaction (measured via the Satisfaction with Life Scale (SWLS: Diener, Emmons, Larsen, & Griffin, 1985)) among a sample of 1,156 Chinese students \((r = .13)\). Follow-up regression analyses showed that students’ relationship with school (of which teacher support was one component) was not a significant predictor of life satisfaction. However, teacher support was combined with student involvement in these analyses; a direct comparison of support
from teachers to student’s life satisfaction would provide a better estimate of this relationship.

More internal educational factors such as academic success have also been shown to relate to children and adolescents’ happiness. In particular, subjective measures of academic performance such as perceived academic competence have shown consistent, positive relationships with life satisfaction. Huebner, Gilman, and Laughlin (1999) surveyed 290 middle school students, and found a positive correlation between life satisfaction (assessed via the SLSS) and children’s perceptions of their academic competence, as measured by the Self-Description Questionnaire-II (SDQ-II: Marsh, 1990) \( r = .37 \). This relationship has also been established in Asian cultures, where a strong emphasis is placed on academic performance for children and adolescents. Leung, McBride-Chang, and Lai (2004) administered the MSLSS to 346 7th graders and asked them to rate their performance in three primary subject areas (Chinese, English, and mathematics) relative to classmates. Perceived academic performance was significantly correlated with all domains of life satisfaction. The highest relationship was with self satisfaction \( r = .52 \).

Although subjective measures of performance relate with life satisfaction among youth, objective indicators of academic achievement have failed to yield such consistent correlations. Among 79 Caucasian middle school students, average report card grades were not related to life satisfaction scores as measured by the SLSS (Huebner, 1991). Research with ethnically diverse populations of students has also demonstrated similar results. For instance, similar levels of life satisfaction, as measured by the MSLSS, were reported among 80 African American and Caucasian high-school students identified with
a learning disability and 80 general education peers, matched on ethnicity and gender (McCullough & Huebner, 2003). Ash and Huebner (1998) examined life satisfaction among 61 middle school students identified as gifted and 61 students in general education, matched on ethnicity and gender. Both groups of students reported similar levels of life satisfaction (measured via the MSLSS). These studies suggest that subjective evaluations of academic ability are related to life satisfaction to a greater degree than objective measures such as school grades. However, relatively small sample sizes have been used in each of the three studies examining objective indicators of academic performance and life satisfaction. An extension of similar methods with a larger sample of students may yield more significant correlations between these variables.

**Physical Health Outcomes**

*Research with youth.* The literature base addressing SWB and related physical health characteristics is very limited. Of the existing manuscripts examining this relationship, almost all focus on the subjective quality of life of those living with a form of chronic illness. For instance, SWB measurement as related to long-term illness in working with children with chronic asthma has been considered (Bray, Kehle, Peck, Theodore, & Zhou, 2004). The authors proposed a theory to explain the reduction of emotionally triggered asthma through positive psychology treatments. The central tenant of this theoretical model was that enhanced SWB in turn will promote decreased levels of anxiety, thus lowering sympathetic and parasympathetic branches of the autonomic nervous system that affect lung function. This model is based on the underpinnings of interactions between the central nervous system, psychological factors, and ultimately, the immune system and physical health. Children suffering from asthma would
potentially cope with the anxiety associated with an asthmatic attack or exacerbations more efficiently when they have a high emotional well-being. Therefore, interventions targeted at increasing subjective well-being of these patients are recommended. Unfortunately, there is a dearth of such interventions with empirical support. Previous research supports the use of psychologically based interventions such as guided imagery to improve lung functioning of patients with asthma (Peck, 2001). Empirical research that examines the effectiveness of SWB enhancing treatments in improving asthma symptoms is needed. In addition, research should also test the association between SWB enhancement and other health outcomes.

One empirical study of children living with a chronic illness relative to SWB examined 127 patients with asthma and spinal cord injuries (Hampton, 2004). Specifically, researchers explored the contributions of perceived health, self-efficacy beliefs, and perceived social support to SWB among over one hundred individuals with spinal cord injuries. SWB was assessed using the Index of Psychological Well-Being (IPWB: Berkman, 1971), an eight item indicator of well-being. Frequency of negative and positive affect or feelings were combined to form a composite SWB score. Of note, low scores on the IPWB reflect higher levels of SWB. Results indicated that perceived health, as measured by the Self-Rated Health Status Scale (SRHSS: Lawton, Moss, Fucomer, & Kleban, 1982), was moderately significantly correlated with SWB ($r = -.42$) and was among four correlates to predict a substantial portion of variance in SWB among these patients, along with age at which injury occurred, self-efficacy and perceived social support. Since a control group of healthy children was not included in this study, it is not known whether these findings are specific to children with chronic illnesses.
While existing research addressing chronic illness and SWB is extremely limited, only one study has examined the relationship between life satisfaction and everyday physical functioning and symptoms within healthy children and adolescents. Zullig, Valois, Huebner, and Drane (2005) explored the relationship between life satisfaction and health-related quality of life among a state-wide sample of nearly 5,000 adolescents ages 13 to 18 years. Participants completed the BMSLSS and the Health-Related Quality of Life (HRQOL), a four-item scale developed by the Centers for Disease Control and Prevention that assesses self-rated health, number of poor physical and mental health days, and activity limitation days due to poor physical or mental health. Results indicated that life satisfaction was significantly negatively correlated with greater numbers of poor physical health \( r = -0.15 \) and activity limitation days \( r = -0.27 \). Additionally, ratings of self-rated health were inversely associated with reduced life satisfaction \( r = -0.21 \).

This research provides preliminary support for a relationship between life satisfaction and physical health and functioning. However, the research in this domain is still extremely narrow. In fact, only one study has examined SWB (including measures of both life satisfaction and positive and negative affect) as a function of physical health among youth. McKnight (2004) examined 29 pediatric oncology patients ages 11-21 across several dimensions including life satisfaction, hope, and affect. Contrary to hypotheses, patients’ life satisfaction (as measured by the MSLSS and SLSS) and positive and negative affect levels (as measured by the PANAS-C) were comparable to that of 29 healthy children of similar ages. These findings are consistent with previous literature indicating that levels of SWB are fairly stable across time, although temporary fluctuations in response to life events may occur (Headey & Wearing, 1989). Patients
included in this study had received a diagnosis of their illness (a form of leukemia or lymphoma) at a mean of 38 months prior to participating, and therefore any decreased impact on SWB may have stabilized at the time data were collected. On the other hand, relatively small sample sizes may have reduced power to detect significant group differences in SWB. An additional investigation using a larger sample of patients is necessary in order to draw more definitive conclusions.

While examinations of SWB related to physical health have found positive correlations between these variables, results are quite preliminary. One study utilizing a large sample size established significant correlations between life satisfaction related to everyday physical functioning; however, a more comprehensive measure of positive functioning such as SWB related to physical functioning is needed. In addition, an extension of McKnight’s research (2004) with a larger sample may better determine the SWB of children suffering from various chronic illnesses and conditions. Demographic and environmental influences (e.g., age, gender, parenting style) impacting the relationship between physical and mental well-being among youth must also be examined.

While only three empirical investigations have addressed the relationship between SWB and physical health among youth, larger bodies of literature have documented a) a relationship between physical health and SWB in adults and b) a relationship between physical health and psychopathology (PTH) in youth. The following sections provide a review of the literature in each of these areas.

Research with adults. Although the research base on SWB as related to physical health in children is extremely limited, this relationship has been examined more
extensively among adult populations. Examining adult findings provides a more comprehensive picture of these constructs. In an adult population of over 3,000 individuals ages 25 to 74 years, Keyes (2005) found that ‘completely mentally healthy’ adults, as measured by both positive and negative indicators of well-being (using the Composite International Diagnostic Interview Short Form (CIDI-SF: Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998)), reported the fewest health limitations in daily living activities as well as the fewest missed days of work, as compared to adults classified in other groups of mental health and illness. Positive constructs of mental health were measured using various self-report questionnaires of positive affect and psychological social well-being. Validity and reliability of these measures has been demonstrated in previous research (Ryff, 1989; Keyes, 1998). Health limitations in daily life was operationalized as whether physical health limited oneself to any degree (e.g., ‘a lot’ to ‘not at all’) in nine daily activities, including climbing stairs, bending at the knees, walking more than one mile, and lifting heavy objects. These results confirm the notion that mental health is related to physical health and subsequent physical performance in everyday life.

However, demographic group differences were not assessed in this research; therefore, the extent to which gender, race, or other variables may impact these findings has yet to be determined.

An examination of predictors of life satisfaction in 72 college students found physical health to be a significant correlate (Pilcher, 1998). The SWLS was used to measure global life satisfaction; these reports were compared with students’ ratings of physical health (assessed using the Cornell Medical Index (CMI: Brodman, Erdmann, Wolff, & Miskovitx, 1986)) as well as an index of sleep quality. The CMI contains items
representing different types of health complaints and frequency of illness (e.g., ‘do you frequently find it hard to breathe?’, ‘do you suffer from frequent headaches?’). Life satisfaction was inversely related to physical health complaints \((r = -.30)\) and frequency of illness \((r = -.36)\). Life satisfaction, therefore, was influenced to some degree by students’ physical health and functioning.

The relationship between physical health and SWB among adult populations has also been demonstrated in large scale studies, both at a national level and longitudinally. The National Survey of Mental Health and Well-being in Australia, sampling over 10,000 individuals, showed that well-being, as measured by a one-item indicator (i.e., ‘How do you feel about your life as a whole, taking into account what has happened in the last year and what your expect to happen in the future?’), was consistently higher in those with good overall physical health, assessed using the General Health Questionnaire (GHQ-12: Goldberg, 1978). Findings also indicated that well-being was lower in persons with physical disorders or disablement due to physical illness or injury (Dear, Henderson, & Korten, 2002).

A recently published national study in the United States illustrated the relationship between life satisfaction and physical health (Mroczek & Spiro, 2005). A twenty-two year longitudinal study, the Veterans Affairs Normative Aging Study founded at the Boston VA Outpatient Clinic, assessed life satisfaction (measured via the Life Satisfaction Inventory-Form A (LSI-A: Neugarten, Havinghurst, & Tobin, 1961) and physical health (measured via a one-item indicator of overall physical health) among other constructs in nearly 2,000 men who were considered normatively healthy. Higher physical health ratings were associated with higher levels of life satisfaction. Moreover,
this relationship was not altered according to changes over time; at all ages, participants who rated their physical health better also reported more satisfaction with their lives.

Research with adults over the past decade has shown consistent, positive relationships between physical health and happiness. Specifically, higher levels of life satisfaction have been associated with specific indicators of physical health (i.e., fewer number of daily health limitations) and perceptions of overall good health. These findings have also been shown across various populations (i.e., a small sample of college students, national representative samples of adults, and male veterans). However, with the exception of Keyes’ research (2005), the majority of these studies utilized only one measure of mental health (i.e., life satisfaction). Further examinations of physical health as related to multiple measures of SWB as well as a measure of psychopathology would establish how physical health relates to positive and negative domains of functioning.

Physical health and psychopathology. Research in previous decades has established a relationship between physical health problems and psychological disorders. In fact, a seminal study in 1970 documented a doubled risk for psychiatric disorders for individuals with chronic physical illnesses among a nationally representative sample of over 1,000 adults ages 21 and older (Rutter, Tizard, & Whitmore, 1970). Risk for psychiatric problems was even greater for those with epilepsy, a somewhat stigmatizing physical condition. The application of such findings among child and adolescent populations has not been explored to the same extent as with adults. However, more studies have been conducted on the relationship between psychopathology (PTH) and physical health in youth relative to studies on the relationship between subjective well-being (SWB) and physical health in youth. This is most likely due to a greater emphasis
on studying PTH among youth throughout the past decades, as opposed to positive indicators of mental health.

One seminal, longitudinal study of physical health in relation to negative indicators of mental health examined the correlates of self-assessed physical health among 1,057 adolescents in grade 9 through 12 (Mechanic & Hansell, 1987). Data were collected twice across a period of two years. Participants rated their general physical health on a scale of 1 to 5, and also completed a frequency checklist of 12 common physical health complaints (e.g. headaches, stomachaches, and sore throats). Depressive symptoms were assessed using the Center for Epidemiological Studies Depression Scale (CESD: Radloff, 1977). Symptoms of depression were moderately negatively correlated with self-rated physical health both at Time 1 and Time 2 ($r = -28$ and $r = -.26$, respectively). A moderate correlation was also found between number of physical health complaints and depressed mood, averaged across Time 1 and 2 ($r = .39$). Notably, only 3-6% of participants rated their overall physical health as poor or fair (a response of ‘1’ or ‘2’ on a 1 to 5 scale), while at least 52% of participants rated their health as very good or excellent (a response of ‘4’ or ‘5’) across both waves of data collection. Therefore, depression among youth reporting very low physical health could not be established in this study.

A longitudinal investigation by Pine, Cohen, and Brook (1997) tested the relationship of one measure of physical health, body mass index (BMI), with two forms of PTH, depression and conduct disorder. BMI is a measure of body fat based on the ratio of height to weight. Over 700 adolescents (mean age of 14 years) were psychiatrically assessed and followed ten years later. Diagnostic interviews with parents
and adolescents were used to assess PTH, while BMI was calculated using a ratio of self-reported height and weight. With all other variables controlled, BMI was not significantly correlated with depression at Time 1 and Time 2. However, adult BMI (measured at Time 2) was significantly related to adolescent conduct disorder (measured at Time 1), while controlling for other factors such as smoking and alcohol use. A potential limitation of this research is that familial history of obesity was not controlled for, despite its established influence on obesity rates.

Psychopathology among children and adolescents with chronic illnesses has also been researched. Williamson, Walters, and Shaffer (2002) examined the prevalence of depression among 59 chronically ill pediatric patients, ages 5-18. The Children’s Depression Inventory (CDI: Kovacs, 1985) was used to assess symptoms of depression. Items pertaining to somatic symptoms were eliminated from the measure to avoid confounding depressive symptoms with health complaints of the patients. Child-reported pain was assessed using a single-item indicator in which children colored in their perceived level of physical pain on a “pain thermometer” following an oral explanation of the item. Self-reported pain was significantly moderately correlated with child depression ($r = .29$).

Similar relationships have been established between psychopathology and teenagers with chronic physical conditions. In a study of 70 adolescents ages 13 to 18 years with epilepsy compared to 70 healthy controls, matched on age, gender, and reading ability, significantly higher levels of psychopathology were found among the sample of youth with epilepsy (Baker, Spector, McGrath, & Soteriou, 2005). These youth reported higher levels of depression and anhedonia (measured via the Birleson
Depression Scale (BDS: Birleson, 1981)) and social anxiety (as measured by the Social Avoidance and Distress Scale (SADS: Watson & Friend, 1969)) compared to controls. Results provide evidence that a chronic physical condition such as epilepsy can have strong psychosocial impacts on adolescents, although research with a larger population would help to confirm the findings. Additionally, because epilepsy is a somewhat stigmatizing disorder (compared to other chronic conditions such as asthma or juvenile diabetes), greater effects on social anxiety and other forms of PTH may be found among this population. A comparison of mental health among youth with epilepsy and other, less overtly noticable physical conditions would provide further insight into the impact of different health problems on psychosocial functioning.

Although fewer empirical studies on PTH in relation to physical health and functioning have focused on youth rather than adults, the literature base in this area is still more expansive than examinations of SWB and physical health. Over the past two decades, various studies have demonstrated significant correlations between forms of PTH and physical health and functioning in child and adolescent populations. Correlations with PTH have been found in regard to various physical conditions, including obesity, epilepsy, and chronic illnesses, as well as perceptions of general health and physical functioning. However, the degree to which other confounding variables may impact these relationships has yet to be determined. More importantly, including an examination of positive indicators of mental health in this research would allow for comprehensive mental health assessment, rather than solely focusing on PTH and physical health.
Conclusions

Throughout the past decades, the field of psychology has progressed beyond a sole focus on psychopathology. Movements within the field of positive psychology have highlighted the examination of positive indicators of mental health, such as subjective well-being, as important in assessing psychopathology (Diener, 2000). A greater focus on well-being has also been evident among child and adolescent populations, as models of mental health assessment for youth that incorporate positive indicators have been proposed (Park, 2003; Roeser, Eccles, & Sameroff, 2000).

The expansive literature base on various correlates of subjective well-being also attests to the growing recognition of its importance. The demographic characteristic of age, environmental variables, and self-perceptions and cognitions all seem to play a role in children’s and adolescent’s life satisfaction, though the degree of these relationships vary (Ash & Huebner, 2001; Chang et al., 2003; McKnight et al., 2002). Outcomes associated with subjective well-being also have been researched across various domains including social, emotional, and educational functioning. Significant correlations across these outcomes support the notion that subjective well-being is associated with many ecological factors (Greenspoon & Saklofske, 2001; Huebner, 1991; Zullig et al., 2001).

Finally, the relationship between physical health and subjective well-being has received some attention, though extremely minimal, in the literature base. Overall, research on the association between physical health and mental health is more established among adults than youth. Preliminary studies with children suggest that addressing children’s comprehensive health needs entails examining SWB (Greenspoon & Saklofske, 2001). An understanding of relationships between happiness and physical
health provides a more complete picture of ‘well-being’, both mentally and physically. A substantial gap exists in the current literature base to sufficiently address this relationship. Specific physical health characteristics (e.g., frequency of chronic and acute or illness or degree to which daily activities are limited due to health problems) as related to happiness and positive and negative affect have yet to be determined or supported in research.

The current study addresses a portion of this gap by examining the daily physical health of middle school children, and linking these factors to varying levels of SWB. Furthermore, the present study provides the first examination of physical health outcomes in line with a dual-factor conceptualization of mental health in youth (Greenspoon & Saklofske, 2001).
CHAPTER 3

Method

Participants

Participants consisted of students enrolled in grades six through eight at a local middle school and teachers from that school familiar with the student participants. The school under study is a large public school in the School District of Hillsborough County (SDHC). The dataset used in the current study was part of a larger study investigating the subjective well-being and psychopathology of middle school students in relation to various educational, physical health, and social outcomes. Approval to conduct the study was obtained from the University of South Florida (USF) Institutional Review Board in November of 2005. The SDHC Department of Assessment and Accountability also granted approval for the study in November of 2005. Data were collected in January and February of 2006 by a research team of graduate students from USF, under the supervision of the primary investigator, a faculty member from the USF School Psychology Program. The author of this proposal was a primary member of the research team.

Selection of Participants

Student participants. In order to participate, students were required to be enrolled full-time at the middle school and obtain parental informed consent in writing. In addition, students were asked to sign a student assent form (see Appendix B) at the time
of data collection. Participation was not sought from students served exclusively in self-contained special education classrooms due to a) a higher risk of experiencing emotional distress while completing the self-report instruments and/or b) lack of the reading and reasoning skills necessary for survey completion. In addition, Non-English speaking students were not included in the present study because the survey relied heavily on knowledge of the English language. Students who met the requirements for participation but were absent on the dates of data collection were also excluded.

A letter of informed consent (see Appendix A) was sent home to parents of all students attending the middle school (N = 1580) prior to data collection. Homeroom teachers were informed by the principal investigator that the first 350 students to return signed parent consent forms would be included in the study. While students were not paid for participation, incentives were offered to increase participation rate. Specifically, to encourage return of parent consent forms, the first 350 students to return signed forms were given a candy bar. Additionally, the homeroom in each grade level with the highest ratio of student participants to overall class size was treated to a breakfast party. Also, three $50 gift certificates to a local mall were distributed to one student from each grade level, chosen at random from the larger body of student participants. A total of 530 students returned signed parent consent forms, representing a 34% return rate for the student population. Of note, although additional parent consent forms were returned, the research team limited total participant enrollment to 400 students due to space availability on data collection days and financial limitations. Demographic characteristics of student participants who were included in the dataset analyzed in the current study are provided in Table 1.
Teacher participants. Upon obtaining a final list of student participants (those with returned parental consent forms and those who provided valid student data during survey completion), the research team identified teachers to be included in the study. Specifically, teachers familiar with one or more student participants were asked to complete a behavior rating scale pertaining to each participant. Teacher familiarity with student participants was based on the student’s enrollment in one or more of the teacher’s class periods for at least one semester. A letter of informed teacher consent (see Appendix C) was distributed to all teachers identified by school administrators as being familiar with the student participants. Teachers were informed of incentives (i.e., $5 gift certificates) they would receive contingent on completing a valid rating scale for each student (valid = consistent responses and all items complete). All teacher rating scales were completed outside of the school day schedule. A total of 44 teacher participants were included, reflective of the number of teachers that had student participants enrolled in their classroom.

Setting

The middle school under study was opened in 2002, and is located in an affluent, suburban community. Total enrollment for the 2005-2006 school year was approximately 1,580 students. This school was selected for participation in the larger study for several reasons. First, the population of students is ethnically diverse (School District of Hillsborough County, 2005). Second, the administration had expressed interest in participating in university-sponsored research. Third, members of the research team were very familiar with school administration and could facilitate data collection.
Measures

Demographics Form

The demographics form (see Appendix D) contained questions regarding date of birth, gender, grade, race/ethnicity, and SES. SES was assessed using the one-item indicator, “Do you receive free or reduced lunch?”. Also included on the demographics form were questions regarding biological parents’ marital status and average hours spent per week completing homework. Two sample likert-type questions were included at the bottom of the demographics form to train students in how to answer likert-type questions using an example of a frequency (“I go to the beach”) and agreement (“Going to the beach is fun”) item. Students rated the items on a scale of 1 to 5. These sample questions represented the general format of all subsequent measures administered.

Subjective Well-Being (SWB) Scales

Students’ Life Satisfaction Scale (SLSS: Huebner, 1991). The SLSS (see Appendix E) is a seven-item measure of global life satisfaction. Respondents are asked to indicate on a 6-point scale (1 = strongly disagree to 6 = strongly agree) the degree to which they endorse general statements about their life (e.g., “life is going well,” “I wish I had a different life”). Scaled scores are obtained by reverse-scoring negatively worded items, then summing the responses and dividing by the number of items to yield an overall judgment of life satisfaction. Higher scores represent higher levels of life satisfaction. The use of self-report to measure life satisfaction is grounded in a theoretical basis that life satisfaction is a subjective perception based on an individual’s internal standards. Concerns over the SLSS as a self-report measure have been addressed through research. Specifically, Huebner (1991) found that the SLSS yielded a small,
non-significant correlation with a measure of social desirability ($r = .05$).

The SLSS has high internal consistency (coefficient alpha = .82) and test-retest reliability at 1-2 weeks ($r = .74$ and .68) (Huebner, 1991; Terry & Huebner, 1995). Temporal stability across a four week period has also been established ($r = .64$) (Gilman & Huebner, 1997). With respect to construct validity, moderate convergent validity has been found between the SLSS and other measures of SWB, such as the Piers-Harris happiness subscale (Piers, 1984) and the Andrews and Withey Life Satisfaction Scale (Andrews & Withey, 1976), with correlations of .34 to .62 (Huebner, 1991). Further evidence of convergent validity has been found by comparing children’s SLSS scores and parent ratings of their children’s happiness ($r = .54$) (Gilman & Huebner, 1997). The SLSS has been used among diverse samples of children and adolescents to determine global life satisfaction, including children identified with learning disabilities and emotional handicaps (Huebner & Alderman, 1993) and children from different ethnic backgrounds (Huebner, 1995).

*Positive and Negative Affect Scale for Children* (PANAS-C: Laurent, Catanzaro, Joiner, Rudolph, Potter, Lambert, Osborne, & Gathright, 1999). The PANAS-C (see Appendix F) was adapted from the Positive and Negative Affect Scale (PANAS: Watson, Clark, & Tellegen, 1988). The PANAS is a twenty-item measure of positive and negative affect developed for use with adult populations. It has been used in subsequent measurements of subjective well-being throughout the past decade (Huebner & Dew, 1995; Kercher, 1992; Watson et al., 1988). This scale assesses the degree to which individuals experience positive and negative affect in daily life by rating a list of emotion descriptions such as ‘mad’, ‘delighted’, and ‘gloomy.’ The PANAS-C is a recent version
of the PANAS, modified for use with children and adolescents. The PANAS-C includes the addition of ten emotion descriptors and minor modifications of PANAS items to adjust for lower readability and comprehension levels (e.g., removal of abstract words such as ‘hostile’ and addition of concrete descriptors such as ‘happy’ and ‘calm’) (Laurent et al., 1999).

The PANAS-C consists of two fifteen-item self-report scales: one scale measures positive affect and one scale measures negative affect. Respondents rate thirty words that describe feelings and emotions on a five-point Likert-type scale to indicate the extent to which they have experienced each mood or feeling in the past few weeks (1 = ‘very slightly or not at all’ to 5 = ‘extremely’). Examples of positive affect descriptors include ‘interested,’ ‘excited,’ and ‘proud.’ Negative affect adjectives include terms such as ‘jittery,’ ‘lonely,’ and ‘sad.’ Scores are summed for each fifteen-item scale to generate an overall score of positive and negative affect.

Adequate reliability and validity data have been established for the PANAS. Internal consistency is .92 for both the positive and negative scales. The correlation between the positive and negative subscales is -.16 (Laurent et al., 1999). The positive and negative affect scales were compared with existing self-report measures of anxiety and depression to determine construct validity (Laurent et al., 1999). Convergent validity was established between the negative affect scale of the PANAS-C and the Children’s Depression Inventory (CDI: Kovacs, 1985) \((r = .60)\). Additionally, adequate discriminant validity was found between the positive affect scale and the CDI and the State-Trait Anxiety Inventory for Children (STAIC: Spielberger & Gorsuch, 1973), with correlations of -.42 and -.20, respectively. Successful use of the PANAS-C to study
affect among child populations has been documented since its preliminary development as well (Jacques & Mash, 2004; Laurent, Catanzaro, & Joiner, 2004).

Psychopathology (PTH) Scales

The Youth Self Report form of the Child Behavior Checklist (YSR: Achenbach & Rescorla, 2001). The YSR is comprised of 112 items designed to measure eight dimensions of psychopathology, among adolescent populations ranging in age from 11-18 years. The YSR assesses eight areas of problem behavior: anxious/depressed, withdrawn/depressed, rule-breaking behavior, somatic complaints, aggressive behavior, social problems, thought problems, and attention problems. Responses are given on a 3-point likert scale in which subjects indicate the degree to which a feeling or behavior is true for themselves currently (i.e., in the past six months). The scale is as follows: 0 = ‘not true,’ 1 = ‘somewhat or sometimes true,’ 2 = ‘very true or often true’. For the purposes of this study, only five of the eight subscales pertinent to the topic of investigation were included. These subscales assessed internalizing (withdrawn/depressed, somatic complaints, and anxious/depressed subscales) and externalizing (delinquent behavior and aggressive behavior subscales) behaviors. Items loading on subscales of social problems, attention problems, and thought problems were not administered.

Reliability of the YSR has been well established. High test-retest reliability at eight days has been found, with coefficient alphas ranging from .80 to .90. Long-term reliability of the YSR at seven months is also moderately high (mean r = .51). Split-half reliability ranges between .55 and .75 (Achenbach & Rescorla, 2001). Validity of the YSR among adolescent populations also is well established. The YSR has been found to
identify children with symptoms of psychopathology with high levels of accuracy, indicating high content validity. Specifically, all items on the YSR have been found to discriminate between clinical populations of adolescents and non-referred samples (Achenbach & Rescorla, 2001). In regard to construct validity, correlations with the diagnostic categories of the DSM-IV checklists range from .27 to .60 (Achenbach, Dumenci, & Rescorla, 2001). Correlations with the BASC, which include mother, father, and teacher reports of psychopathology, range from .38 to .89 (Achenbach & Rescorla, 2001).

Teacher Report Form of the Child Behavior Checklist (TRF: Achenbach & Rescorla, 2001). The TRF is completed by teachers and other school personnel who are familiar with the child’s behavioral repertoire in the school setting. The measure is normed for youths ages five to eighteen years. The scale consists of 113 items in a self-report format identical to that of the YSR. A section covering demographic information pertaining to the student is included that consists of current ratings of academic performance across subjects, months the teacher has known the student, types of services, if any, that the child receives, and concerns or comments regarding the student. The demographic portion of the TRF was not administered in the current study, as demographic information was obtained via school records for the larger portion of this research project. Teachers respond to the 113 items of the checklist by indicating an agreement of 0 (not true), 1 (somewhat or sometimes true), or 2 (very true or often true). Respondents are asked to base their ratings according to present behavior or behavior occurring over the past two months. The 113 items comprise the same eight dimensions of psychopathology as the YSR: anxious/depressed, withdrawn/depressed, rule-breaking
behavior, somatic complaints, aggressive behavior, social problems, thought problems, and attention problems.

Test-retest reliability at 16 days has been found to range from .60 to .95 for the TRF (Achenbach & Rescorla, 2001). Cross-informant agreement between pairs of teachers familiar with the rated student have been moderate, ranging from .28 to .76. Cross-informant agreement between the TRF and YSR has not been as strong ($r = .05$ to .32). The lowest correlations between teacher and self-reports are for somatic complaints ($r = .05$) and thought problems ($r = .10$). Similar to the YSR, the TRF has been found to discriminate significantly between samples of children referred for psychopathology and non-referred samples, demonstrating strong content validity. Convergent validity with the Conners Rating Scale for Teachers- Revised (Conners, 1997) is high (.77 to .89) (Achenbach & Rescorla, 2001).

*Physical Health Outcomes Scale*

*Child Health Questionnaire- Child Form 87* (CHQ-CF87; Landgraf, Abetz, & Ware, 1999). The CHQ-CF87 is an 87-item self-report measure designed to assess twelve physical and psychosocial concepts, comprising twelve subscales. The CHQ is appropriate for self-completion by children 10 to 18 years of age. Overall means for the individual CHQ scales are derived by summing response items, yielding a profile for each of the CHQ health concepts/scales. Only five scales assessing physical health were analyzed in the current study, as other instruments were designed to assess mental health and psychosocial functioning. An additional one-item indicator assessing changes in health (degree to which physical health has gotten better or worse over the previous year) was not utilized in the current study. The five physical health indices analyzed are as
follows: 1) physical functioning (presence and extent of physical limitations due to health-related problems), 2) general health (subjective assessment of overall health and illness), 3) bodily pain/discomfort (intensity and frequency of physical pain and discomfort), 4) social-physical role (limitations in school work and activities with friends due to physical health problems), 5) limitations in family activities (frequency of disruption in ‘usual’ family activities due to child’s health).

Internal consistency reliability estimates for the CHQ-CF87 have been found to range from .63 to .90 across dimensions and samples (Schmidt, Garratt, & Fitzpatrick, 2002; Waters, Salmon, Wake, Wright, & Hesketh, 2001). High internal reliability for this scale has also been reported from a study examining ten of the fourteen scales, with alpha-coefficients ranging from .75 to .90 (Landgraf & Abetz, 1997). Test-retest reliability at 6 weeks ranges from .54 to .73 across samples (Schmidt et al., 2002). Discriminant validity has been examined by comparing scores on the CHQ-CF87 among child populations with differences in health. Self-reports from a representative U.S. sample of children of average health \((n = 380)\) has been compared to populations of children with debilitating conditions such as epilepsy \((n = 31)\), children with active chronic illnesses such as juvenile rheumatoid arthritis \((n = 71)\) and asthma \((n = 318)\), and children with psychosocial health concerns such as attention deficit-hyperactivity disorder (ADHD) \((n = 81)\). Significant inverse correlations on indices of physical functioning, general health, bodily pain, and limitations due to physical health exist between these populations with established differences in physical health \((r = -.31 \text{ to } -.50)\), demonstrating moderate discriminate validity (Landgraf et al., 1999).
**Procedures**

*Student participants.* A list of students who obtained parental consent for participation was compiled prior to data collection. These students were asked to report to the school media center during their elective class period on one of two data collection dates in January of 2006. Questionnaires were completed in groups of approximately 50-75 students. The principal investigator read aloud the student assent form to all students prior to completion of the surveys. Students were told that they could withdraw from the study at any time during the course of data collection. Students were first asked to complete the demographic questionnaire while the principal investigator simultaneously read the questionnaire aloud. Participants then independently completed all measures, described above. Measures in the survey packet were counterbalanced to control for order effects. Specifically, four versions of the survey packet were administered. For example, in packet “A”, the order of measures was as follows: demographics, SLSS, YSR, PANAS-C, CHQ. In packet “B”: demographics, YSR, PANAS-C, SLSS, CHQ, etc. The principal investigator and members of the research team were on hand throughout the administration of the surveys to assist students with questions and ensure independent responding. Upon each student’s completion of the measures packet, a member of the research team visually scanned through the packet to check for skipped items or response errors, and students were asked to complete or correct the items as needed. Approximately 55-60 minutes was allotted for students to complete the measures.

*Teacher participants.* The principal investigator and members of the research team met with teams of teachers during a regularly-scheduled faculty meeting prior to
data collection to explain the current study. At this time, teacher participation was requested. Teachers were informed that their participation would consist of completing behavior rating scales for student participants in their classrooms. During these informational meetings teachers were also informed of the incentives they would receive for participating.

Following collection of student self-report data, members of the research team provided teachers who consented to participate with packets of rating scales to complete for student participants from their classrooms. Although self-report data was collected from 400 students in the larger study, teacher data was only collected for 350 of the participants due to financial restrictions (i.e., limited funds to compensate teachers). The number of rating scales administered to each teacher participant ranged from 3-20. Teachers were given approximately one week to complete the rating scales. Contact information for a research team member was provided to address any questions regarding scale completion.

**Ethical Considerations**

Several precautions were taken to protect student participants. First, the principal investigator of the larger study obtained approval from the Institutional Review Board (IRB) at the University of South Florida and the Hillsborough County School District to conduct this research. Documentation of all possible precautions taken to protect human research participants was submitted before conducting any aspect of data collection. All questionnaires included in this study have been used successfully in previous research with children and adolescents.
A parental consent form was sent home with the student, outlining the goals of the project and how the project goals would be undertaken. All potential risks and benefits associated with the child’s participation in the study were included in the parent consent letter. The letter provided the principal investigator’s contact information in order to allow parents the opportunity to discuss their concerns and ask questions pertaining to the nature of the proposed project and receive immediate feedback.

A student assent form was administered to all students with parent consent. The student assent form outlined the risks and benefits of the study and allowed students to decline or agree to participate. The principal investigator calculated readability for the student assent letter in order to ensure it was suitable for a middle school reading level. In addition, the principal investigator verbally reviewed the letter with students at the time of data collection and provided ample time to answer all questions and inform students of their option of withdrawal from the study at any time without penalty.

Teacher consent was sought from all teachers with student participants in their classroom. Researchers distributed a letter to teachers describing the purpose of the project as well as the time frame for completing all behavior rating scales. The letter included contact information for the research team in order to address any questions.

Data Analyses

A series of statistical analyses was performed to answer the research questions posed in this study.

Correlational analyses. To determine the relationships between subjective well-being (SWB), psychopathology (PTH), and physical health and functioning within the sample of middle school students, correlation coefficients were calculated between each
variable. A correlation coefficient (ranging from -1 to +1) provides information about the strength and direction of the relationship between two variables. An alpha level of .05 was used to determine statistical significance.

*Group Assignments.* Subjective well-being scores (comprised of global life satisfaction, positive affect, and negative affect) and psychopathology scores (i.e., externalizing and internalizing symptoms) were used to determine the existence and sample size (n) of the four proposed classifications of mental health status (see Figure 1). First, published cut-point scores for the PTH scales (i.e., T-scores at or below the ‘at-risk’ range on self-reported internalizing problems and teacher-reported externalizing problems) were used to classify participants as ‘high’ or ‘low’ PTH. Next, because no published norms for SWB are available in the current literature, decision points for ‘high’ and ‘low’ SWB corresponded with the proportion of students classified as having ‘high’ or ‘low’ PTH.

*Figure 1.* A proposed model of mental health classifications (adapted from Greenspoon & Saklofske, 2001).

<table>
<thead>
<tr>
<th>“Vulnerable Youth”</th>
<th>“Troubled Youth”</th>
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<tbody>
<tr>
<td>Low SWB</td>
<td>Low SWB</td>
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<tr>
<td>Low PTH</td>
<td>High PTH</td>
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</table>

<table>
<thead>
<tr>
<th>“Happy Youth”</th>
<th>“Disturbed but Content”</th>
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<tbody>
<tr>
<td>High SWB</td>
<td>High SWB</td>
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<tr>
<td>Low PTH</td>
<td>High PTH</td>
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(SWB = Subjective well-being, PTH = Psychopathology)

*Descriptive analyses.* Means, standard deviations, and additional descriptive data (i.e. skew, kurtosis, etc.) for the entire sample, as well as for the four proposed sub-
samples of students (according to SWB and PTH ratings), were obtained for all variables of interest, which include: subjective well-being (7-item SLSS and 30-item PANAS-C), psychopathology (externalizing and internalizing factors of the YSR and TRF), and dimensions of physical health and the impact of health on academic, emotional, and social outcomes (five physical health scales of the CHQ-87CF).

**Group differences.** To determine if children in the four sub-groups of mental health classification (measured by SWB and PTH ratings) displayed between-group differences in dimensions of physical health (and the extent to which health impacts aspects of their lives), a multivariate analysis of variance (MANOVA) was conducted to determine any differences on all outcomes. Follow-up univariate analyses of variance (ANOVA) were conducted to compare the means of the four sub-groups for each physical health outcome variable and determine if the groups’ means differed by a statistically significant amount. Scheffe tests were then conducted to determine which specific groups differed on each physical health outcome variable. An alpha level of .01 was used to determine statistical significance.

**Limitations of the Current Study**

Several precautions were taken to address potential threats to validity during data collection in order to ascertain that the researcher obtains valid conclusions from the research. First, during administration, questionnaires in the survey packet were counterbalanced to control for order effects. Second, the research team collecting data had knowledge of the appropriate response modes for each questionnaire and were trained to answer students’ questions in a consistent manner to control for administration errors. Additionally, the research team was on site during all data collection and if
student participants appeared agitated (e.g., tearful, angry) or expressed a desire to withdraw from the study, the researchers honored this request immediately. The research team sat students appropriate distances from one another to prevent the participants from seeing each other’s responses; the research team circulated among, and superviseed the students during completion of surveys at least twice during the hour of data collection. Following student data collection, teachers were provided with detailed instructions for completing all behavior rating scales and given contact information for a member of the research team to answer any questions. Finally, no adverse events occurred during student or teacher data collection.

The researcher also took precautions when interpreting the results. Two aspects of threats to the validity of quantitative research addressed in this research include population validity and ecological validity. Population validity is the ability to generalize results from the sample under study to a larger population (Johnson & Christensen, 2004). Unique characteristics of study participants may limit the extent to which results can be generalized to the larger population. A convenience sampling method was employed in the current study and as a result, students who agreed to participate in the research study may differ from students who declined to participate. The research team compared descriptive statistics of the participants of the study to overall demographics of the participating school to ensure that all sub-populations of students were represented.

Ecological validity is the ability of the researcher to generalize the results of a study across settings (Johnson & Christensen, 2004). Violations to ecological validity include the tendency of the researcher to draw erroneous conclusions to populations with different settings than the population under study. The middle school in this study is
located within a middle- to high- SES community; therefore generalizations of results to lower SES areas are made cautiously. Generalization of results to rural communities was also carefully considered as LMS is located in a somewhat urban district.

**Contributions to the Literature**

The current study contributes to the literature by extending a dual-factor model of mental health to a sample of early adolescents (Greenspoon & Saklofske, 2001). Although the dual-factor model has empirical support among a sample of elementary-school children, no published studies have examined the utility of this model for other populations. Furthermore, the present study is the first examination of physical health outcomes related to both positive (SWB) and negative (PTH) indicators of functioning in youth. An understanding of correlations between SWB, PTH, and physical health provides a more complete picture of psychological and physical functioning.
CHAPTER 4

Results

Treatment of the Data

All data were entered during the spring of 2006 by the author of this thesis and other members of the research team. Data were then checked for data entry errors. First, data were checked for scores out of range following data entry. Next, members of the research team reviewed the data entered for every tenth participant to check for errors. Additional data were checked (i.e., data entered for participants immediately proceeding and following every tenth protocol) when data entry errors were detected. Approximately 22% of the data were reviewed for accuracy at completion of this process. Of the checked protocols that contained errors, approximately 1% of the items were originally entered incorrectly. The correct responses were manually entered into the final datasheet. The data were then analyzed to detect the presence of multivariate outliers. Fidell and Tabachnick’s (2001) guidelines for detecting multivariate outliers were employed; specifically, the Mahalanobis distance statistic was calculated for all subjects. With five variables (i.e., internalizing disorders, externalizing disorders, life satisfaction, positive affect, and negative affect) and a criterion of $\alpha = .001$, critical $\chi^2 = 20.52$, ten multivariate outliers were identified and excluded from further analyses. In addition, one subject was removed from the final dataset due to incomplete data. Thus, a final sample of 339 subjects was retained for data analyses.
**Composition of Subjective Well-Being Variable**

Prior to conducting data analyses, a composite subjective well-being (SWB) variable was created using the measures of global life satisfaction, positive affect, and negative affect. Intercorrelations between these three variables were all significant ($p < .0001$). Specifically, global life satisfaction was moderately positively correlated with positive affect ($r = .51$) and moderately negatively correlated with negative affect ($r = -.52$). Positive and negative affect were negatively correlated ($r = -.21$). Consistent with previous research (Kasser & Sheldon, 2002; Sheldon, Kasser, Houser-Marko, Jones, & Turban, 2005), an aggregate SWB index was created by standardizing and summing scores for life satisfaction and positive affect, then subtracting standardized negative affect scores. All subsequent analyses were conducted using the aggregate SWB data.

**Correlational Analyses**

To determine the relationships between subjective well-being (SWB), psychopathology (PTH), and physical health and functioning within the sample of middle school students, Pearson product-moment correlation coefficients were calculated between all variables. Intercorrelations among all measures are presented in Table 2. An alpha level of .05 was used to determine statistical significance. All significant correlations occurred in the expected directions. The two variables comprising PTH - internalizing disorders (self-reported by student participants) and externalizing disorders (reported by teachers who had the student participant(s) in one or more classes) were not significantly related ($r = .01$). Subjective well-being was more related to self-reported internalizing problems ($r = -.66$) than teacher-reported externalizing problems ($r = -.12$), although both correlations were statistically significant. Intercorrelations between the
five physical health variables ranged from $r = .03$ to $r = .44$; all correlations were statistically significant with the exception of the relationship between bodily pain and physical functioning. Regarding the relationships between mental and physical health, intercorrelations between SWB and physical health were all significant and positive ($r = .11$ to .53). Internalizing PTH was more highly related to physical health than externalizing PTH. Specifically, intercorrelations between internalizing PTH and all physical health variables were significant and negative ($r = -.15$ to -.45); only two significant correlations ($r = -.11$ to -.21) were found between externalizing PTH and physical health (general health and family activity limitations, respectively).

**Group Assignments**

Subjective well-being scores (comprised of global life satisfaction, positive affect, and negative affect) and psychopathology scores (i.e., externalizing and internalizing symptoms) were used to assign participants to specific mental health classifications or groups. Participants were first classified according to psychopathology. Specifically, high PTH was defined according to published norms for the Achenbach System of Empirically Based Assessment (Achenbach & Rescorla, 2001). Scores within the ‘at-risk’ or ‘clinically significant’ range on either self-reported internalizing symptoms or teacher-rated externalizing symptoms were grouped as ‘high PTH.’ Selection of informants was based on the hypothesis that children may not be highly reliable reporters of their externalizing or acting out behaviors (Leung et al., 2006); however, children are the most informed reporters of their internalizing symptoms (Kazdin, 1987; Leung et al., 2006; Michael & Merrell, 1998). To be considered at-risk or clinically significant, participant scores had to be at or above a T-score of 60 on one or both groups of
symptoms. Cut-points for raw scores provided by Achenbach and Rescorla (2001) are classified according to gender and are as follows. For self-reported internalizing symptoms (range 0-62), raw scores must be at or above a score of 19 for females and at or above a score of 14 for males to be considered ‘at-risk’. For teacher-reported externalizing symptoms (range 0-64), scores considered ‘at-risk’ must be at or above 6 for females and at or above 10 for males. Using these criteria, 101 of the 339 participants (30%) met criteria for high PTH. The remaining 70% of participants were in the normal range of PTH symptoms based on T-scores below 60, and were thus classified as ‘low PTH.’

Based on the distribution of scores uncovered during the process of classifying participants’ PTH scores, a raw composite score corresponding to the 30th percentile was chosen as the cut-point for subjective well-being. This cut-point was purposefully selected in order to mathematically allow every participant defined as high PTH (30% of sample) to also be defined as low SWB, consistent with a traditional model of mental health in which subjective well-being and psychopathology are assumed to represent opposite ends of a single continuum of mental health. Similar to the method used for PTH, all students above the 30th percentile on SWB (z-score ≥ -0.78; raw scores of LS ≥ 4.04, PA ≥ 3.36, NA ≤ 1.22) were classified as ‘high SWB’, while all students below the 30th percentile (z-score < -0.78 ; raw scores of LS < 4.04, PA < 3.36 , NA > 1.22) were classified as ‘low SWB.’

Of note, clinical norms for SWB have not been published in the literature base. However, previous researchers have dichotomized global life satisfaction (one of the three components of SWB) using a cut-point of a raw score of 4.0 (on the 1 to 6 scale), in
which scores above 4.0 are considered ‘high’ life satisfaction and scores below 4.0 are considered ‘low’ life satisfaction (e.g., Suldo & Huebner, 2004a). When applying the raw score cut-point of 4.0 for life satisfaction to the sample in the current study, approximately 25% of the sample reported global life satisfaction scores below 4.0, and would be considered to have ‘low’ life satisfaction. Thus, it is plausible that 30% of the sample would indeed be considered ‘low’ on the SWB composite variable as well. Using the raw score cut-point of 4.0, the remaining 65% of the sample would be considered to have ‘average’ to ‘high’ life satisfaction (i.e., raw scores above 4.0) according to previous literature (Suldo & Huebner, 2004a). Due to the paucity of research on children’s affect, similar classifications of high levels of positive or negative affect have not been published. For purposes of the current study, the subgroup of students above the 30th percentile on the composite SWB score was termed ‘high SWB.’

Finally, a new variable representing mental health groups was created based on participants’ dichotomized high or low scores on SWB and PTH. Four values of mental health group were possible: 1) high PTH, high SWB, 2) high PTH, low SWB, 3) low PTH, high SWB, and 4) low PTH, low SWB. Results supported a dual-factor model of mental health because not all participants who reported psychopathology symptoms in the at-risk or clinical range also reported low subjective well-being. Specifically, approximately 13% of participants reported high psychopathology but also reported high subjective well-being, comprising the hypothesized group of ‘disturbed but content’ youth. Similarly, average or high subjective well-being was not always reported by participants with low levels of psychopathology. For roughly 13% of the total sample, while psychopathology scores were not in the ‘at-risk’ or ‘clinically significant’ range,
subjective well-being scores were still low. This subsample of youth fit the hypothesized
classification of ‘vulnerable’ youth. Both of these groups support a dual-factor model of
mental health, comprised of PTH and SWB, beyond that of a single continuum.

The demographic characteristics for the four groups are displayed in Table 1. To
test the relationship between demographic variables and group membership, four chi-
square tests were conducted. Race was significantly related to group membership ($\chi^2 (18) = 38.86, p = .003, V = .20$); specifically, African-American students appear to be
overrepresented in the Disturbed but Content and Troubled groups and underrepresented
in the Happy group, Hispanic students appear to be overrepresented in the Vulnerable
group, and Caucasian students appear to be underrepresented in the Disturbed but
Content and Troubled groups. SES was significantly related to group membership ($\chi^2 (3) = 16.31, p = .001, V = .22$); specifically, students who receive free/reduced lunch (low
SES) appear to be underrepresented in the Happy group and overrepresented in the
remaining three groups. Neither grade level ($\chi^2 (6) = 5.98, p = .43, V = .09$) nor gender
($\chi^2 (3) = .93, p = .82, V = .05$) was associated with group membership.

Means and standard deviations for all SWB and PTH variables measured (life
satisfaction, positive affect, negative affect, subjective well-being, externalizing
problems, and internalizing problems) were computed for the entire sample (N = 339) as
well as for the four subsamples of participants. The results of the descriptive analyses
are presented in Table 3. For each variable, higher scores reflect increased levels of the
construct indicated by the variable name.

*Group 1: Happy Youth.* This subgroup consisted of 194 adolescents (57% of the
total sample). Participants in this subgroup scored in the average range on self-reported
internalizing symptoms and teacher-reported externalizing symptoms of psychopathology and reported average to high subjective well-being. Specifically, on the six-point likert-type scale measuring life satisfaction, their mean scores were 5.03, corresponding to an endorsement of ‘agree’ to statements such as ‘I have a good life.’ The mean positive affect score was 3.98 on the five-point measure of positive affect; this mean score corresponds to an endorsement of ‘quite a bit’ to experiencing affect descriptions such as ‘excited’ and ‘happy.’ The mean negative affect score was 1.36 on the five-point measure of negative affect; this corresponds to an endorsement of ‘very slightly or not at all’ to experiencing feelings such as ‘upset’ and ‘gloomy.’ The subgroup means for internalizing and externalizing symptoms were raw scores of 7.07 and .82, respectively, which corresponds to T-scores for internalizing symptoms of T=45 for girls and T=50 for boys. Corresponding T-scores for externalizing symptoms were T= 49 for girls and T= 47 for boys. There were 81 males and 113 females in the group; the racial composition of this subgroup of happy youth roughly paralleled the demographic distribution of the total sample, as 117 adolescents in the subsample (60%) were Caucasian, 24 (12%) were Hispanic/Latino, 18 (9%) were African-American, and 35 (19%) were of other or mixed ethnicities. Approximately 16% of youth in this subgroup reported low socioeconomic status. Roughly one-third of the sample belonged to each of the grades 6-8 represented.

Group II: Vulnerable Youth. Forty-four adolescents (13% of the total sample) comprised this subgroup. Youth in this mental health classification scored in the average range on measures of psychopathology (i.e., internalizing and externalizing symptoms) but also reported low subjective well-being. Their mean life satisfaction score was 3.66, which is below the positive range of agreement on the SLSS. The positive affect mean
was 2.93 (corresponding to ‘moderately’ experiencing positive emotions on the PANAS-C) and the negative affect mean was 1.88 (corresponding to experiencing negative affect ‘a little’). Participants in this group reported a mean of 10.43 (T = 50 for girls and T= 55 for boys) for internalizing problems and teachers reported a mean of 1.09 (T= 51 for girls and T= 49 for boys) for externalizing problems. The group consisted of 16 males and 28 females. Caucasian students comprised the majority (57%) of this group of vulnerable youth, and Hispanic/Latino students represented 20% of participants. African-American and multi-racial students each comprised 11% of this subgroup; no other ethnicities were reported. Approximately 34% of students in this subgroup reported low socioeconomic status. Eighth-grade students comprised 27% of respondents in this group, while sixth and seventh grade students each comprised approximately 36%.

*Group III: Disturbed but Content Youth.* This subgroup consisted of 44 adolescents (13% of the total sample) whose scores were in the at-risk or clinical range for psychopathology symptoms, *but* who also reported average to high subjective well-being. The mean life satisfaction, positive affect, and negative affects scores for this subgroup were 4.86 (corresponding to endorsements of ‘agree’ to positive judgments of one’s life), 3.89 (experiencing positive emotions ‘quite a bit’), and 1.72 (experiencing negative emotions ‘a little’), respectively. The mean for externalizing symptoms was 6.32 (T = 60 for girls and T= 57 for boys), while the internalizing symptoms mean was 15.14 (T = 56 for girls and T= 61 for boys). The group consisted of 20 males and 24 females. Regarding ethnicity, 20 adolescents (45%) were Caucasian, 11 (25%) were African-American, 7 (16%) were multi-racial, and 6 (14%) were of other ethnic backgrounds. Approximately 32% of this subgroup reported low socioeconomic status.
Seventh-grade students comprised 46% of respondents in this group, while sixth and eighth grade students each comprised 27%.

*Group IV: Troubled Youth.* This subgroup consisted of 57 adolescents (17% of the total sample). Participants in this subgroup scored in the at-risk or clinical range on symptoms of psychopathology and also reported low subjective well-being. Their mean life satisfaction score was 3.06 (in the negative range of life satisfaction as this corresponds to endorsements of ‘slightly disagree’ to positive judgments of one’s life). Positive and negative affect means were 3.15 (experiencing a moderate degree of positive affect) and 2.82 (experiencing a moderate degree of negative affect), respectively.

Participants in this group reported a mean of 22.61 for internalizing problems (T = 63 for girls and T= 68 for boys), and teachers reported a mean of 3.98 for externalizing problems (T = 58 for girls and T= 55 for boys). There were 22 males and 35 females in the group. The racial composition was as follows: 26 participants (46%) were Caucasian, 13 (23%) were African-American, 6 (10%) were Hispanic/Latino, 4 (7%) were multi-racial, and 8 (14%) were of other ethnicities. This subgroup of troubled youth had the highest proportion of participants reporting low socioeconomic status (39%). Eighth grade students represented 40% of respondents in this group, while sixth and seventh grade students comprised 35% and 25%, respectively.

*Descriptive Analyses*

Means and standard deviations for all SWB and PTH variables for the total group and four subsamples of participants are displayed in Table 3. To assess univariate normality of outcome variables, box-and-whisker plots were examined, and skewness and kurtosis of each of the measures including the five physical health variables were
calculated. Values for one of the predictor variables and two of the dependent variables were outside the normal range of -2.00 to 2.00, including teacher-reported externalizing problems (skewness = 2.93, kurtosis = 8.97), physical functioning (skewness = -4.13, kurtosis = 20.04), and social/academic role limitations due to physical health problems (skewness = -4.26, kurtosis = 19.65).

Additional Treatment of the Data

Based on the high skewness and kurtosis values obtained, the dataset was then examined for univariate outliers on any of the five physical health variables. Eleven univariate outliers were removed (i.e., scores more than four standard deviations from the sample mean on any of the five variables), with a sample of 328 participants retained. Following removal of univariate outliers, skewness and kurtosis values for both the physical functioning variable (skewness = -2.44, kurtosis = 7.55) and the social/academic role limitations variable (skewness = -3.59, kurtosis = 13.66) were still outside the acceptable range, indicating non-normal distribution. These two variables were then transformed and the normality of score distributions for each variable was examined.

Following procedure appropriate for transforming variables with negatively skewed distributions, the physical functioning variable was transformed by squaring the variable. Skewness (-2.11) and kurtosis (5.24) slightly improved following this transformation, but still indicated a non-normality. Correlations between physical functioning and other physical health variables increased following transformation, and ranged from $r = .17$ (bodily pain) to $r = .49$ (social/academic role limitations). The social/academic role limitations variable was also transformed by squaring the variable. Following transformation, skewness (-3.31) and kurtosis (10.94) were slightly closer to
the acceptable range, but still indicated a non-normal distribution of scores for this variable. Correlations between social/role limitations and other physical health variables increased following transformation, and ranged from $r = .13$ (bodily pain) to $r = .49$ (physical functioning). Both the original and transformed variables were employed in examinations of group differences, and a similar pattern of results was found using both forms of the aforementioned variables. Thus, for ease of interpretation of results, the original variables were retained for all subsequent analyses described below.

**Group Differences**

To test for between-group differences on the physical health dimensions among participants in the four mental health sub-groups (measured by SWB and PTH ratings), a between-groups multivariate analysis of variance (MANOVA) was conducted. Following a significant MANOVA test, follow-up univariate analyses of variance (ANOVAs) were then conducted to compare the means of the four sub-groups on each physical health outcome variable and determine if the group mean scores differed by a statistically significant amount. Scheffe tests were used to determine the nature of the significant differences on each outcome variable. The SAS System (version 9.1) GLM Method I (Type III), which adjusts for unequal sample sizes within cells, was used to calculate all MANOVA and ANOVA tests employed.

Prior to conducting the MANOVA, Box’s M test was calculated to determine whether the assumption of homogeneity of covariance matrices was met. Results indicated this assumption was violated, $\chi^2(45) = 194.56, p < .001$. In order to increase robustness to violation of this assumption and control Type I error rate, an alpha level of .01 was used to determine significance of the MANOVA. Dependent variables included
in the MANOVA to test the main effect of mental health group on physical health outcomes included physical functioning, general health perceptions, bodily pain/discomfort, academic/social role limitations due to physical health, and family activity limitations due to physical health. With use of Wilks’ criterion, the combined dependent variables were significantly affected by mental health group membership, $\Lambda = .631$, $F(15, 884) = 10.69, p < .01$. The degree of association was quantified by calculating $\eta^2$. The obtained value of .369 indicates about 37% of the variance in participants’ physical health scores was accounted for by mental health classification.

To investigate the impact of group on the dependent variables in light of the significant multivariate effect, individual ANOVAs (univariate $F$) were examined with an alpha set at .01 to control for multiple tests. Four of the five individual dependent variables in the MANOVA reached statistical significance, indicating that participants’ self-reported physical health on the majority of dimensions differed among various mental health groups.

To delineate the nature of the group differences on each of the dependent variables, follow-up analyses were conducted using Scheffe’s test with an alpha set at .01 to control for multiple comparisons. Results are included in Table 4, along with means and standard deviations for each mental health group. Two sets of between-group comparisons were of particular importance in the current study in order to determine whether SWB scores yielded significantly different physical health outcomes beyond that of simply assessing PTH. Specifically, differences between groups I (Happy youth) and II (Vulnerable youth) would demonstrate that PTH is not a sufficient measure of mental health, as knowledge of SWB is necessary to understand group differences. In addition,
differences between group III (*Disturbed but Content youth*) and group IV (*Troubled youth*) on any of the physical health outcome variables would also demonstrate the need for assessment of SWB and not just PTH. In the case of significant differences between groups I and II and between groups III and IV on any physical health outcome, Cohen’s $d$ was calculated to provide an estimate of effect size. Guidelines in Cohen (1988) were used to interpret the magnitude of the effect size; .20 corresponds to a small effect, .50 to a medium effect, and .80 to a large effect.

*Physical functioning.* Significant differences in physical functioning were found among the mental health groups, $F(3,324) = 10.84, p < .01$. Specifically, the Scheffe post-hoc test revealed that Happy students reported a significantly higher mean ($M = 3.90, SD = .18$) than both Vulnerable students ($M = 3.76, SD = .32$) ($d = .54$) and Troubled students ($M = 3.72, SD = .30$). The means for physical functioning reported by Disturbed but Content students ($M = 3.85, SD = .22$) and Troubled students did not differ significantly from each other, nor from the mean reported by Vulnerable students.

*General health perceptions.* Significant differences in general health perceptions were also found among the mental health groups, $F(3,324) = 30.02, p < .01$. The means across all groups differed significantly, with the exception of Vulnerable and Disturbed but Content youth, and Happy and Disturbed but Content youth, who reported similar means. The mean of general health perceptions reported by Happy students ($M = 4.11, SD = .52$) was significantly higher than the group mean for Vulnerable students ($M = 3.72, SD = .56$) ($d = .72$). In addition, Disturbed but Content youth reported a significantly higher mean ($M = 3.82, SD = .63$) than Troubled youth ($M = 3.34, SD = .60$) ($d = .78$).
**Bodily pain.** The ANOVA for bodily pain also revealed significant differences between the mental health groups, $F(3, 324) = 17.90, p < .01$. Notably, this physical health variable is reverse-scored so that higher means indicate lower levels of bodily pain (thus, a better perception of physical health in this area). Specifically, Troubled students reported significantly more bodily pain ($M = 4.16, SD = .96$) than all other groups, including Disturbed but Content youth ($M = 4.93, SD = 1.09$) ($d = .75$). The mean reports of bodily pain for Happy youth ($M = 5.14, SD = .78$) and Vulnerable youth ($M = 4.96, SD = .87$) were statistically similar.

**Academic/social role limitations due to physical health problems.** A univariate test revealed no significant differences in academic and social role limitations due to physical health problems, $F(3, 324) = 3.62, p > .01$. This variable is also reverse-scored, so that higher scores reflect a lower degree of role limitations due to physical health problems. Participants in the mental health groups reported similar degrees of academic and social role limitations due to physical health problems.

**Family activity limitations due to physical health problems.** Significant differences in limitations of family activities as a result of personal physical health problems were found among the four mental health groups, $F(3, 324) = 28.16, p < .01$. This variable is also reverse-scored; higher means indicate fewer limitations of family activities due to personal health problems. Significant mean differences were found between both the Happy ($M = 4.54, SD = .63$) and Vulnerable youth ($M = 4.01, SD = .92$) ($d = .67$) as well as the Disturbed but Content ($M = 4.06, SD = .91$) and Troubled youth ($M = 3.50, SD = .95$) ($d = .60$). Troubled youth also reported a significantly greater degree of family activity limitations than the other three groups.
CHAPTER 5
Discussion

Summary of the Study

The purpose of the current study was to provide the first examination of a dual-factor model of mental health in American youth. By assessing both positive (SWB) and negative (PTH) indicators of mental functioning, the notion that mental wellness and mental illness are opposite ends of the same continuum (as is assumed by a traditional model of mental health) was tested. This study aimed to determine the existence of a dual-factor model of mental health among early adolescents, thus expanding the generalizability of Greenspoon and Saklofske’s (2001) research with Canadian elementary school children. In addition, the current study examined several physical health outcomes in relation to early adolescents’ varying mental health profiles, and provided the first examination of both SWB and PTH as related to physical health among a general population of youth.

This chapter will summarize results of the current study and specifically address notable findings (i.e., identification of four mental health groups and specific between-group differences in physical health), discuss the implications of the results for school psychologists, identify limitations of the study, and provide suggestions for future research.
Examination of Results

*Group assignments.* Results of the current study support a dual-factor model of mental health, identified by assessing both SWB and PTH. Unlike the assumption made using a traditional model of mental health, not all students who displayed low symptoms of PTH were also happy. Instead, 13% of participants reported symptoms of PTH below the ‘at-risk’ level but also reported low SWB. This ‘Vulnerable’ subgroup of adolescents would not be identified as in need of mental health services using only PTH measures, when in fact their diminished happiness may put them at risk for developing future problems. These students perceive the overall quality of their life negatively and experience less than moderate frequencies of positive affect. Previous research has demonstrated that low life satisfaction precedes depression onset in the adult years (Lewinsohn, Redner, & Seeley, 1991). Specifically, a significant negative correlation was found between participant’s life satisfaction ratings and self-reports of depressive symptoms eight months later. Greenspoon and Sakfloske (2001) isolated a subgroup of children similar to the ‘Vulnerable’ group in their research; approximately 7% of youth belonged to this group they termed ‘dissatisfied.’ A similar group has been identified in the adult literature (Keyes, 2002); specifically, approximately 12% of this adult sample did not experience depressive symptoms but reported diminished subjective well-being, and were classified as ‘languishing.’ The proportion of adolescents identified in the current study is more similar to findings with adults (i.e., Keyes, 2002) than young children (i.e., Greenspoon & Saklofske, 2001).

A second group was isolated in the current study that would be missed using only PTH assessment. Not all students who reported high (at-risk or clinically significant)
levels of PTH also reported low SWB. Rather, approximately 13% of the total sample had high PTH while also reporting high SWB. A similar subgroup was also isolated by Greenspoon and Saklofske (2001). Approximately 11% of their total sample was identified as displaying high PTH based on teacher reports of externalizing behavior but also self-reported high levels of SWB and were classified as ‘externally maladjusted’. Interestingly, students belonging to this group of ‘Disturbed but Content’ youth in the current study reported high levels of both internalizing (T= 56-61) and externalizing (T= 57-60), symptoms. The subgroup isolated by Greenspoon and Saklofske (2001) was based only on teacher reports of externalizing behavior. Thus, although it is possible that Greenspoon and Saklofske’s participants also had at-risk or clinically significant levels of internalizing problems, these two groups are not entirely comparable in terms of outcomes and overall functioning.

Overall, over a quarter of the total sample utilized in the current study displayed a profile of mental health that would not be identified using a traditional assessment of mental health (i.e., only PTH measures). While the subgroup of Troubled youth would be targeted for mental health interventions using PTH measures, Vulnerable youth may also be candidates for services as they could be ‘at-risk’ for developing later PTH symptoms (e.g., depression, anxiety) based on their current dissatisfaction with their lives. Lewinsohn and colleague’s (1991) research with adults demonstrates that low life satisfaction occurs prior to depression reported several months later. Thus, Vulnerable youth may benefit from mental health prevention efforts to boost their well-being, which may serve as a potential buffer against symptoms of PTH (Suldo & Huebner, 2004a).
A more perplexing profile is presented by Disturbed but Content youth and several explanations are possible for why these adolescents would report mental wellness but also display symptoms of PTH. First, these students may display externalizing behavior that is noticed by others around them but is not deemed problematic to oneself, and thus does not negatively impact their well-being. This explanation is consistent with findings of Greenspoon and Sakloske (2001). Yet the fact that youth in this subgroup also reported at-risk or clinically significant levels of internalizing disorders is not in line with this explanation. An alternative explanation is that this subgroup of adolescents may view their life positively in some aspects (e.g., supportive family, live in a big house, on the cheerleading squad, etc.) while also feeling depressed or anxious about other aspects of their life (e.g., frequently anxious about school performance, sad that parents got divorced, etc.). Thus, these adolescents may experience varying levels of both happiness and sadness/anxiousness throughout a day or week based on the circumstance or what they cognitively focus on and therefore endorse their life positively while also feeling down or upset. Considering this specific subgroup has not been identified previously identified among youth, this hypothesis has yet to be tested. However, previous research has demonstrated that many life domains impact one’s SWB and PTH, including parent variables (Petito & Cummins, 2000), environmental characteristics (Demo & Acock, 1996), and cognitions (Ash & Huebner, 2001). Thus, it is possible that some of these domains result in high SWB appraisals by Disturbed but Content youth while other variables may result in high PTH.

Disturbed but Content youth may also present some characteristics of resiliency that result in average to high happiness levels in spite of also displaying symptoms of
psychopathology. Resilient children are those who experience ‘good outcomes in spite of serious threats to adaptation or development’ (Masten, 2001). The majority of research in this area focuses on children who, despite growing up in disadvantaged environments and having many risk factors, do not display negative outcomes (including PTH) due to the presence of positive factors that serve as buffers against adversity. According to this conceptualization, the Disturbed but Content youth identified in the current study would not traditionally be classified as ‘resilient children’ because they are already displaying clinical levels of PTH symptoms. However, the Disturbed but Content youth do display average or high levels of SWB, which is one of the positive assets shown to buffer against adverse outcomes that may be associated with PTH, such as interpersonal difficulties or impairments in independent functioning (Masten & Reed, 2002; Tiet, Bird, Davies, et al., 1998). The high levels of SWB the Disturbed but Content youth experience may stem from the presence of other positive intrapersonal strengths (e.g., optimism, hope, perseverance) that prevent PTH symptoms from having an adverse impact on happiness with their lives or interpersonal functioning (Masten & Reed, 2002). Future research is needed to identify which intrapersonal assets Disturbed but Content youth possess; in addition, studies should compare this subgroup with children who have intrapersonal assets but do not display PTH symptoms (i.e., children traditionally deemed resilient).

One last explanation offered to explain the phenomenon of Disturbed but Content youth involves measurement limitations, as the time frame for recall on the self-report measures of life satisfaction and positive/negative affect (the three variables comprising SWB) and internalizing problems utilized in the current study were different.
Specifically, the SLSS and the PANAS-C instruct students to reflect on their thoughts during the ‘past few or several weeks’, while the YSR, used to assess internalizing problems, includes a time frame of ‘within the past 6 months’ in its directions. Thus, students’ reports of high SWB and high PTH may not necessarily be viewed as simultaneous. Although this measurement limitation may be viewed as problematic in the assignment of membership to all groups, the effect was likely strongest in the Disturbed but Content youth as the manner in which PTH was identified (i.e., problems at any point in the past six months) may have overidentified youth as having high PTH.

**Notable findings regarding intercorrelations between variables.** Correlational analyses demonstrated numerous significant relationships between SWB and PTH and the five physical health variables assessed. Of note, students’ self-reported internalizing PTH symptoms were not significantly correlated with teacher-reported externalizing PTH symptoms. This is inconsistent with previous research demonstrating that the mean correlation between self-reported internalizing and self-reported externalizing symptoms was .53 among national samples of youth (Achenbach & Rescorla, 2001). However, a single informant source for both forms of PTH was not utilized in the current study based on previous findings that while youth are the most valid reporters of their internalizing symptoms, teachers and parents provide more accurate reports of externalizing behavior (Kazdin, 1987; Leung et al., 2006). Moreover, correlations between student and teacher reports of the same type of PTH symptoms, as reported by the YSR and TRF, are relatively low across samples of adolescents (average $r = .20$; Achenbach & Rescorla, 2001).
Subjective well-being was more highly related with internalizing behavior than externalizing behavior. This is consistent with previous research demonstrating significant relationships between components of SWB and self-perceptions or cognitions that play a role in one’s depressive or anxious symptoms (i.e., locus of control, attributional style). For instance, Rigby and Huebner (2005) found that an adaptive attributional style (maintaining stable attributions for positive outcomes in life) was positively correlated with life satisfaction. The opposite of this, a maladaptive attributional style may result in feelings of sadness or other internalizing symptoms. In addition, the higher correlation between SWB and internalizing behavior may also reflect the similarity in the source of data. Specifically, both internalizing symptoms and SWB were self-reported by students, while externalizing symptoms were reported by teachers.

Of the two PTH variables, internalizing behavior was more highly correlated with all domains of physical health. Therefore, feeling depressed or anxious may co-occur more with diminished physical health than demonstrating defiant behavior such as Oppositional Defiant Disorder or Conduct Disorder. Previous literature in this area provides inconsistent results in regard to which aspect of PTH is most related to physical health among youth. For instance, Mechanic and Hansell (1987) found that symptoms of depression were moderately negatively correlated with self-rated physical health. However, a longitudinal examination of body mass index (BMI) with both forms of PTH demonstrated no significant correlation between BMI and depression but a significant relationship between adolescent conduct disorder and adult BMI (Pine, Cohen, & Brook, 1997). Additional studies should compare how self-rated physical health relates to self-
Subjective well-being was significantly correlated with all indicators of physical health, and was most highly related to general health perceptions and limitations in family activities due to personal health problems. The one previous examination of SWB as a function of physical health among youth found similar levels of SWB across patients with chronic illness and controls (McKnight, 2004), suggesting SWB does not vary by health status. However, sample sizes were quite small and results cannot be generalized to general populations of adolescents, such as the one utilized in the current study. Zullig and colleagues (2005) investigated the relationship between life satisfaction (one component of SWB) and health-related quality of life in a statewide sample of adolescents and found that self-rated health was significantly related to life satisfaction. In addition, fewer activity limitations due to physical health was also associated with higher life satisfaction. The significant relationships found between SWB and specific physical health variables (i.e., general health perceptions and family activity limitations) in the current study are consistent with these previous findings.

**Notable findings regarding between-group differences in physical health.** As noted in Chapter 4, two sets of between-group comparisons were of particular importance in the current study. This study sought to highlight whether the two additional groups isolated using SWB scores (i.e., Vulnerable and Disturbed but Content youth) yielded significantly different physical health outcomes than the two groups that would be isolated with a traditional model of mental health assessment using only PTH scores. Thus, differences between Happy youth and Vulnerable youth and differences between
Disturbed but Content youth and Troubled youth would demonstrate that assessment of PTH alone is not a sufficient measure of mental health; knowledge of SWB is necessary in order to detect differences in adolescent health functioning.

With the exception of bodily pain reports (i.e., frequency and intensity of pain experienced) and academic/social role limitations due to physical health problems, Happy youth reported superior levels of physical health across all domains as compared to Vulnerable youth. Specifically, Happy youth reported superior general health (i.e., global perception of physical health), superior physical functioning (i.e., ability to complete daily physical tasks), and fewer limitations in their family’s activities due to their own behavior or health concerns. The two non-significant mean differences between Happy and Vulnerable youth on physical health outcomes were in regard to reports of bodily pain and the degree to which academic and social roles are limited due to physical illness. Of note, the psychometric properties for one of these variables (academic and social role limitations) were poor (see Chapter 4), which may have contributed to nonsignificant differences among the groups on this outcome. Notably, the trend of these differences followed that of the other three physical health variables; on average, Happy youth reported less bodily pain and fewer role limitations than Vulnerable youth. Taken together, these findings demonstrate that for all participants reporting low PTH (i.e., both Happy and Vulnerable youth), those also reporting high SWB (i.e., Happy youth) experienced significantly better physical health than those reporting low SWB. If a traditional measure of mental health was used, all youth with low PTH would be assumed to be ‘well’, yet the health outcomes for youth reporting low PTH can vary significantly depending on simultaneous ratings of SWB. Specifically, for this sample of adolescents,
having high SWB was necessary to have the best physical health, underscoring the need
to attend to positive indicators of students’ psychological functioning.

Differences on three of the five physical health indicators were also found
between Disturbed but Content youth and Troubled youth. Specifically, while both of
these groups reported high levels of PTH (thus a potentially negative prognosis for
functioning), participants who also reported high SWB (Disturbed but Content)
experienced superior physical health than those with low SWB (Troubled) across three
domains: 1) better perceptions of general health, 2) less bodily pain, and 3) fewer
limitations in family activities due to health or behavior. Thus, for participants reporting
at-risk or clinical levels of PTH, higher SWB was associated with better physical health
outcomes across the majority of domains assessed. These results attest to the important
link between SWB and physical health for this sample of youth. Even while
experiencing some degree of internalizing and/or externalizing symptoms of
psychopathology, it is possible for youth to also perceive their well-being positively and
doing so is associated with better perceived overall health, less bodily pain, and fewer
limits to their daily activities with family. Differences in two physical health variables,
physical functioning and academic/social role limitations due to physical health
problems, were not significant between these two mental health groups. However, the
psychometric properties of these two indicators were poor (see Chapter 4).

On four of the five physical health variables assessed (i.e., all but academic/social
role limitations), Troubled Youth reported the lowest mean levels of perceived health
among the four mental health groups. Thus, those participants who experience PTH in
the ‘at-risk’ or ‘clinical’ range and also have low SWB experience the most diminished
physical health outcomes. Previous research with youth has revealed links between PTH and physical health problems, including total number of health problems (Rohde et al., 1994) and self-reported overall health (Bardone et al., 1998). In line with this research, both mental health groups with high PTH (Disturbed but Content and Troubled youth) reported significantly lower mean levels of physical health across several domains of physical health than participants with both low PTH and low SWB (Happy youth). However, mean levels of physical health for one group with high PTH, Disturbed but Content youth, were not lower than those with low PTH but also low SWB (Vulnerable youth), but rather fairly equal across all physical health domains. Thus, displaying high PTH does not equate to also experiencing the most diminished physical health for these participants. Rather, low SWB alone may be associated with diminished physical health as well, even when PTH is absent. The finding that poor physical health is associated with low SWB is consistent with the research of Zullig and colleagues (2005); among nearly 5,000 adolescents, diminished self-rated health was significantly related to reduced life satisfaction (one of the components of SWB).

The findings in the current study that youth in various mental health groups differed significantly on four of the five physical health outcomes demonstrates an even greater need for the assessment of SWB in conjunction with assessment of PTH. Not only do these four groups exist, but they display different physical health outcomes based on their mental health status yielded from a dual-factor model. Moreover, comparisons between the two sets of groups with similar PTH (high or low) demonstrates that significantly different outcomes in physical health exist as a function of SWB.
Specifically, high SWB is associated with better perceived physical health than low SWB for both sets of PTH groups (high and low).

Implications of Results for School Psychologists

This study demonstrated the utility of a dual-factor model of mental health among early adolescents, and provided an extension of previous research with elementary-age youth. Thus, for school psychologists and other mental health professionals working with youth in diverse age groups, the incorporation of SWB into traditional mental health assessment appears crucial for identifying a comprehensive list of mental health profiles. School psychologists frequently incorporate behavioral measures of PTH into their evaluations of children referred for mental health services and use this information to suggest appropriate academic placements or provide intervention services to treat PTH symptoms. These practices may be effective for improving PTH, but do not address students’ well-being in any way.

In order to detect students that may be at-risk for developing PTH (i.e., Vulnerable students) and to improve the well-being of students already receiving services to treat at-risk or clinical levels of PTH (i.e., Troubled youth), school psychologists must also gain knowledge of positive indicators of children’s mental health. Several assessment measures of SWB components (i.e., life satisfaction, positive and negative affect) have been developed for use with children and adolescents, and demonstrate adequate psychometric properties. In order to assess satisfaction with different areas of life (e.g. school, self, family), school psychologists may administer a more comprehensive measure such as the MSLSS (Huebner, 1994), described in Chapter 2. This 40-item measure may be appropriate for use during a comprehensive psychological
evaluation with individual students. An assessment tool more appropriate for large scale screening purposes among a student population is the SLSS (Huebner, 1991), the 7-item measure used in the current study. The PANAS-C (Laurent et al., 1999), the 27-item measure of positive and negative affect used in the current study, may also be used to provide a more comprehensive profile of happiness when working with individual youth.

Once school psychologists are aware of the current levels of well-being students are experiencing, interventions can be designed and implemented to increase the SWB of students reporting low levels. For instance, Huebner, Gilman, and Suldo (2007) provide a case study example to demonstrate how knowledge of SWB components can directly link to intervention development. Specifically, examination of a student’s MSLSS profile indicated average to high satisfaction in some domains of life, such as with friends and family, but low satisfaction with two other domains, including school and living environment. For a student with this particular profile, interventions aimed at increasing his or her academic success through increased home-school collaboration, while at the same time capitalizing on existing strengths such as interpersonal relationships to establish positive interactions at school, would probably be most successful in improving well-being and potentially buffering against PTH.

One area of intervention that may be particularly helpful for individuals with low SWB and high PTH (i.e., Trouble Youth) as well as youth with low SWB and low PTH (i.e., Vulnerable Youth) is Quality of Life Therapy (QOLT; Frisch, 2006). This type of therapy can be used to increase happiness through strategies based on researched correlates of happiness, such as taking time to care for oneself, spending time alone in positive activities to relax and rejuvenate, and pursuing life goals or interests. When used
with clinical populations, or those already presenting a form of PTH, QOLT is woven into various forms of cognitive therapy to treat internalizing symptoms, so that individuals learn strategies to increase their happiness while simultaneously learning to restructure thoughts that lead to PTH (i.e., depression, anxiety). When used with individuals who are experiencing low SWB without displaying PTH, QOLT can be used to increase self-care, promote frequent rejuvenation, and prevent potential burnout from daily tasks.

Interventions shown to increase happiness in adult samples include strategies such as devising a step-wise plan to attain one’s goals (Sheldon, Kasser, Smith & Share, 2002), performing ‘acts of kindness’ (i.e., behaviors that benefit others or makes others happy) throughout a week (Lyubomirsky, Tkach, & Sheldon, 2004), and practicing grateful thinking, in which one contemplates things to be grateful for one to three times per week (Emmons & McCullough, 2003). Importantly, although QOL therapy and the other interventions noted may result in SWB gains with adult populations, their efficacy among youth has not yet been investigated. Therefore, school psychologists and other mental health professionals must apply these techniques with caution and, as with any intervention, carefully monitor the effectiveness of these strategies in improving SWB among youth. The brevity of a measure such as the SLSS makes it useful for progress monitoring and outcomes assessment of these interventions.

School psychologists and other mental health professionals must also not overlook the subgroup of students reporting both high PTH and high SWB (Disturbed but Content youth). As mentioned earlier in this chapter, these individuals may present this mental health profile for a number of reasons. School psychologists must first explore an
individual student’s reason for producing this profile, and then provide appropriate interventions. In the case of youth who display high levels of externalizing PTH that disturbs others but does not impact their own well-being, interventions that simply aim to decrease the PTH behaviors may be most appropriate. However, in the case of youth who report at-risk or clinically significant levels of internalizing symptoms while simultaneously reporting high SWB, interventions may be quite different. This subgroup of adolescents may view their life positively in some aspects while also feeling depressed or anxious about other aspects of their life. Possible interventions for these youth would be to target the domains of functioning they view negatively and provide them with ways to improve or cope in these areas, while also building on existing feelings of high SWB and teaching them how to utilize these feelings as a buffer against internalizing symptoms. Cognitive refocusing to situations that elicit feelings of happiness may improve overall functioning for these youth. In sum, school psychologists can provide interventions that specifically target the mental health needs of youth by assessing both SWB and PTH and providing services to improve either or both constructs as needed.

Limitations of the Current Study

Although several precautions were taken to address potential threats to validity during data collection, not all threats to validity can be controlled. The researcher addresses these threats to validity as potential limitations of the current study. Two threats to the validity of quantitative research include population validity and ecological validity.

Population validity. Population validity is the ability to generalize results from the sample under study to a larger population (Johnson & Christensen, 2004). Unique
characteristics of the sample may limit the extent to which results can be generalized to the larger population. A convenience sampling method was employed in the current study and as a result, students who agreed to participate could have differed from students who declined to participate. To ensure that all sub-populations of the school were represented, the researcher compared the descriptive statistics of the study participants to overall demographics of the school. No patterns of declined participation were noted among each sub-population, as the sample demographics aligned with the school demographics.

Ecological validity. Ecological validity is the ability of the researcher to generalize the results of a study across settings (Johnson & Christensen, 2004). Violations to ecological validity include the tendency of the researcher to draw erroneous conclusions to populations with different settings than the sample under study. The middle school where participants in the current study were drawn is located within a middle-to-high SES community. Therefore, is it not possible to generalize the findings of the current study to lower SES areas. In addition, previous research has shown that children in residential areas or suburbs are more likely to report high life satisfaction (Homel & Burns, 1989). The school under study was located in a suburban community; therefore, generalizability cannot be extended to youth living in rural or inner-city areas.

Suggestions for Future Research

The current study was only the second to examine a dual-factor model of mental health in youth, and the first to examine this model among early adolescents. Although the existence of a dual-factor model among groups of children and adolescents yields a great deal of potential for prevention and intervention efforts among youth, this model of mental health has yet to be tested among samples of older adolescents and/or adults.
Keyes (2002) isolated groups of adults without depressive symptoms who had varying levels of subjective well-being (i.e., languishing, flourishing, moderately mentally healthy); however, the distinction of the four groups isolated in the current study with a dual-factor model has yet to be examined in older age groups. In particular, no group with high SWB and high PTH has been isolated in the adult literature. Future research should explore whether these four groups can be isolated among older adolescents (i.e., high school age) and adults.

The extent to which these mental health classifications are stable over time has yet to be determined. Longitudinal research should examine the likelihood that each of the four mental health profiles remains consistent for a sample of youth across time. An additional focus of longitudinal research should consider what factors predict changes in the mental health of youth. Longitudinal research would also support the directionality of the relationship between mental health and physical health, and aid in determining which may decline first.

This study also highlighted several significant differences in physical health outcomes for these four mental health groups. The current study utilized a self-report measure of physical health in which students rated their perceptions of various domains such as the degree of bodily pain they experienced over the past few months, and how limited their academic and social activities have been due to physical health problems. Future investigations should examine how objective indicators of physical health, such as body mass index or days absent due to illness, also relate to both PTH and SWB. A relationship between BMI and externalizing PTH has been previously established (Pine et al., 1997); however, whether BMI relates to other forms of PTH and/or SWB has yet to
be determined. In addition, the physical health self-report measure utilized in the current study (CHQ) demonstrated poor psychometric properties for two of the five variables assessed (i.e., physical functioning and academic/social role limitations due to physical health problems), limiting confidence in the findings for these variables. Future research utilizing a different measure of self-reported physical health may yield more reliable findings in similar health domains.

Findings that groups with different levels of SWB also experienced different physical health demonstrates the importance of examining how youth with mental health profiles yielded from a dual-factor model differ across many domains of functioning. Intrapersonal and relational variables (personality, self-concept, and interpersonal relations) were previously examined among the four groups identified by Greenspoon and Saklofske (2001). Differences in all variables were found across groups. However, research is needed to determine how mental health groups may differ in other outcomes areas such as educational functioning (i.e., objective achievement indicators) and delinquent behavior at school (i.e., tardiness and discipline referrals). This research would be of considerable importance to educational personnel, particularly school psychologists. If differences in academic achievement exist between these groups, education personnel may acknowledge the need for SWB and PTH screening measures in order to isolate groups of students in need of mental health interventions. Providing needed assessment and intervention strategies may in turn booster the educational achievement of at-risk groups of students (i.e., Vulnerable students).

Other important outcomes to be examined in relation to a dual-factor model of mental health include social functioning and cognitive processes. Research is needed to
determine whether mental health groups have different perceptions of the social support they receive from friends and family. Bolstering social support may be an area of prevention/intervention to promote the subjective well-being of Vulnerable and Troubled youth, if in fact these groups are found to perceive less social support than Happy youth. Other outcome areas to examine include the degree of motivation and self-regulation students in these four groups have for completing schoolwork and other tasks, and the types of activities they are involved with outside of school. Identification of differences in functioning may provide further support for the need for assessment of both mental health constructs, as well as highlight important variables to target for prevention and intervention. For instance, if Happy youth are those that participate in extra-curricular activities, then Vulnerable youth may also benefit from participation in these activities.

Final Thoughts

This study has provided the first known replication of a dual-factor model of mental health in youth. Findings support a four-group classification of mental health; thus, mental health in youth is better understood using both measures of wellness and psychopathology. In addition, results of this study suggest a link between mental and physical wellness. Specifically, for students with both low and high levels of PTH, high SWB consistently co-occurs with better perceived physical health. Mental health professionals may best serve children and adolescents by incorporating a dual-factor model of mental health into all assessments. Mental health interventions for students should not only focus on decreasing PTH but also increasing SWB in order to promote the best outcomes possible, including physical health and functioning.
References


Unpublished doctoral dissertation, University of South Carolina, Columbia.


### Table 1

*Demographic Characteristics of Participants by Mental Health Group (N = 339)*

<table>
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<tr>
<th></th>
<th>Happy</th>
<th>Vulnerable</th>
<th>Disturbed but Content</th>
<th>Troubled</th>
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<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
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<tr>
<td>Gender</td>
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</tr>
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Table 2

*Intercorrelations between PTH, SWB, and Physical Health variables (N = 339)*

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<thead>
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<th>Variable</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
<th>10.</th>
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<td></td>
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<tr>
<td>2. Positive Affect</td>
<td>.51*</td>
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<td></td>
<td></td>
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<td>3. Negative Affect</td>
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<td>-.20*</td>
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<td>-.73*</td>
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<td>5. Internalizing Behavior</td>
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<td>-.28*</td>
<td>.75*</td>
<td>-.66*</td>
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<td>.53*</td>
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<td>-.11*</td>
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<td>.02</td>
<td>-.12*</td>
<td>.11*</td>
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<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Bodily Pain</td>
<td>.37*</td>
<td>.26*</td>
<td>-.36*</td>
<td>.42*</td>
<td>-.40*</td>
<td>-.06</td>
<td>.33*</td>
<td>.03</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>10. Academic/Social Role Limitations</td>
<td>.24*</td>
<td>.12</td>
<td>-.18*</td>
<td>.23*</td>
<td>-.23*</td>
<td>.02</td>
<td>.23*</td>
<td>.44*</td>
<td>.16*</td>
<td>1</td>
</tr>
<tr>
<td>11. Family Activity Limitations</td>
<td>.42*</td>
<td>.32*</td>
<td>-.43*</td>
<td>.51*</td>
<td>-.41*</td>
<td>-.21*</td>
<td>.40*</td>
<td>.19*</td>
<td>.30*</td>
<td>.32*</td>
</tr>
</tbody>
</table>

116
### Table 3

**Means, Standard Deviations, and Ranges for PTH and SWB Variables by Group**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Happy (n = 194)</th>
<th>Vulnerable (n = 44)</th>
<th>Disturbed but Content (n = 44)</th>
<th>Troubled (n = 57)</th>
<th>Total (N = 339)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global Life Satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>5.03</td>
<td>3.66</td>
<td>4.86</td>
<td>3.06</td>
<td>4.49</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>.69</td>
<td>.81</td>
<td>.55</td>
<td>1.02</td>
<td>1.09</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>2.86 – 6.00</td>
<td>1.29 – 4.86</td>
<td>3.14 – 5.86</td>
<td>1.00 – 5.00</td>
<td>1.00 – 6.00</td>
</tr>
<tr>
<td><strong>Positive Affect</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>3.98</td>
<td>2.93</td>
<td>3.89</td>
<td>3.15</td>
<td>3.69</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>.55</td>
<td>.68</td>
<td>.48</td>
<td>.83</td>
<td>.75</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>2.33 – 5.00</td>
<td>1.42 – 4.58</td>
<td>3.08 – 5.00</td>
<td>1.00 – 4.75</td>
<td>1.00 – 5.00</td>
</tr>
<tr>
<td><strong>Negative Affect</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>1.36</td>
<td>1.88</td>
<td>1.72</td>
<td>2.82</td>
<td>1.72</td>
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<tr>
<td><strong>SD</strong></td>
<td>.33</td>
<td>.68</td>
<td>.46</td>
<td>.86</td>
<td>.74</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>1.00 – 2.67</td>
<td>1.00 – 4.00</td>
<td>1.00 – 2.53</td>
<td>1.07 – 4.47</td>
<td>1.00 – 4.47</td>
</tr>
<tr>
<td><strong>Subjective Well-being (z-scores)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>1.36</td>
<td>-2.02</td>
<td>0.59</td>
<td>-3.53</td>
<td>0</td>
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<tr>
<td><strong>SD</strong></td>
<td>1.18</td>
<td>1.05</td>
<td>0.94</td>
<td>1.96</td>
<td>2.33</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>-0.78 – 3.99</td>
<td>-5.31 - -0.81</td>
<td>-0.77 – 3.40</td>
<td>-8.37 - -0.79</td>
<td>-8.37 – 3.99</td>
</tr>
<tr>
<td><strong>Externalizing Behavior</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>.82</td>
<td>1.09</td>
<td>6.32</td>
<td>3.98</td>
<td>2.10</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>1.84</td>
<td>1.57</td>
<td>7.60</td>
<td>5.00</td>
<td>4.21</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0.00 – 9.00</td>
<td>0.00 – 6.00</td>
<td>0.00 – 23.00</td>
<td>0.00 – 21.00</td>
<td>0.00 – 23.00</td>
</tr>
<tr>
<td><strong>Internalizing Behavior</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>7.07</td>
<td>10.43</td>
<td>15.14</td>
<td>22.61</td>
<td>11.17</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>4.29</td>
<td>4.32</td>
<td>7.46</td>
<td>7.53</td>
<td>7.95</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0.00 – 18.00</td>
<td>2.00 – 18.00</td>
<td>0.00 – 30.00</td>
<td>5.00 – 37.00</td>
<td>0.00 – 37.00</td>
</tr>
</tbody>
</table>
Table 4

*Mean Levels of Physical Health by Mental Health Group (N = 328)*

<table>
<thead>
<tr>
<th>Mental Health Group</th>
<th>Disturbed but</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Happy</td>
</tr>
<tr>
<td></td>
<td>(n = 190)</td>
</tr>
<tr>
<td>Physical Health Scale</td>
<td>$M$</td>
</tr>
<tr>
<td>General Health</td>
<td>4.11$_a$</td>
</tr>
<tr>
<td>Perceptions</td>
<td>Bodily Pain</td>
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<tr>
<td></td>
<td>Physical Functioning</td>
</tr>
<tr>
<td></td>
<td>Social/Academic Role</td>
</tr>
<tr>
<td>Limitations</td>
<td>Family Activities Role</td>
</tr>
</tbody>
</table>

*Note.* Scheffe comparisons were employed to analyze group means in cases of significant F-tests.

Significant differences between group means are indicated by different letters. Means having the same subscript are not significantly different.
Appendices
Appendix A

Parent Consent Form

Dear Parent or Caregiver:

This letter provides information about a research study that will be conducted at Liberty Middle School by investigators from the University of South Florida. Our goal in conducting the study is to determine the effect of students’ psychological wellness on their school performance, physical health, and social relationships.

✓ **Who We Are:** The research team consists of Shannon Suldo, Ph.D., a professor in the School Psychology Program at the University of South Florida (USF), and several doctoral students in the USF College of Education. We are planning the study in cooperation with the principal of Liberty Middle School (LMS) to make sure that the study provides information that will be useful to the school.

✓ **Why We are Requesting Your Child’s Participation:** This study is being conducted as part of a project entitled, “Subjective Well-Being of Middle School Students.” Your child is being asked to participate because he or she is a student at Liberty.

✓ **Why Your Child Should Participate:** We need to learn more about what leads to happiness and health during the pre-teen years! The information that we collect from students may help increase our overall awareness of the importance of monitoring students’ happiness during adolescence. In addition, group-level results of the study will be shared with the teachers and administrators at LMS in order to increase their knowledge of the relationship between specific school experiences and psychological wellness in students. Please note neither you nor your child will be paid for your child’s participation in the study. However, all students who participate in the study will be entered into a drawing for one of several gift certificates.

✓ **What Participation Requires:** If your child is given permission to participate in the study, he or she will be asked to complete several paper-and-pencil questionnaires. These surveys will ask about your child’s thoughts, behaviors, and attitudes towards school, teachers, classmates, family, and life in general. The surveys will also ask about your child’s physical health. Completion is expected to take your child between 45 and 60 minutes. We will personally administer the questionnaires at LMS, during regular school hours, to large groups of students who have parent permission to participate. Participation will occur during one class period this school year. If your child is at LMS next year, your child will be asked to complete the same surveys again so that we can examine change over time. In total, participation will take about one hour of your child’s time each year. Another part of participation involves a review of your child’s school records. Under the supervision of school administrators, we will retrieve the following information about your child: grade point average, FCAT scores, attendance, and history of discipline referrals. Finally, one of your child’s teachers will be asked to complete a brief rating scale about your child’s behavior at school.
Please Note: Your decision to allow your child to participate in this research study must be completely voluntary. You are free to allow your child to participate in this research study or to withdraw him or her at any time. Your decision to participate, not to participate, or to withdraw participation at any point during the study will in no way affect your child’s student status, his or her grades, or your relationship with LMS, USF, or any other party.

Confidentiality of Your Child’s Responses: There is minimal risk to your child for participating in this research. We will be present during administration of the questionnaires in order to provide assistance to your child if he or she has any questions or concerns. Additionally, school guidance counselors will be available to students in the unlikely event that your child becomes emotionally distressed while completing the measures. Your child’s privacy and research records will be kept confidential to the extent of the law. Authorized research personnel, employees of the Department of Health and Human Services, the USF Institutional Review Board and its staff, and other individuals acting on behalf of USF may inspect the records from this research project, but your child’s individual responses will not be shared with school system personnel or anyone other than us and our research assistants. Your child’s completed questionnaires will be assigned a code number to protect the confidentiality of his or her responses. Only we will have access to the locked file cabinet stored at USF that will contain: 1) all records linking code numbers to participants’ names, and 2) all information gathered from school records. All records from the study (completed surveys, information from school records) will be destroyed in four years. Please note that although your child’s specific responses on the questionnaires will not be shared with school staff, if your child indicates that he or she intends to harm him or herself, we will contact district mental health counselors to ensure your child’s safety.

What We’ll Do With Your Child’s Responses: We plan to use the information from this study to inform educators and psychologists about the relationship between students’ psychological wellness (particularly their subjective well-being, also referred to as happiness) and their school performance, physical health, and social relationships. The results of this study may be published. However, the data obtained from your child will be combined with data from other people in the publication. The published results will not include your child’s name or any other information that would in any way personally identify your child.

Questions? If you have any questions about this research study, please contact Dr. Suldo at (813) 974-2223. If you have questions about your child’s rights as a person who is taking part in a research study, you may contact a member of the Division of Research Compliance of the USF at (813) 974-9343.

Want Your Child to Participate? To permit your child to participate in this study, please complete the attached consent form and have your child turn it in to his or her homeroom teacher.

Sincerely,

Shannon Suldo, Ph.D.
Assistant Professor of School Psychology
Department of Psychological and Social Foundations
Consent for Child to Take Part in this Research Study
I freely give my permission to let my child take part in this study. I understand that this is research. I have received a copy of this letter and consent form for my records.

Printed name of child                  Grade level of child
__________________________________  __________________________
Signature of parent of child taking part in the study

Statement of Person Obtaining Informed Consent
I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida’s Institutional Review Board and that explains the nature, demands, risks, and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

Signature of person obtaining consent          Printed name of person obtaining consent          Date
__________________________________  __________________________

Appendix B
Student Assent Form

Hello!

Today you will be asked to take part in a research study by filling out several surveys. Our goal in conducting the study is to determine the effect of students’ mental health on their school performance, physical health, and social relationships.

✓ Who We Are: The research team is led by Shannon Suldo, Ph.D., a professor in the School Psychology Program at the University of South Florida (USF). Several doctoral students in the USF College of Education are on the team. We are working with your principal to make sure this study will be helpful to your school.

✓ Why We Are Asking You to Take Part in the Study: This study is part of a project called, “Subjective Well-Being of Middle School Students.” You are being asked to take part because you are a student at Liberty Middle School (LMS).

✓ Why You Should Take Part in the Study: We need to learn more about what leads to happiness and health during the pre-teen years! The information that we collect may help us better understand why we should monitor students’ happiness. In addition, results from the study will be shared with LMS to show them how happiness is related to school grades and behavior, physical health, and social relationships. You will not be paid for taking part in the study.

✓ Filling Out the Surveys: These surveys will ask you about your thoughts, behaviors, and attitudes towards school, family, and life in general. The surveys will also ask about your physical health. It will probably take between 45 and 60 minutes to fill out the surveys. We will also ask you to complete these surveys again one year from now.

✓ What Else Will Happen if You Are in the Study: If you choose to take part in the study, we will look at some of your school records- grades, discipline record, attendance, and FCAT scores. We will gather this information under the guidance of school administrators.

✓ Please Note: Your involvement in this study is voluntary (your choice). By signing this form, you are agreeing to take part in this study. Your decision to take part, not to take part, or to stop taking part in the study at any time will not affect your student status or your grades; you will not be punished in any way. If you choose not to take part, it will not affect your relationship with LMS, USF, or anyone else.

✓ Privacy of Your Responses: Your school guidance counselors are also on hand in case you become upset. Your privacy and research records will be kept confidential (private, secret) to the extent of the law. People approved to do research at USF, people who work for the Department of Health and Human Services, the USF Institutional Review Board, and its staff, and other individuals acting on behalf of USF may look at the records from this research project. However, your individual responses will not be shared with people in the school system or anyone other than us and our research assistants. Your completed surveys will be given a code number to...
protect the privacy of your responses. Only we will have the ability to open the locked file cabinet stored at USF that will contain: 1) all records linking code numbers to names, and 2) all information gathered from school records. All records from the study (completed surveys, information from school records) will be destroyed in four years. Again, your specific responses will not be shared with school staff. However, if you respond on the surveys that you plan to harm yourself, we will let district counselors know in order to make sure you are safe.

✓ What We’ll Do With Your Responses: We plan to use the information from this study to let others know about how students’ happiness is related to school grades, physical health, and social relationships. The results of this study may be published. However, your responses will be combined with other students’ responses in the publication. The published results will not include your name or any other information that would in any way identify you.

✓ Questions? If you have any questions about this research study, please raise your hand now or at any point during the study. Also, you may contact us later at (813) 974-2223 (Dr. Suldo). If you have questions about your rights as a person who is taking part in a research study, contact a member of the Division of Research Compliance of the USF at (813) 974-9343. Also call the Florida Department of Health, Review Council for Human Subjects at 1-850-245-4585 or toll free at 1-866-433-2775.

Thank you for taking the time to take part in this study.

Sincerely,

Shannon Suldo, Ph.D.
Assistant Professor of School Psychology
Department of Psychological and Social Foundations

------------------------------------------------------------------------------------------------------------

**Assent to Take Part in this Research Study**

I give my permission to take part in this study. I understand that this is research. I have received a copy of this letter and assent form.

<table>
<thead>
<tr>
<th>Signature of child taking part in the study</th>
<th>Printed name of child</th>
<th>Date</th>
</tr>
</thead>
</table>
**Statement of Person Obtaining Informed Consent**

I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida’s Institutional Review Board and that explains the nature, demands, risks, and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

<table>
<thead>
<tr>
<th>Signature of person obtaining consent</th>
<th>Printed name of person obtaining consent</th>
<th>Date</th>
</tr>
</thead>
</table>
Appendix C
Teacher Consent Form

Dear Teacher:

Thank you for allowing us to meet with you to discuss the research study we plan to conduct at Liberty Middle School. Our goal in conducting the study is to determine the effect of students’ psychological wellness on their school performance, physical health, and social relationships.

- **Who We Are**: The research team consists of Shannon Suldo, Ph.D., a professor in the School Psychology Program at the University of South Florida (USF), and several doctoral students in the USF College of Education. We are planning the study in cooperation with the principal of Liberty Middle School (LMS) to make sure that the study provides information that will be useful to the school.

- **Why We are Requesting Your Participation**: This study is being conducted as part of a project entitled, “Subjective Well-Being of Middle School Students.” You are being asked to participate because you are a teacher of at least one student who is a participant in the project.

- **Why You Should Participate**: We need to learn more about what leads to happiness and health during the pre-teen years! The information that we collect from teachers may help increase our overall awareness of the importance of monitoring students’ happiness. In addition, information from the study will be shared with you and other staff at Liberty Middle School in order to increase your knowledge of the relationship between students’ mental health and their educational performance, physical health, and social relationships. Please note that you will be compensated $5 for each rating scale you complete.

- **What Participation Requires**: You will be asked to complete a questionnaire(s) about the behavior of each of your students who is a participant in the study. Completion of the questionnaire(s) is expected to take between 10 and 15 minutes.

- **Please Note**: Your decision to participate in this research study must be completely voluntary. You are free to participate in this research study or to withdraw from participation at any time. If you choose not to participate, or if you withdraw at any point during the study, this will in no way affect your relationship with Liberty Middle School, USF, or any other party.

- **Confidentiality of Your Responses**: There is minimal risk for participating in this research. Your privacy and research records will be kept confidential to the extent of the law. Authorized research personnel, employees of the Department of Health and Human Services, the USF Institutional Review Board and its staff, and other individuals acting on behalf of USF may inspect the records from this research project, but your individual responses will not be shared with school system personnel or anyone other than the USF research team. Your completed
questionnaire(s) will be assigned a code number to protect the confidentiality of your responses. Only the USF research team will have access to the locked file cabinet stored at USF that will contain all records linking code numbers to participants’ names.

✓ **What We’ll Do With Your Responses**: We plan to use the information from this study to inform educators and psychologists about the relationship between students’ psychological wellness (particularly their subjective well-being, also referred to as happiness) and their school performance, physical health, and social relationships. The results of this study may be published. However, the data obtained from you will be combined with data from other people in the publication. The published results will not include your name or any other information that would in any way personally identify you.

✓ **Questions?** If you have any questions about this research study, please raise your hand now or at any point during the study. Also, you may contact us later at (813) 974-2223 (Dr. Suldo). If you have questions about your rights as a person who is taking part in a research study, you may contact a member of the Division of Research Compliance of the USF at (813) 974-9343, or the Florida Department of Health, Review Council for Human Subjects at 1-850-245-4585 or toll free at 1-866-433-2775.

✓ **Want to Participate?** To participate in this study, please sign the attached consent form.

Sincerely,

Shannon Suldo, Ph.D.
Assistant Professor of School Psychology
Department of Psychological and Social Foundations

---

**Consent to Take Part in this Research Study**
I freely give my permission to take part in this study. I understand that this is research. I have received a copy of this letter and consent form for my records.

________________________   ________________________   ___________
Signature of teacher   Printed name of teacher   Date
Statement of Person Obtaining Informed Consent

I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida’s Institutional Review Board and that explains the nature, demands, risks, and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

________________________ ________________________ ___________
Signature of person Printed name of person  Date
obtaining consent obtaining consent
Appendix D
Demographics Form

ID # __________ Spring 2006

Birthdate _______ _______ _______
(month) (day) (year)

PLEASE READ EACH QUESTION AND CIRCLE ONE ANSWER PER QUESTION:

1. I am in grade: 6 7 8
2. My gender is: Male Female
3. Do you receive free or reduced lunch? Yes No
4. My race/ethnic identity is:
   a. American Indian or Alaska Native
e. Native Hawaiian or Other Pacific Islander
   b. Asian
f. White
   c. Black or African American
g. Multi-racial (please specify):
   d. Hispanic or Latino
h. Other (please specify):

5. My biological parents are:
   a. Married
d. Never married
   b. Divorced
e. Never married but living together
   c. Separated
f. Widowed

6. On average, how much time per week do you spend doing your homework:
   a. Less than 1 hour
e. From 10 hours to less than 15 hours
   b. From 1 hour to less than 3 hours
f. From 15 hours to less than 20 hours
   c. From 3 hours to less than 5 hours
g. From 20 hours to less than 25 hours
   d. From 5 hours to less than 10 hours
h. 25 hours or more

Sample Questions:

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not Sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I go to the beach</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not Sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Going to the beach is fun</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix E
Students’ Life Satisfaction Scale (Huebner, 1991)

We would like to know what thoughts about life you’ve 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 life. In answering each statement, circle a number from (1) to (6) where (1) indicates you strongly disagree with the statement and (6) indicates you strongly agree with the statement.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Mostly Disagree</th>
<th>Mildly Disagree</th>
<th>Mostly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My life is going well</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. My life is just right</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I would like to change many things in my life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. I wish I had a different kind of life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I have a good life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. I have what I want in life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. My life is better than most kids'</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
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Appendix F
Positive and Negative Affect Scale for Children (PANAS-C; Laurent et al., 1999)

This scale consists of a number of words that describe different feelings and emotions. Read each item and then circle the appropriate answer next to that word. Indicate to what extent you have felt this way during the past few weeks.

<table>
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<tr>
<th>Feeling or Emotion</th>
<th>Very slightly or not at all</th>
<th>A little</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
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