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An Application of the Dual Factor Model of Mental Health in Elementary School Students: Implications for Social Functioning and Psychopathology

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Implications for Social Functioning and Psychopathology

by

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DEDICATION

This thesis is dedicated to the following individuals who have had a tremendous impact on my life, but particularly during my graduate school pursuits in recent years

My Dad. For your love and grit in both your profession and in the face of cancer, which I find inspirational.

My Mom. For your care, withitness, and personal touch, which I seek to emulate in my own life each day.

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Massachusetts-Amherst will be so lucky to have her as a faculty member. In closing, I look forward to engaging in high quality research in terms of mental health and well-being, while continuing to interact with you all. Again, I thank you all!

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ABSTRACT

In the study of positive psychology and mental health there has been greater emphasis placed on the presence of indicators of well-being, as opposed to previous models solely based on the presence or absence of psychopathological symptoms. This has yielded a model titled the Dual Factor Model of Mental Health (DFM; Suldo, 2016). Psychopathological symptoms have been conceptualized as a categorical variable encompassing an elevated level of symptoms of either externalizing or internalizing disorders. Complete Mental Health (CMH) is generally conceptualized as having low psychopathology (PTH) and high subjective well-being (SWB). Previous research has indicated more positive outcomes, such as academic achievement and supportive social relationships, are associated with CMH. The DFM has been examined in adolescents and young adults, however, only one study has identified the model in elementary school students (Greenspoon & Saklofske, 2008). The current study completed secondary analysis of an archival data set (Hearon, 2017) to examine the distribution of the DFM in a sample of 178 elementary school students (grades 4^{th} and 5^{th}) and the impact that mental health group status had on social functioning levels with teachers and classmates. Results from this study indicated the DFM was present in a sample of elementary school students, with the majority of participants being classified in the CMH group, consistent with previous literature. Additionally, regarding students' perceived social support of classmates and teachers, those groups with elevated levels of SWB reported greater mean values than those groups that had decreased levels of SWB. Finally, between group differences in terms of psychopathology were

present, whereas within group differences in terms of externalizing and internalizing behavior were not present in any group. Implications for school psychologists, such as the importance of assessing SWB in tandem with psychopathology are presented. Finally, limitations of this study (i.e., nested data) and avenues for future research (i.e., mental health status predicting peer networks, continued evaluation of DFM psychopathology make-up) are reviewed.

CHAPTER ONE:
INTRODUCTION

Statement of Problem

Mental health has been traditionally conceptualized as the sole presence or absence of symptoms of psychopathology (PTH). However, recent literature (Antaramian, 2015; Antaramian, Huebner, Hills, & Valois, 2010; Greenspoon & Saklofske, 2001; Eklund, Dowdy, Jones, & Furlong, 2011; Renshaw & Cohen, 2014; Suldo & Shaffer, 2008; Suldo, Thalji-Raitano, Kiefer, & Ferron, 2016) has indicated the importance of using a comprehensive model of mental health that includes indicators of wellness or subjective well-being (SWB; Diener & Chan, 2011). Suldo (2016) noted that solely focusing on the absence of psychopathology does not indicate wellness. Thus, it is critical to examine a model with symptoms of well-being to fully understand mental health. Suldo (2016) has also indicated that focusing on positive constructs can lead to the development of strengths to overcome adverse experiences.

This perspective of using two indicators is identified as the Dual-Factor Model of Mental Health (DFM). Initially conceptualized by Greenspoon and Saklofske (2001), these researchers discovered a unique mental health status that may have not been identified by mental health screeners. By examining levels of well-being, the researchers were able to identify a group of students that self-reported high levels of both subjective well-being and psychopathology and those that reported low scores for both variables. Suldo (2016) reported that the four primary subgroups that come from this model are Complete Mental Health (CMH; defined by high SWB, low psychopathology), Symptomatic but Content (SBC; defined by high SWB, high

psychopathology), Vulnerable (defined by low SWB, low psychopathology), and Troubled (defined by low SWB, high psychopathology). Previous studies have applied this model in samples of middle school students (Antaramian et al., 2010; Suldo et al., 2011; Suldo & Shaffer, 2008), high school students (Suldo, Thalji-Raitano, Kiefer, & Ferron, 2016), and college students (e.g., Antaramian, 2015; Eklund et al., 2011; Renshaw & Cohen, 2014).

The current study investigated the Dual-Factor Model of Mental Health in a sample of elementary school students. As indicated, much of the research on the DFM has focused on adolescent populations. This study examined the model in a population which has only been studied in a sample of Canadian students by Greenspoon and Saklofske (2001), which was the first published study that indicated this phenomenon. The data utilized were part of a larger study completed by Hearon (2017) that implemented a multitarget, classwide positive psychology intervention in elementary school students, designed by Suldo and colleagues (2015). Using secondary analysis, this study examined an outlook on mental health that has not been completed in a population of American elementary school students. This study examined the impact of mental health group status on social functioning with classmates and teachers, which are two of the primary relationships for school children, outside of their family members (Adams et al., 2011; Bowker et al., 2011). Establishing high quality relationships throughout one's life is important to foster long term outcomes such as physical health (Abel & Kruger, 2010).

Throughout many of the studies which have examined Dual-Factor Model of Mental Health, the construct of psychopathology has been a combination of reported internalizing and externalizing symptoms (Antaramian, 2015; Antaramian et al, 2010; Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008; Suldo et al., 2016; Suldo, et al., 2011). Doll (2008) indicated that

due to the nature of the development of both externalizing and internalizing disorders, the model should be examined with each disorder being a separate construct. Although this categorical analysis might be easier to conduct, Doll (2008) believes that subjective well-being could be more related to solely internalizing disorders, as opposed to the combination of internalizing and externalizing disorders. Examining this model with a more specific outlook on psychopathology could yield beneficial results.

Definition of Key Terms

Subjective well-being (SWB). Subjective well-being is a term that encompasses components of cognition and emotion (Suldo, 2016). SWB is comprised of a combination of life satisfaction (e.g., satisfaction with life and current circumstances), positive (e.g., joy, pride, excitement), and negative (e.g., shame, anger, fear) affect. The current study sought to examine SWB by examining a combination of students reported (a) levels of life satisfaction and (b) ratings of positive and negative adjectives that describe their typical daily feelings. In the current study, participants' levels of SWB were assessed by standardizing the scores on measures of life satisfaction, positive, and negative affect, then adding together standardized life satisfaction and positive affect and subtracting standardized negative affect.

Psychopathology (PTH). Psychopathology symptoms are generally categorized into two encompassing categories, based upon the focus of the behaviors. For example, internalizing behaviors (e.g., feeling sad) are more focused on behaviors that are internally focused, while externalizing behaviors are much easier to distinguish as they are generally actions that are focused on other people in a child's environment. Externalizing behaviors are more outward as children who display these behaviors, direct these behaviors at other people or objects. Both categories of behaviors, if left untreated, generally persist into adulthood and are predictive of

negative outcomes. Developing proper behavior and emotional regulation are critical for long-term success (Merikangas et al., 2009; Merikangas et al., 2010). In the current study, participants' levels of psychopathology were assessed by the scores that the participants' teachers indicated on universal screening measures of externalizing and internalizing behaviors.

Dual-Factor Model of Mental Health (DFM). The Dual-Factor Model of Mental Health encompasses indicators of both SWB and psychopathology, to create a balanced view of mental health (Antaramian, 2015; Antaramian et al., 2010; Greenspoon & Saklofske, 2001; Eklund et al., 2011; Renshaw & Cohen, 2014; Suldo & Shaffer, 2008; Suldo et al., 2016). The critical piece of the model is that it distinguishes SWB and PTH as two separate constructs of mental health. However, when both factors are used in combination a more accurate picture of the state of a person's mental health is obtained. Suldo and Shaffer (2008) initially indicated four unique mental health groups: Complete Mental Health, Symptomatic but Content, Vulnerable, and Troubled. The current study incorporated the conceptualization and terms behind the model, which is backed by several studies (Antaramian, 2015; Antaramian et al., 2010; Greenspoon & Saklofske, 2001; Eklund et al., 2011; Renshaw & Cohen, 2014; Suldo & Shaffer, 2008; Suldo et al., 2016). In the current study, participants were categorized into mental health groups by dichotomizing the scores that participants self-reported for SWB and that teachers reported for psychopathology.

Social functioning. In the current study, student social functioning within the context of school has been theorized as students' performance on indicators of social functioning with teachers and classmates. Specifically, social functioning was assessed by (a) participants' rating of perceived social support from their classmates and teachers and (b) teacher's rating of their

satisfaction with their relationship with the student and (c) teacher's rating of the students' likelihood to seek out assistance.

Purpose of Current Study

The current study sought to expand upon the understanding of the Dual-Factor Model of Mental Health, specifically in a sample of elementary school students. Currently, only one study has examined an elementary school sample (Greenspoon & Saklofske, 2001), which was the initial study that indicated the need for a model that encompasses both positive and negative contributors to overall mental health. The conceptualization of the Dual-Factor Model of Mental Health in this study is consistent with previous literature (Antaramian, 2015; Antaramian et al., 2010; Greenspoon & Saklofske, 2001; Eklund et al., 2011; Renshaw & Cohen, 2014; Suldo & Shaffer, 2008; Suldo et al., 2016). The current study sought to expand upon the model and examine how the mental health group predicts social functioning with teachers and classmates, which are two primary social networks in which interactions take place within a school setting. This study also sought to inspect the symptoms of psychopathology, specifically examining the makeup of externalizing and internalizing symptoms between each of the four mental health groups.

The specific research questions answered in this study:

1. Are there representative percentages of elementary school children within each of the four quadrants of Dual-Factor Model of Mental Health, as similarly conceptualized by previous studies?
2. If the Dual-Factor Model of Mental Health is found to exist, are there differences between the four groups in their levels of social functioning, regarding:

a. Classmate support as indicated by scores on the Child and Adolescent Social Support Scale?
b. Teacher support as indicated by scores on the Child and Adolescent Social Support Scale and Teacher-Student Relationship Inventory?

3. If the Dual-Factor Model of Mental Health is found to exist, are there differences between the four groups in psychopathology make-up, regarding:
    a. The mean values of externalizing and internalizing behaviors across each of the four mental health groups?
    b. The mean values of externalizing or internalizing behaviors within each mental health group?

Hypotheses

The first research question is descriptive in nature and does not involved hypothesis testing in part due to the exploratory nature of the sample (first study of the DFM in a sample of American elementary school children). Regarding anticipated descriptive statistics (percentages of the sample in each quadrant), if the elementary school student sample yielded mental health groups similar to that of previous DFM studies, it was hypothesized between 50 and 65% of students would report (SWB) or receive (PTH) scores that will classify them into the Complete Mental Health group. Additionally, the other three mental health groups (Symptomatic but Content, Vulnerable, and Troubled) were anticipated to each yield proportions between 10 and 15% of the total sample. Such sample sizes would be consistent with findings from previous DFM studies with samples of adolescents and young adults which are summarized in more detail in Chapter 2 (Antaramian, 2015; Antaramian et al., 2010; Greenspoon & Saklofske, 2001;

Eklund et al., 2011; Lyons et al., 2012; Renshaw & Cohen, 2014; Suldo & Shaffer, 2008; Suldo et al., 2016).

Regarding the second research question, it was hypothesized that groups of students who reported greater levels of SWB (i.e., Complete Mental Health, Symptomatic but Content) would report greater levels of social functioning with both their peers and teachers, when compared to those groups that do not have elevated levels of SWB (i.e., Vulnerable, Troubled). This hypothesis was derived from previous literature that has indicated the importance of SWB and the variety of domains it positively impacted in prior studies (e.g., Suldo & Shaffer, 2008), as well as the negative implications of elevated levels of psychopathology (Diener & Chan, 2011; Merikangas et al., 2009; Merikangas et al., 2010; Moor et al., 2014; Nail et al., 2015; Suldo & Huebner, 2004; Suldo, Riley, & Shaffer, 2006). These notions are further described during Chapter 2.

Based on the preliminary notions of Thalji (2012) regarding psychopathology makeup, several hypotheses were formulated. First, those students classified in the CMH group would have report the lowest levels of both externalizing and internalizing behaviors, when compared to the other three mental health groups. Also, students classified in the SBC group would have (a) greater levels of externalizing behaviors than internalizing behaviors and (b) greater levels of externalizing behaviors compared to the other three mental health groups, as was observed in the study completed by Greenspoon and Saklofske (2001). Additionally, those students classified in the Vulnerable and Trouble mental health groups would have greater levels of internalizing behaviors when compared to externalizing behaviors, consisted with Thalji's (2012) findings.

Contributions to the Literature

Several studies have sought to examine and provide justification for the Dual-Factor Model of Mental Health. However, outside of Greenspoon and Saklofske (2001), no studies have examined the model in a sample of elementary school students. Suldo and Shaffer (2008) were the first to label those unique groups: "Vulnerable" and "Symptomatic but Content." Other researchers have examined several samples such as middle school students (Antaramian et al., 2010; Suldo & Shafer, 2008), high school students (Suldo et al., 2016), and college students (Antaramian, 2015; Eklund et al., 2011; Renshaw & Cohen, 2014). These studies have indicated the model is present across a variety of age groups. It is important to examine each of these groups in a sample of elementary school students to provide further understanding of school children's mental health and to potentially increase the generalizability of the model. This, in turn, might lead to a rationale for development and utilization of interventions to increase and maintain students' levels of SWB and alter their mental health status in a positive fashion.

Another contribution to the literature stems from a critique by Doll (2008), who noted the importance of examining the symptoms of psychopathology as separate constructs, within the model. Due to the primary differences between externalizing and internalizing disorders, it was important to examine them as different constructs. However, previous studies have always examined them in combination, under the broader term psychopathology.

Limitations and Delimitations

Several limitations and delimitations may impact the generalizability of this study. Delimitations included the data all coming from a single elementary school, the dependence on teachers reporting the internalizing behavior of students, the fact that the data was restricted to 4th and 5th grade students, as opposed to an entire elementary school sample, and student data

was considered nested within each classroom, specific to each teacher. Also, the measure of externalizing behaviors has limited support for validity at the time of this study. A final limitation is that the data that were analyzed in this dataset are from an archival data set, thus limiting the variety of variables which can be used in the analysis. These limitations are further discussed within Chapter 5.

CHAPTER TWO:

LITERATURE REVIEW

The purpose of this chapter is to examine the previous literature and current outlooks on mental health collectively and in elementary school students. Previous models solely examined the presence or absence of symptoms of psychopathology (Joseph & Wood, 2010; Seligman & Csikszentmihalyi, 2000; Whitcomb & Merrell, 2013). Recently there has been a transition to a model that examines the presence of both subjective well-being and psychopathology in combination to form a more comprehensive model, referred to as the Dual Factor Model of Mental Health (e.g., Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008). This chapter also examines the development, prevalence, and implications of externalizing and internalizing disorders in elementary school students and how these psychopathological symptoms can have an impact on students' mental health. Last, this chapter focuses on the patterns of social functioning between elementary school students and both their (a) classmates and (b) teachers in schools and the role that mental health plays in these relationships.

Mental Health

Importance of Mental Health

There is a substantial body of empirical support that illustrates the importance of happiness for all people, as summarized by Suldo (2016). Studies have indicated that those with greater levels of subjective well-being (SWB) live longer (Moor et al., 2014), have greater physical health, and possess superior function in multiple areas of development (e.g., academic achievement, identity, physical health; Diener & Chan, 2011; Moor et al., 2014). Specifically,

for school children, thriving at school is the primary goal and is one of the outcomes that is frequently examined in research. Keyes (2009) indicated that mental disorders are associated with decreased levels of academic performance, behavior, and interpersonal relationships. Having a positive development throughout early childhood and elementary school is critical for success across domains and in later stages of life (Stiglbauer et al., 2013).

Traditional Approaches to Mental Health

The idea of diagnosing a person with a form of mental illness stems from a medical model of psychological disorders, as summarized by Whitcomb and Merrell (2013). The term classifying has been used simultaneously to further define this process. By systematically classifying mental disorders there can be increased understanding amongst professionals specific to each diagnosis. This can lead to the development of interventions that address the needs of clients. It is critical for this process to identify and classify the symptoms and determine if they are considered normal or abnormal in nature. One must also consider the level of impairment that accompanies each of the symptoms.

The Diagnostic and Statistical Manuel for Mental Disorders (DSM-5; American Psychiatric Association, 2013) encompasses the clinical definitions of a multitude of psychological disorders that are used for diagnosis. This manual serves as the primary source of assessment used for individuals with mental health concerns. The manual is based around illness-oriented practice to provide a diagnosis to those with mental health concerns (Sisti & Johnson, 2015) which has been subject to controversy. According to Whitcomb and Merrell (2013), previous versions of the DSM did not sufficiently distinguish the symptoms of positive and negative indicators of mental health across stages of development. Additionally, the DSM has been subject to low interrater reliability of diagnosis amongst clinicians. Thus, research on

mental health is warranted, particularly examining a model that encompasses protective factors (e.g., personal strengths, resiliency). Previous literature has been solely focused on psychopathology as the primary indicator of mental health (Joseph & Wood, 2010; Seligman & Csikszentmihalyi, 2000). However, there is a more recent trend that emphasizes examining the presence or absence of both positive and negative indicators of mental health (Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008). This notion developed primarily because of the influx of United States Veterans returning from war and a national focus on mental health treatment during recovery, as described by Seligman (2002; 2011).

Negative Indicators of Mental Health

Negative indicators of mental health are generally referred to under the broader term of psychopathology (Merikangas et al., 2009). The most common symptoms that have been examined in previous literature are classified as externalizing (e.g., aggression, conduct disorder) and internalizing behaviors (e.g., anxiety, depression). The presence of these symptoms in childhood is associated with an increased risk for meeting the criteria for a mental disorder (e.g., depression, conduct disorder, antisocial behavior) in adulthood as well as issues across other domains (e.g., academic struggles, relationship problems; Merikangas et al., 2009; Merikangas et al., 2010; Nail et al., 2015).

Externalizing disorders. Externalizing disorders in children are some of the most difficult behaviors for parents and teachers to regulate (Whitcomb & Merrell, 2013). Behaviors such as these are generally attributed to acts of outward aggression and impulsivity (Hinshaw, 1992). These behaviors, while often difficult to ignore, are disturbing to other people in the environment (e.g., students, other teachers, etc.). Due to their magnitude, these behaviors are more frequently identified than internalizing disorders (Merikangas et al., 2009; Merikangas et

al., 2010). The most frequently reported behaviors that are classified as externalizing disorders are AD/HD, conduct disorder, and oppositional defiant disorder (Costello et al., 2003). The prevalence of these disorders ranges greatly: AD/HD (3-5% of population, 8.7% of children; American Psychiatric Association, 2013), conduct disorder (3.3% prevalence in population, 1 to 11% over course of lifetime; American Psychiatric Association, 2013), and ODD (4% prevalence in population, 2-10% over course of lifetime; American Psychiatric Association, 2013). Each of these behaviors is more frequently observed in boys as opposed to girls (American Psychiatric Association, 2013). As children age, externalizing behaviors have been associated with negative mental health outcomes, such as substance abuse, academic difficulties, school failure (Campbell & Ewing, 1990), suicidal behavior, incarceration (Goldstein et al., 2005), and hospitalization (Meyer et al., 2004). Suldo and Huebner (2004) noted that high levels of SWB served as a protective factor against the development of externalizing disorders.

Internalizing disorders. Anxiety disorders have the earliest onset and are some of the most common mental health concerns reported in elementary school (Merikangas et al., 2009; Nail et al., 2015). These behaviors refer to those actions that are directed inward when a student attempts to have control of their emotions or life circumstances (Gresham & Kern, 2004). Approximately 20% of students will meet criteria for an internalizing disorder during their lifetime (Merikangas et al., 2009; Merikangas et al., 2010). Even though these disorders have a higher than expected presence, no more than 20% of the youths will meet criteria for a mental disorder in adulthood that might persist throughout their lifetime. However, if these behaviors are seen during adolescence, there is an increased risk for the disorder to remain stable over time (Diener & Chan, 2011) as well as a variety of other issues long term, such as educational underachievement (Ferguson & Woodward, 2002; Nail et al., 2015) and substance abuse

(Bottorff, et al., 2009). This fact provides evidence for the development and implementation of early identification, intervention, and preventative services for mental health in elementary school. Additionally, he median age of onset of internalizing disorders is six years of age, again indicating the vital importance of mental health services being implemented in elementary schools (Merikangas et al., 2009).

Nail and colleagues (2015) sought to examine the relationship between childhood anxiety disorders and academic performance. A sample of 488 elementary school students (age 7-11 years old) self-reported internalizing behaviors and feelings and the researchers concluded that 47% of the students were impaired on four of seven measures of academic performance (e.g., completing assignments, giving oral reports, taking tests), which was believed to be due to the magnitude of internalizing behaviors. Those students with General Anxiety Disorder (GAD) were impaired on six of the seven measures. Those participants who received a treatment intervention were more likely to show reduced symptoms of anxiety, decreased levels of academic impairment, as well as increased levels of global functioning.

Explanation and Importance of Complete Mental Health

Recent research has indicated it may be beneficial to examine a more comprehensive model of mental health, as opposed to simply the presence or absence of psychopathology symptoms (Greenspoon & Saklofske, 2001; Keyes, 2002, 2009; Suldo, 2016; Suldo & Shaffer, 2008; Suldo et al., 2016). Past conceptions of psychopathology focused on negative outcomes and dysfunctions (Seligman, 2002; Suldo, 2016). Mental health treatments were previously focused on veterans who were returning from wars (Seligman, 2002; 2011). Specifically, there has been an interest in studying positive indicators, such as subjective well-being (SWB), which has been identified as the operationally defined term for happiness (Diener & Chan, 2011).

SWB is an individual's perceived quality of life at the current moment (including both cognitive and affective components) as well as their positive and negative affect. Other key factors are perceptions of the past, satisfaction with the present, and possessing a positive outlook of the future (e.g., hope, optimism).

Having high SWB has been linked to favorable outcomes, such as increased academic success (Suldo, Riley, & Shaffer, 2006), physical health (Diener & Chan, 2011; Moor et al., 2014) and increased relationship satisfaction (Suldo & Huebner, 2004). The current movement attempts to foster a positive state of mind by teaching individuals to use their signature strengths and to identify the positive features within their life (Suldo, 2016). Learning how to use one's personal strengths is important in developing the skills to overcome adverse experiences in life. Also, by examining the positive supports and viewpoints a person has in his or her life a more comprehensive view can be obtained.

Positive Indicators of Mental Health

In the study of positive psychology, the primary outcome that is studied is quality of life and how it can be increased. Seligman (2011) noted several key constructs that have been examined in previous research. Keyes (2002, 2009) noted that positive mental health includes constructs of social well-being (e.g., positive relationships) and psychological well-being (e.g., increased maturity, self-acceptance). Both indicators have been associated with emotional well-being, parallel to the indicators of SWB: life satisfaction and positive affect. Keyes' model of mental health includes an extensive range of functioning from languishing (e.g., mentally unhealthy) to flourishing (e.g., high emotional well-being as well as positive functioning in greater than half of psychological and social domains). Those who have flourishing mental health generally have few symptoms of depression and conduct issues, while those that were

labeled as languishing generally have an increased risk of these issues and more negative outcomes long term.

PERMA. An updated conceptualization of mental health was developed by Seligman (2011), titled PERMA. This theory is grounded in authentic happiness. However, Seligman (2011) expressed a notion for this theory to instead be altered towards *well-being theory.* The primary focus of this theory is on positive emotions (P), engagement (E), relationships (R), meaning (M) and accomplishment (A) within a person's life. Positive emotions encompass subjective well-being and life satisfaction to create a pleasant life. Engagement focuses on the flow of a situation and ensures that immersion in activities leads to a more engaged life. Relationships focus on having positive influences (e.g., people) around them to contributing to stronger relationships. Meaning provides a person with a sense of purpose for themselves. Last, accomplishment encompasses aspect of personal achievement throughout a person's life. Seligman (2011) has indicated that the focus of positive psychology and well-being should be on the combination of all these factors, as opposed to simply instilling positive emotions. These factors have been associated with contentment (i.e., long term happiness) which has been associated with greater SWB throughout a lifetime.

Kern et al. (2015) examined the influence and overlap of positive emotions within a sample of 500 Australian boys. The researchers found that positive emotions, engagement, relationships/meaning, and accomplishment were related to vital outcomes, such as physical health. One of the key findings from this study was that each of the factors that the researchers examined were found to be separate constructs, except for relationships and meaning, which were subsequently combined into one factor, based on the high levels of similarity between the two constructs. These findings have indicated the measures of well-being were separate

constructs, providing evidence for a multidimensional approach, all which could lead to a wide variety of positive outcomes. Having a multidimensional approach can teach students how to recognize and use their own personal strengths and instill an awareness of any personal weaknesses.

The Dual-Factor Model of Mental Health

To examine both positive and negative indicators of mental health in tandem, a model has been developed, titled the Dual Factor Model of Mental Health. Within this framework, four primary mental health groups have been consistently established (Antaramian, 2015; Antaramian et al., 2010; Greenspoon & Saklofske, 2001; Eklund et al., 2011; Renshaw & Cohen, 2014; Suldo, 2016; Suldo & Shaffer, 2008; Suldo et al., 2016). Each of these four groups have yielded different outcomes across a variety of studies (Suldo et al., 2016), which will be discussed in this chapter. These differences have even been distinguishable between the groups that are comprised of similar levels of psychopathology. Thus, there is a need to examine each of these groups in tandem and separately.

The first subgroup, those who are labeled as having "Complete Mental Health" (CMH; average = 65%, 57-78% of previous samples) have high SWB and lower levels of psychopathology, as compared to the other mental health groups (Suldo, 2016). These students generally possess a better attitude towards school (Antaramian, 2015; Suldo et al., 2016), superior grades (Antaramian, 2015; Eklund et al., 2011; Renshaw & Cohen, 2014; Suldo & Shaffer, 2008; Suldo et al., 2016), better physical health (Suldo et al., 2016), and high quality social relationships (Antaramian et al., 2010; Greenspoon & Saklofske, 2001; Lyons et al., 2012; Suldo & Shaffer, 2008; Suldo et al., 2016). Those students that fall into this group have also been labeled as being well-adjusted, mentally healthy, or having positive mental health (Suldo et

al., 2016). A second mental health group, identified as "Vulnerable" (average = 12.1%, 8-19% of previous samples) are those students who have low levels of both SWB and psychopathology (Suldo, 2016). Studies have consistently found that these students have decreased self-concept (Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008; Suldo et al., 2016), worse physical health (Suldo et al., 2016), and lower grades (Antaramian, 2015; Eklund et al., 2011; Renshaw & Cohen, 2014; Suldo & Shaffer, 2008; Suldo et al., 2016) than those with Complete Mental Health. However, students classified as "Vulnerable" are currently unlikely to receive any mental health interventions based on the traditional model which seeks to identify and reduce dominating symptoms of psychopathology (Suldo et al., 2016).

A third mental health group includes students who are labeled as "Troubled" (average = 12.8%, 8-17% of previous samples), with low SWB and high levels of psychopathology (Suldo, 2016). These would be the students who are traditionally identified to be mentally unhealthy. These children have the worst outcomes regarding academic achievement (Antaramian, 2015; Eklund et al., 2011; Renshaw & Cohen, 2014; Suldo & Shaffer, 2008; Suldo et al., 2016), social support (Antaramian et al., 2010; Greenspoon & Saklofske, 2001; Renshaw & Cohen, 2014; Suldo & Shaffer, 2008; Suldo et al., 2016), and physical health (Suldo et al., 2016) when compared to the other three mental health groups. The final mental health group that the DFM identifies are those who are "Symptomatic but Content" (SBC; average = 10.1%, 4-17% of samples; Suldo, 2016). These are students who have elevated levels of both SWB and psychopathology. In relation to their troubled peers, positive outcomes have been associated with Symptomatic but Content students, again indicating that the increased levels of SWB are associated with more positive outcomes. The high psychopathology that those in this group report might go unnoticed due to their outward levels of SWB or be less damaging due to the

protective nature of SWB. Overall, the model yields two distinct groups of students ("Vulnerable" or the "Symptomatic but Content") which may not be easily identified. The growing literature has indicated the superior outcomes associated with possessing Complete Mental Health, as well as some benefits associated with Symptomatic but Content status (relative to Troubled; Suldo, 2016). Thus, examining the model in a sample which has not been adequately examined and in a fashion, that allows for the relationship between SWB and psychopathology to be further examined, is warranted.

The previous studies that have conceptualized the DFM are now reviewed in detail. Figure 1 provides a visual representation of the conceptualization of the DFM mental health groups. Regarding the studies which examined the existence of the DFM, the distribution of the participants in each of the mental health groups, and the primary outcome measures (e.g., gratitude, GPA) that were used to distinguish differences between the mental health groups are provided in Table 1. The measures used to examine SWB and psychopathology, and methods used to classify participants into one of the four mental health groups, are provided in Table 2.

	Level of SWB	
Levels of Psychopathology	Low	High
Low	Vulnerable	Complete Mental Health
High	Troubled	Symptomatic but Content

Figure 1. Mental Health Status-Dual Factor Model of Mental Health (Suldo, 2016)

Previous Studies Examining the Dual-Factor Model of Mental Health

Greenspoon and Saklofske (2001). One of the initial studies that proposed a model for mental health that included consideration of both SWB and psychopathology was completed by Greenspoon and Saklofske (2001). This research was initially conducted to develop a preventative framework, focused on identifying those children who were at risk for school

failure, however, might not have been identified due to their strengths. The goal in mind was to develop interventions and prevention measures that would instill Complete Mental Health in all students. The researchers obtained data on 407 3rd through 6th grade Western Canadian elementary school students' SWB, psychopathology, personality, and other related constructs (Greenspoon & Saklofske, 2001). The authors did not provide data on the demographic features (i.e., racial distributions) of this sample. This study recognized individuals aside from those students that had solely high SWB (i.e., along with low psychopathology) and those students that had solely high psychopathology (i.e., along with low SWB). A unique group of students identified as having low psychopathology along with low SWB (termed "distressed") had lower interpersonal relations and lower academic self-concept in relation to students whose lack of psychopathology co-occurred with the presence of high SWB. Another unique contribution of this study was that it also revealed a group of individuals who identified as having both symptoms of psychopathology and high SWB, while previous literature only sought to examine the constructs individually. The group of students who had high psychopathology and high SWB simultaneously was characterized by a greater level of teacher-rated sociability, and intact interpersonal relations. In this sample, the students who had low psychopathology and high SWB (akin to what is now referred to as a "Complete Mental Health status") had higher global self-esteem, locus of control, interpersonal relationships, and self-efficacy, as compared to the other groups. The researchers noted that it would be important to examine these factors in older and more diverse populations, in hope of developing interventions and a more generalized understanding of the model.

Suldo and Shaffer (2008). The Dual-Factor Model was subsequently examined in a sample of 349 American students in grades 6th through 8th (Suldo & Shaffer, 2008). The

following ethnic groups were present in this study: Caucasian (55%), African American (14%), Hispanic or Latino (12%), multiracial (10%), and other ethnicities (8%). The participants completed measures that examined their (a) SWB, (b) psychopathology, and (c) functioning in multiple domains including social, physical health, and academic. Additional data to examine participants' externalizing behaviors were collected from their classroom teachers. Again, in this sample, four unique groups were distinguished. Within the sample, 57% of the students reported having "Complete Mental Health" (i.e., high SWB, low psychopathology), 13% were considered "Vulnerable" (i.e., low SWB and low psychopathology), 13% were labeled "Symptomatic but Content" (high SWB and high psychopathology), and 17% identified as "Troubled" (i.e., low SWB and high psychopathology).

The researchers also took measures of students' academic abilities and found that those students who were labeled as having CMH were more successful than their peers who were identified as Vulnerable (Suldo & Shaffer, 2008). Additionally, those identified Vulnerable reported less motivation, self-regulation of behavior, self-concept, importance of education, and importance of long term goals, than their peers with higher SWB. The benefits of having CMH were also recognized through interpersonal functioning. Those students who reported high SWB reported having better social relationships with their classmates than those participants who displayed equal levels of psychopathology. However, the relationship those students with CMH had with their teachers was not significantly different than their peers that were identified as "Vulnerable." This was the only relationship that was not significantly different between these two mental health groups. Participants who were placed in the "Symptomatic but Content group" felt greater positive interpersonal relationships with classmates and increased social support from their parents than was reported by Troubled youth, who reported the lowest levels

of social support from their parents. Similarly to Greenspoon and Saklofske (2001), when used to examine a child's level of functioning, the DFM recognizes two groups that in some cases might go unnoticed by those methods that simply focus on levels of psychopathology. The student identified as "Symptomatic but Content," would most likely display strengths and characteristics of SWB, but due to their corresponding levels of psychopathology, could excel or deteriorate over time, based on how they progress through life. Those students who are labeled as vulnerable, due to their lack of SWB, could be unprotected from life circumstances and have an increased likelihood of incurring negative consequences later in life.

Antaramian et al. (2010). The primary focus of this study was to identify if the four groups that were identified by Suldo and Shaffer (2008) existed in a different middle school sample, as well as examine the relationship between mental health and school engagement (Antaramian et al., 2010). This study also sought to examine variables of the environment that could impact the mental health of students. A sample of 764 students in 7th and 8th grade was examined. No mean age of the participants was provided by the researchers. The sample consisted of primarily Caucasian (63.6%) students, yet there was some diversity in the sample, as 29.6% of students identified as African-American (Antaramian et al., 2010). However, Asian (2.6%) and Hispanic (1.3%) students were underrepresented. Participants completed measures that assessed their levels subjective well-being, symptoms of psychopathology, behavior engagement, emotional engagement, cognitive engagement and environmental context. Also, the researchers collected a sample of academic achievement (e.g., GPA, standardized test scores). This study concluded that the mental health groups of this sample were similar in their distribution to Suldo and Shaffer (2008) and bore four distinct mental health groups: Complete

Mental Health (66.9%), Vulnerable (8.1%), Symptomatic but Content (17.3%), and Troubled (7.7%).

These findings indicated that SWB is not necessarily linked to absence of psychopathology (Antaramian et al., 2010). The two must be viewed on a continuum and in combination to obtain an accurate depiction of CMH. Those students that were identified as having CMH reported greater levels of engagement, connectedness, and involvement in their school. Additionally, the researchers indicated that student engagement was associated with increased academic achievement. Those participants identified in the CMH group had an average GPA that was above a 3.0 (B average). Lastly, the students who had CMH reported greater feelings of support from their parents and peers regarding learning and a greater relationship with their teachers than those students that reported being low in SWB. Due to the association between decreased mental health and the reported negative outcomes, the case can be made for the essential role of a student having CMH to be more successful in school. The authors also noted the self-reported data and the inability of these results to predict mental health status over time, based on the cross-sectional design of this study, limits the generalizability of these findings over time. Despite the adequate self-report measures that were utilized in this study, it would have been ideal to obtain additional information on the participants' levels of psychopathology from other informants (e.g., parents, teachers) to provide a more comprehensive view.

Suldo, Thalji, and Ferron. (2011). These researchers examined longitudinal outcomes of middle school students' SWB, symptoms of psychopathology, and the predictive nature of students' school functioning (Suldo et al., 2011). This study also examined the stability of mental health of students over a one-year period. Measures of life satisfaction, positive and

negative affect, psychopathology (internalizing and externalizing behavior problems; self-report and teacher report), and academic achievement (i.e., GPA, standardized test scores) were collected. This study was a longitudinal follow-up of the sample described by Suldo and Shaffer (2008), thus the distribution between the mental health groups was the same.

The results of this study indicated that SWB was associated with later academic achievement, while symptoms of psychopathology were associated with decreased academic achievement (Suldo et al., 2011). Specifically, those students who were Troubled declined faster than any other mental health group. Thus, this study provided support for the importance of SWB predicting students' academic functioning (i.e., GPA). This study also indicated a positive longitudinal relationship between SWB and later grades, and negative relationships between psychopathology indicators and academic achievement. Specifically, internalizing problems were predictive of decreased school attendance, and students with externalizing symptoms had greater declines in grades during the following school year and were associated with more behavior issues during the school year (e.g., office referrals, discipline). Consistent with previous studies (Antaramian et al., 2010; Suldo & Shaffer, 2008), academic achievement was more stable in those students who had complete mental health. This study expanded the literature on the DFM by examining multiple aspects of academic achievement. The researchers indicated that future research should be completed with a more diverse sample, but this first longitudinal study provided support that mental health status as yielded from a DFM has later implications on academic functioning.

Eklund et al. (2011). This study examined the DFM in college students. This sample was comprised of 246 students, age 18-25 who had enrolled in a university undergraduate course (Eklund et al., 2011). These researchers did not provide data on the demographic features (racial

distributions of this sample or mean age) of the participants. Self-report measures of personality, life satisfactions, hope, gratitude, grit, and mental health were collected. The researchers concluded that the mental health groups did reflect the presence of those suspected to yield from a dual-factor model. The researchers chose to label the groups slightly differently, however the classification into each group were similar to previous studies (Suldo & Shaffer, 2008). The sample was comprised of the following groups: "well-adjusted" (high life satisfaction, low clinical symptoms; 78%), "at risk" (low life satisfaction, low clinical symptoms; 9%), "ambivalent" (high life satisfaction, high clinical symptoms; 4%), and "distressed" (low life satisfaction, low clinical symptoms; 9%).

Those participants who were identified as members of the well-adjusted or at-risk groups reported engaging in less maladaptive behavior as well as possessing a greater locus of control. Additionally, those students who were well adjusted had greater levels of gratitude and hope than the groups that were higher in symptoms of psychopathology. Overall, the authors indicated support for the DFM in a sample of college students. The researchers reported that they believe the presence of this model could lead to one examining this model on a continuum, to emphasize to practitioners the importance of not only aiming for an absence of psychological symptoms, but also the presence of positive mental health indicators. One key limitation to this study was that 79% of the participants in this study were female, thus limiting the generalizability of this sample to a population with more men. Eklund and colleagues (2011) noted that due to the clear distinction between the four groups there is a need for interventions to be developed to target the specific symptoms of each of the four groups. The authors also indicated that future studies should focus on measures beyond life satisfaction as well as examine larger samples with more equal proportions of students in each of the mental health groups. This would gather generalized

evidence for the DFM and increase understanding of the differences between the four mental health groups.

Lyons et al. (2012). This study examined perceived social support, personality traits, and environmental factors and the influence these factors had on the Dual-Factor Model as proposed by Greenspoon and Saklofske (2001). Participants in this study were 990 students in grades 6th through 12th, with an average age of 14.62 years old. This sample was comprised of students that identified as African American (58%), Caucasian (35%), and "Other" (7%). The authors noted that the participants in this study were classified into mental health categories that were consistent with previous studies, such as Suldo and Shaffer (2008), as 64% of participants were classified as having Complete Mental Health, 20% were classified as Troubled, 9% of students were classified as Symptomatic but Content, and 7% of students were considered Vulnerable. The researchers used the same methodology that was established by Antaramian et al. (2010) in that students who fell below 1 standard deviation about the mean on either internalizing or externalizing behaviors were classified as having high or low levels of psychopathology.

Regarding outcomes associated with the four-group classification scheme, the primary findings of this study were that personality variables, such as extraversion and neuroticism were associated with those mental health groups that displayed higher levels of psychopathology. Another interesting finding, parental social support, was found to be predictive of participants belonging to the Vulnerable mental health group, as opposed to the troubled mental health group, while other relationships (e.g., peer, teachers) did not contribute to a specific group membership. This study had a strong methodology as the researchers used a N-1 cross-validation classification procedure within their statistics to ensure the proper classification of each mental health group.

A limitation of this study was that 64% of the participants were female, thus limiting the generalizability of the results. The authors indicated that future research should focus on more diverse populations and younger age groups to develop a more comprehensive outlook.

Renshaw and Cohen (2014). This study sought to further examine the mental health of college students by using one measure of SWB (i.e., the Quality of Life Interview Brief Version-General Life Satisfaction Scale), three measures of psychopathology (The Brief Symptom Inventory-18 somatization, depression, and anxiety subscales), and three measures of college student functioning (e.g., academic achievement, interpersonal connectedness, physical health; Renshaw & Cohen, 2014). This sample was comprised of 1,356 undergraduate students, ages 17-51. The participants in the sample identified as Caucasian (82%), African American (8%), Hispanic (3%), and Asian (3%). The researchers chose to label the mental health groups differently than previous studies: "mentally healthy", "mentally unhealthy", "symptomatic yet content", and "asymptomatic yet content." However, the distribution was similar to previous studies (Suldo & Shaffer, 2008; Eklund et al., 2011). The majority of participants in this sample were classified as being mentally healthy (61.4%), followed by: asymptomatic yet discontent (18.7%), mentally unhealthy (15.1%), and symptomatic yet content (4.8%). Those students who were mentally healthy reported greater levels of interpersonal connectedness and physical health than those in the mentally unhealthy group. Specifically, those who were mentally healthy had greater interpersonal connectedness than all the other mental health groups. Regarding academic achievement, the only significant differences were found between those who were mentally healthy and those who were asymptomatic-yet-discontent. The researchers concluded that the results from this study indicate the importance of mental health in quality of life outcomes. Similar to Suldo and Shaffer (2008), those students who were identified as Symptomatic yet

Content showed greater social functioning than mentally unhealthy individuals (Renshaw & Cohen, 2014). However, solely one measure for each of the quality of life outcomes was used and multiple ones should be used in future studies, as was done for internalizing symptoms of psychopathology.

Antaramian (2015). This study sought to expand the dual-factor model of mental health in a more diverse population of college students than previous studies (Eklund et al., 2011; Renshaw & Cohen, 2014). Mental health was comprised of self-report measures of SWB (life satisfaction, positive, and negative affect) and psychopathology (externalizing and internalizing symptoms). This study examined a sample of 561 undergraduate college students. The majority of participants in the sample were Caucasian (82%) with an average age of 19.5 years old. The researcher titled the mental health groups similarly to Eklund and colleagues (2011): "well-adjusted" (47.4%), "ambivalent" (5.5%), "at-risk" (26.0%), "distressed" (21.0%). This study has the lowest proportion of participants who would be classified as having Complete Mental Health and the highest levels of the other three mental health groups, which suggests that college students might have difficulty maintaining SWB.

Consistent with previous findings, participants with higher levels of SWB had increased levels of academic achievement and student engagement (Antaramian, 2015). Specifically, those who were well-adjusted reported more engagement with peers and faculty, higher intrinsic motivation, better study habits, higher GPA's and felt a greater sense of belonging to their university community than those who reported lower levels of SWB in both the ambivalent and distressed mental health groups. A limitation of this study is that participants were drawn from a single university, limiting generalizability (Antaramian, 2015). Nevertheless, the researchers

indicated that the results of this study are similar to those that have examined college student populations (Eklund et al., 2011).

Suldo, Thalji-Raitano, Kiefer, and Ferron (2016). These researchers sought to increase the understanding of the DFM among high school students in a sample of 500 American youth from two schools in grades 9th through 11th (14 to 18 years old; *M*= 15.27 years old; *SD* = 1.0). Compared to previous studies of the DFM, the schools that were sampled were rather diverse as half the students in the schools that were sampled were eligible for free or reduced-price lunch, and the following ethnic groups had a presence: White (44%), Hispanic (34%), African American (8%), Asian (3%), multiracial (10%), and other racial identity (2%). This study examined mental health status in relation to students' academic attitudes, perceptions of physical health, identity development, social support, and romantic relationship satisfaction. Participants completed measures of SWB and internalizing psychopathology, and teachers provided data on externalizing.

Regarding mental health groups, the majority of students were classified in the Complete Mental Health group (62.2%), followed by: Vulnerable (11.4%), Symptomatic but Content (11.4%), and Troubled (15%). The results of between-group comparisons contributed to consistent findings that youth identified as having CMH had better outcomes across a variety of domains than their peers that had were identified in groups with greater levels of psychopathology. For example, students with CMH reported greater academic self-perceptions, value of school, social adjustment, stronger identifies, and increased satisfaction with their physical health than those students that were classified into the vulnerable mental health group. These students also perceived greater support from their parents, classmates, and teachers, and had higher romantic satisfaction. Interestingly, there were no differences in reported levels of

peer victimization between participants in the complete mental health when compared to the vulnerable group. Those students that were classified into the "Symptomatic but Content" mental health group had greater academic self-perceptions, attitudes towards school, health satisfaction, self-concept, self-esteem, and meaningful activity involvement. Additionally, these students had greater perceived social support from parents, classmates, teachers, as well as increased romantic satisfaction and less peer victimization as compared to those students classified as troubled. Clinical practice implications from this study include implementing universal mental health screenings to ensure early interventions efforts for students without CMH, especially those troubled students with high levels of psychopathology and low levels of SWB.

The authors noted that this study is limited in the fact that it examined students from a single, southeastern state in the United States and that the sample included a higher portion of female participants (59%; Suldo et al., 2016). Additionally, the authors noted that to further examine these findings, it would be greatly beneficial to examine multiple viewpoints (e.g., parents, teachers) of student's adjustment to obtain a more comprehensive view of the student's levels of functioning.

DFM Previous Studies Summary

Specific information referencing the previous studies which sought to examine the DFM is provided in the tables below. In Table 1, the distributions of participants in each mental health group across the completed studies is provided. Additionally, the measures and cutoff scores used to categorize participants into the four DFM mental health groups within each study are provided in Table 2. A variety of measures were utilized and there were inconsistencies in the utilized methodologies, particularly with the methods researchers used to define psychopathology and SWB. The methods the researchers utilized to define psychopathology varied as Renshaw and Cohen (2014) only examined internalizing behavior scores, while Eklund and colleagues (2011) collected

measures of personal adjustment and an emotional index score. Also, in several of the studies, SWB encompassed positive affect, negative affect, and life satisfaction (Antaramian, 2015; Antaramian et al., 2010; Suldo & Shaffer, 2008; Suldo et al., 2016). However, some researchers chose only to examine life satisfaction (Eklund et al., 2011; Greenspoon & Saklofske, 2001; Lyons et al., 2012; Renshaw & Cohen, 2014).

Based on a review of the previous studies of the DFM, a limitation of this line of research is the lack of understanding of the model in elementary school populations. Five of the studies examine students in grades 6th through 12th (Antaramian et al., 2010; Lyons et al., 2012; Suldo & Shaffer, 2008; Suldo et al., 2011; Suldo et al., 2016). The other three studies have examined adult populations, primarily college students (Antaramian, 2015; Eklund et al., 2011; Renshaw & Cohen, 2014). Greenspoon and Saklofske (2001) completed the only study to examine the DFM in a sample of solely elementary school students (3rd through 6th grade). Even so, that study is limited based on the wide range of developmental periods that were present in a sample of students over four elementary school grade level in a Canadian sample. This study hopes to expand upon this line of research and provide evidence to support the existence of a DFM in a more ethnically diverse sample of American elementary school students, as well as increase the understanding of between group differences in relation to social functioning with peers and teachers.

Table 1

Summary of Studies of Dual-Factor Model of Mental Health

Study	Sample	CMH	Vulnerable	SBC	Troubled	Outcomes Examined
Greenspoon & Saklofske (2001) *	407 Canadian 3rd-6th grade students (*M* = 10.5 years old)	13.0 - 25.3%	7.4%	10.81%	16.0 - 25.5%	Self-esteem, locus of control, relationship quality, self-perception
Suldo & Shaffer (2008); Suldo et al. (2011)	347 American 6th-8th grade students (*M* = 12.96 years old)	57.0%	13.0%	13.0%	17.0%	Teacher support, classmate support, social problems, academic achievement, academic attitudes, physical health
Antaramian et al. (2010)	764 American 7th -8th grade students	66.9%	8.1%	17.3%	7.7%	School involvement, academic achievement, Cognitive engagement, emotional engagement, behavioral engagement
Eklund et al. (2011)	246 American students (18-25 years old)	78.0%	9.0%	4.0%	9%	Maladaptive Behaviors (attention problems, hyperactivity, alcohol abuse, locus of control), hope, gratitude
Lyons et al. (2012)	990 American 6th-12th grade students (*M* = 14.26 years old)	64.0%	7.0%	9.0%	20.0%	Stressful life events, emotional support, extraversion, neuroticism

Table 1 (continued)

Renshaw & Cohen (2014)	1,356 American college students (17-51 years old; *M* = 19.18 years old)	61.4%	18.7%	4.8%	15.1%	Interpersonal connectedness, academic achievement
Antaramian (2015)	561 American college students (*M*= 19.5 years old)	47.4%	26.0%	5.5%	21.0%	Academic achievement, engagement, intrinsic motivation
Suldo et al. (2016)	500 American 9th-11th grade students (14 to 18 years old; *M*= 15.27 years old)	62.2%	11.4%	11.4%	15.0%	Academic achievement, academic attitudes, physical health, identity development, teacher support, classmate support, romantic relationship satisfaction, peer victimization

Note. CMH = Complete Mental Health. SBC = Symptomatic but Content.
*Analyses conducted to create mental health groups were completed twice (once to categorize SBC, and once to categorize Vulnerable), and cases that were border line were eliminated. Authors indicated there might be some overlap between classifications yielded from the two analyses. Percentages of students in groups do not equal 100% because 41.8 to 60.2% of cases were eliminated during attempts to sharpen contrasts between groups.

Table 2

Summary of Measures of SWB, Psychopathology, and Cutoff Scores Used in Extant Studies of the Dual-Factor Model

Study	Measure of SWB	Cutoff score	Measure of Psychopathology	Cutoff Score
Greenspoon & Saklofske (2001)	Life satisfaction: MSLSS (Huebner, 1994) **Note*: no indicator of affect	Identifying Vulnerable Group- Split Method: 40, 20, 40% of sample: High SWB: > 40% Low SWB: < 40% Identifying SBC Group: 35, 30, 35% of sample High SWB: > 35% Low SWB: < 35% *Note.* Several cutoff scores evaluated to define SWB criteria used to form mental health groups, and cases at or near the mean (20 – 30%) were eliminated	Internalizing: BASC-SRP (Reynolds and Kamphaus, 1992) Internalizing behaviors composite of social stress, anxiety, and depression subscales. Externalizing (hyperactivity): BASC-TRS: Hyperactivity subscale. **Note*: Narrowband measure of broad externalizing construct.	Identifying Vulnerable Group- Split Method: 40, 20, 40% of sample. High PTH: > 40% on BASC-SRP Internalizing Low PTH: < 40% on BASC-SRP Internalizing Identifying SBC Group: 35, 30, 35% of sample. High PTH: > 35% on BASC-TRS Hyperactivity Low PTH: < 35% on BASC-TRS Hyperactivity *Note.* Several cutoff scores and BASC scales evaluated

Table 2
(continued)

Suldo & Shaffer (2008); Suldo et al. (2011)	Life satisfaction: SLSS (Huebner, 1991b) Affect: PANAS-C (Laurent et al., 1999)	SWB composite score (standardized life satisfaction + standardized positive affect – standardized negative affect) Low SWB: ≤ 30th percentile on the SWB composite variable Average/high SWB: > 30th percentile on composite SWB variable	Internalizing: The Youth Self-Report Form of the Child Behavior Checklist (YSR; Achenbach & Rescorla, 2001): internalizing symptoms composite Externalizing: TRF (Achenbach & Rescorla, 2001): externalizing symptoms composite	Low PTH: Internalizing T score <60 and Externalizing T score <60 High PTH: Internalizing T score ≥ 60 or Externalizing T score ≥ 60
Antaramian et al. (2010)	Life satisfaction: SLSS (Huebner, 1991b) Affect: PANAS-C (Laurent et al., 1999)	SWB composite score (calculated via same method used in Suldo & Shaffer, 2008) Low SWB: T ≤ 40 (≤ 16th percentile) on the SWB composite variable	Internalizing: SRCS (Causey & Dubow, 1992): internalizing subscale Externalizing: SCRS: externalizing subscale *_Note_: no informant report of problems; atypical measure of psychopathology	Low PTH: Internalizing T score < 60 and Externalizing T score < 60 High PTH: Internalizing T score ≥ 60 or Externalizing T score ≥ 60

Table 2
(continued)

		Average/high SWB: T > 40 (> 16th percentile) on composite SWB variable		
Eklund et al. (2011)	Life satisfaction: BMSLSS (Seligson, Huebner, & Valois, 2003) *_Note_: no indicator of affect	Low SWB: BMSLSS mean scores < 4.0 High SWB: BMSLSS mean scores ≥4.0	Internalizing: BASC-2-ESI (Reynolds & Kamphaus, 2004) BASC-2-PA (Reynolds & Kamphaus, 2004) Externalizing: Locus of Control, Attention Problems, Hyperactivity, and Alcohol Abuse subscales *_Note_: no informant report of problems	Low PTH: BASC-2 ESI t scores < 60 and/or PA > 40 High PTH: BASC-2 ESI t scores > 60 and/or PA < 40 *_Note_: ESI; composite of social stress, anxiety, depression, sense of inadequacy, self-esteem, and self-reliance
Lyons et al. (2012)	Life satisfaction: SLSS (Huebner, 1991b) *_Note:_ no indicator of affect	Low SWB: One SD below the sample mean High SWB: Participants who did not meet the criteria for low SWB were labeled as having high SWB	Internalizing: YSR Internalizing Composite (Achenbach, 1991) Externalizing: YSR Externalizing Composite (Achenbach, 1991) *_Note_: No informant report of problems	Low PTH: Participants that did not meet the criteria for high PTH were labeled as having low PTH High PTH: One SD above the sample mean on either

Table 2
(continued)

				externalizing or internalizing behaviors
Renshaw & Cohen (2014)	Life satisfaction: QLI-BV-GLSS--(Lehman, 1995) *_Note_. Eliminated items on this subscale that were not specific to study domains. No indicator of affect	Low SWB: QLI-BV-GLSS T score ≤ 29 High SWB: QLI-BV-GLSS T score ≥ 30	Internalizing: BSI-18 (Derogatis, 2004): Composite score from anxiety, depression, and somatization subscales to represent multidimensional distress *_Note_: No informant report of problems or measure of externalizing symptoms.	Low PTH: Multidimensional distress T score ≤ 69 High PTH: Multidimensional distress T score ≥70
Antaramian (2015)	Life satisfaction: SWLS (Diener, 1985) Affect: PANAS (Watson et al., 1988	SWB composite score (calculated via same method used in Suldo & Shaffer, 2008) Low SWB: < 50th percentile on the SWB composite variable Average/high SWB: ≥ 50th percentile on composite SWB variable	Internalizing (depression): CES-D (Radloff, 1977) Externalizing (aggression): AQ- externalizing symptoms composite (Buss & Perry, 1992) *_Note_: no informant report of problems. Narrowband measures of broad constructs.	Low PTH: Internalizing T score <60 and Externalizing T score <60 High PTH: Internalizing T score ≥ 60 or Externalizing T score ≥ 60

Table 2
(continued)

Suldo et al. (2016)	Life satisfaction: SLSS (Huebner, 1991b) Affect: PANAS-C (Laurent et al., 1999)	SWB composite score (calculated via same method used in Suldo & Shaffer, 2008) Low SWB: < 26.4th percentile on the SWB composite variable Average/high SWB: ≥26.4th percentile on composite SWB variable.	Internalizing: BASC-2-SRP-A; internalizing composite (Reynolds & Kamphaus, 2004) Externalizing: BASC-2 TRS; Externalizing Composite (Reynolds & Kamphaus, 2004)	Low PTH: Internalizing T score < 60 and Externalizing T score <60 High PTH: Internalizing T score ≥ 60 or Externalizing T score ≥ 60

Note. SWB = Subjective well-being. PTH = Psychopathology. SBC= Symptomatic but Content. MLSS= Multidimensional Students' Life Satisfaction Scale**.** BASC-SRP= Behavior Assessment System for Children Self Report of Personality. BASC-TRS= Behavior Assessment System for Children, Teacher Rating Subscale. SLSS= Students Life Satisfaction Scale. PANAS-C= Positive and Negative Affect Scale. YSR= The Youth Self-Report Form of the Child Behavior Checklist. TRF= Teacher Report Form BASC—2-ESI= Behavior Assessment Scale for Children- Second Edition Emotional Symptoms Index. SRCS= The Self-Report Coping Scale. YSRCBC= Youth Self-Report of the Child Behavior Checklist. BMLSS= Brief Multidimensional Student's Life Satisfaction Scale. BASC-2-ESI= Behavior Assessment Scale for Children- Second Edition Emotional Symptoms Index. BASC-2-PA= Behavior Assessment Scale for Children- Second Edition Personal Adjustment Score. QLI-BV-GLSS=Quality of Life Interview, Brief Version-Global Life Satisfaction Subscale. BSI-18=Brief Symptom Inventory-18. SWLS= Satisfaction with Life Scale. CESDS= Center for Epidemiologic Studies for Depression Scale. AQ= The Aggression Questionnaire. BASC-2-SRP= Behavior Assessment System for Children-Self Report of Personality Form.

Limitations and other research on DFM. Doll (2008) indicated that the Dual-Factor Model could contribute to the development of interventions to address the growing concern for student's mental health. However, recent applications of the model have failed to address the fundamental differences between the two constructs that contribute to psychopathology: externalizing and internalizing symptoms. In the initial investigation of the DFM, Greenspoon and Saklofske (2001) examined these forms of problems separately and indicated that Vulnerable students were characterized by a lack of internalizing symptoms (whereas the Troubled students to whom they were compared had high levels of internalizing behavior) whereas Symptomatic but Content students were characterized by high levels of externalizing symptoms, in particular hyperactivity. Several of the more recently published studies (Antaramian, 2015; Antaramian et al., 2010; Lyons et al., 2012; Suldo & Shaffer, 2008; Suldo et al., 2016) have examined these two factors under the combined label of psychopathology, in that demonstrating clinical levels of elevated symptoms in the internalizing *or* externalizing domains culminates in a "high psychopathology" status. The use of a categorical analysis limits the implications of the findings of this study as some of the students may be categorized into a specific mental health groups and may have symptoms that are similar to other group classifications. However, this could contribute to understanding if one form of behaviors is contributing to a greater increase or decrease in feelings of subjective well-being within a mental health group. This notion was supported by Renshaw and Cohen (2014) as they indicated the importance of examining a two-continua model of mental health, as opposed to a dichotomous, categorical analysis simply based on the levels of a single indicator.

Doll (2008) also noted that examining the association between internalizing and externalizing disorders is valuable to distinguish if one of these factors is more predictive of

levels of SWB. Another limitation of this body of research is the fact that only one study has examined an elementary school population (Greenspoon & Saklofske, 2001). Many studies have focused on adolescents and young adults. Due to the variability that has been seen between the mental health groups in other studies, it is vital to reexamine this population to gain understanding of the dual-factor model of mental health in elementary school students. Additionally, the participants from Greenspoon and Saklofske (2001) were all from Canadian elementary schools, which makes the results less generalizable to the United States of America. Thus, examining the model in another nationality is warranted. Also, many of the samples that have been used to examine this model have lacked diversity and equal distribution of gender. Examining this model in an ethnically diverse population could lead to more generalizable results, as the previous samples had primarily been Caucasian students and convenience in nature. This study hoped to serve as an initial examination of the quadrants in an elementary school population that is diverse.

A study completed by Thalji (2012) sought to examine the differences in the levels of various forms of mental health problems that were exhibited within the Symptomatic but Content group and the Vulnerable groups. As previously described (see Suldo, Thalji-Raitano, Kiefer, & Ferron, 2016), analyses of a sample of 500 high school students indicated the following group distributions: CMH (62.0%), SBC (11.4%), Troubled (15%), and Vulnerable (11.4%). Results from additional analyses indicated that those students that were identified as SBC had decreased internalizing problems (self-reported) as compared to students identified as troubled, but greater levels of externalizing behaviors (teacher-reported). Thalji (2012) concluded that the students in the SBC group likely maintain a positive outlook on their life and maintain the perception they are experiencing a successful life. This perception is typically observed in students with ADHD

and referred to as illusionary bias (Evangelista et al., 2008; Jia, Jiang, & Mikami, 2016). Taken together with Greenspoon and Saklofske's (2001) finding that hyperactivity best discriminated SBC students, it is likely that this subgroup that experiences high SWB in tandem with high psychopathology exhibits externalizing (versus internalizing) forms of distress.

In support of that notion, Thalji (2012) also found that those students who were identified as Vulnerable had comparable levels of anxiety, depression, and social stress as compared to adolescents identified as SBC. The distinguishing factor between the two groups was that those in the SBC group reported higher scores on the scales that were used to assess psychopathology: the BASC-2 Self-Report of Personality internalizing composite score and BASC-2 Teacher Report externalizing composite score. Based on these findings, Thalji (2012) advocated for reexamining the distinction of those in the vulnerable group being labeled as "symptom free" (p. 148), as perhaps they are subthreshold but still elevated in relation to their peers with a complete mental health status. Regarding students classified into the troubled mental health group, Thalji (2012) found that an extremely large portion of the group (95%) displayed clinically significant levels of internalizing problems, which were more specifically described as the presence of elevated symptoms of depression (76%) and anxiety (60%). These adolescents also reported higher scores on the negative affect scale of the PANAS-C. Such findings from this study illustrate the importance of attempting to further distinguish the types of psychopathology that are common characteristics and symptoms within each of the four mental health groups that are yielded by the DFM. Given Thalji's work focused on high school students, a comparable investigation of the specific mental health features within the four groups of *younger children* is warranted.

Defining Mental Health in Elementary School Students

Since the turn of the 21st century, children, families, and society have changed across a variety of social-cultural domains. There are increasing economic and social pressures, a lack of community involvement which facilitates growth in children's emotional, moral, and social development, which has been linked to decreased health (Greenberg, et al., 2003; U.S. Department of Health and Human Services, 2001; Weissberg et al., 2003). Research has indicated that approximately 20% of children will be diagnosed with some form of a mental health disorder at some point during their development (American Psychological Association, 2013; Merikangas et al., 2010; U.S. Department of Health and Human Services, 1999). Multiple studies have indicated that of the students who require mental health services, only 20% have access to services (Kataoka et al., 2003; Kataoka, Zhang, & Wells, 2002), but some research has noted the majority of students who have mental health issues do receive treatment to address these concerns (Langley, Santiago, Rodriguez, & Zelaya, 2013). Many of those students who receive services, do so in the school setting (Merikangas et al., 2011; Calear & Christensen, 2009). This champions the need for mental health services to be implemented in educational settings, in elementary school, to utilize a preventative framework through providing early intervention to those students that are identified at risk, early in their schooling.

The probability of being diagnosed with a psychopathological disorder increases with age throughout a lifetime (Merikangas et al., 2010). This trend increases significantly during the adolescent years from 13 to 18, particularly with substance abuse and the onset of mood disorders. However, psychopathology onset does have a presence in in the early years. In a study of 10,123 adolescents that sought to examine the life time prevalence of psychopathology, approximately one fourth of children met the criteria for an anxiety disorder by the time they

reached 9 years old (Merikangas et al., 2010). The trend for anxiety increases upward to a 35% lifetime prevalence through the teenage years. Greenberg and colleagues (2001) noted that schools are ideal places to implement mental health services from a preventative standpoint because all children can receive some services when implemented at a large scale, Tier 1 level. Thus, universal and wide spread interventions for mental health are vital to eliminate or reduce these early on set psychopathological symptoms.

Schools are under immense pressure for academic success as evidenced on high-stakes tests and graduation benchmarks, which has led to inefficiency and uncoordinated efforts to implement mental health services in schools (Greenberg et al., 2003). While there are a variety of promotion programs (e.g., drug and alcohol awareness) that are implemented, some take time away from other forms of mental health services such as interventions to foster positive outcomes in all students (versus prevent a specific problem). Ethnic minority populations are generally misrepresented in the samples of students who receive services, thus providing these services in schools is vital in response to extraneous factors that could be negatively impacting a child's mental health and in turn other factors across a variety of domains (e.g., academic performance, self-worth, etc.; Bledsoe, 2008).

Poor mental health has been associated with increased office referrals, suspensions, and disciplinary actions in general (Ballard, Sander, & Klimes-Dougan, 2014). When mental health services *are* implemented in schools, results have indicated increased emotional well-being, interpersonal skills, coping ability, problem solving, and improved behavior (Ballard et al., 2014; Reback, 2010). In terms of wellness promotion, increased levels of SWB have been associated with decreased levels of psychological disorders, loneliness, anxiety, depression, and school-discipline problems (McKnight, Huebner, & Suldo, 2002).

Social Functioning and Mental Health

Attachment theory indicates the importance of emotional support from others is linked to mental health throughout the course of a person's life (Bowlby, 1969). Establishing these relationships during youth is important to learn and have the support to overcome adverse experiences early in life. Specifically, higher quality social relationships are associated with increased relationship satisfaction (Lyubomirsky, King, & Diener, 2005) and increased levels of physical health (Abel & Kruger, 2010).

As students' progress through their schooling, they are subjected to a variety of circumstances that could be related to social maladjustment (Baker, 2006). Social support from peers, classmates, teachers, and parents has been attributed to positive outcomes during this critical developmental period (Bowker et al., 2011). Children initially seek social support from parents, however, as they age they begin to use other sources, such as friends. This is particularly salient in same-age, same gender friendships (Adams et al., 2011; Rose et al., 2012). By establishing friendships, children enhance their social skills and their ability to overcome undesirable experiences independently, without the support of their parents (Adams et al., 2011; Glick & Rose, 2011). Children who experience negative outcomes generally report having less friends and, in turn, less social support, and this trend is stable over time (Peterson et al., 2009). Relationships that are high in social support have been associated with decreased rates of suicidal ideation and depression (Kerr, Preuss, & King, 2006).

Peer Relationships

Healthy relationships with classmates (i.e., interactions characterized by being high in quality and supportive) are associated with greater SWB (Suldo, 2016). It is also vital to examine peer victimization and the influence it has on the mental health of students as a large

portion of students (between 20% -30%) have been the subject of peer victimization (i.e., bullying; Nansel et al., 2001; Storch & Masia-Warner, 2004). Those that are the subject of peer victimization have an increased risk of depression, anxiety, low self-esteem, substance abuse, and truancy as they age. Additionally, these same students also have reported difficulties with academics, classroom engagement, and overall adjustment (Buhs, Ladd, & Herald-Brown, 2010). Negative experiences that limit a child's ability to make friends (e.g., social rejection) can lead to increased loneliness and less than desirable levels of SWB (Suldo, 2016).

Both age and gender are factors that have been associated with the quality of peer relationships. Swords, Heary, and Hennessy (2011) indicated that children became more accepting over time of their peers that displayed symptoms of depression and ADHD. O'Driscoll et al. (2012) found that in a sample of adolescents, depression is more widely accepted than ADHD. However, boys reported greater positive regard of their peers with ADHD, as opposed to girls, which the authors attributed to the increased prevalence of ADHD symptoms and behaviors in boys. In this same sample, females had neutral evaluation of their peers that displayed symptoms of depression, which the authors again attributed to the higher prevalence of this behavior in females.

Student-Teacher Relationships

Ensuring proper development throughout elementary school is critical in fostering positive long-term outcomes as students learn academic concepts and develop the cognitive skills necessary for school (Baker 1999, 2006). By the time students reach the upper grades of elementary school, they have already developed a concept of themselves and their academic abilities (Baker, 1999). One of the critical predictors of success in school, regarding both academic progress and behavior has been the relationship between a student and his or her

teacher, due to the vast amount of time that the students spend with their teacher (Baker, Fisher, & Morlock, 2008). Students' relationship with their primary teacher has been predictive of desirable outcomes such as increased interest and satisfaction with school, motivation, expectations of success, academic success, lower levels of aggression, and greater feelings of SWB (Roeser et al., 1996; Wentzel, 1998). High quality relationships between students and teachers have also been found to preserve students' school and social interest, which is associated with higher grades and higher quality peer relationships. This is particularly important to establish early, as students' interest in school generally decreases with age. Hughes et al. (1999) reported that a high-quality teacher-student relationship was predictive of decreased externalizing behaviors and that the quality of the relationship between the teacher and student was predictive of the quality of the teacher and student at the next grade level.

The effects of early teacher-student relationships tend to persist over time. Hamre and Pianta (2001) found that quality of the relationships between students and kindergarten teachers was predictive of both grades and standardized test scores through fourth grade. During adolescence, increased feelings of relatedness with teachers has been associated with increased success expectations, motivation, study/work habits, and interest in school (Wentzel, 1998). Pianta (1999) reported these relationships are vital for a healthy development to ensure that students can fully engage in school. This relationship provides students with a sense of emotional security, which is needed in a school environment based on all the extraneous factors which could impact mental health and well-being. Developing a high-quality relationship with a non-family member can lead to increased emotional and social competencies, which may be difficult to obtain outside of the home setting (Pianta, 1999). However, Baker et al. (2008) indicated that

a teacher could serve as a protective factor and assist students with these troubling behaviors adjust to school.

There are several extraneous factors that are associated with variability with this relationship. Baker (2006) indicated that due to the cohort nature of elementary schools, as students' progress through grades, and generally have a new teacher each year, this relationship must be reestablished at the beginning of each new school year, and thus this cannot be identified as a consistent factor between different grades. Also, Reinke et al. (2011) indicated that teachers have self-reported not feeling adequately trained to address the mental health needs of students in their classroom. Most teachers believed that addressing the mental health concerns of students is in the domain of the school psychologist (Reinke et al., 2011).

The relationship between students and their teachers has been found to be beneficial to students who exhibit internalizing or externalizing behaviors (Baker et al., 2008). Unfortunately, the disruptive behaviors that characterize students with externalizing behaviors generally reduces the quality to the relationship due to the frequency of the negative interactions that take place in the classroom. Murray and Murray (2004) indicated that less is known about the relationship between students that display internalizing behaviors and their teachers. However, these researchers indicated that aside from the closeness in the relationship, there were few differences (e.g., academics, behavior) between those peers who do not exhibit symptoms of psychopathology and their relationship with their teacher and level of functioning.

It is also important to examine the student-teacher relationship regarding the outlook of peers. Lower quality student-teacher relationships have been associated with increased levels of victimization (Wang, Leary, Taylor, & Derosier, 2016). This trend has been attributed to the fact that if a student does not believe his or her relationship with their teacher is high quality, he or

she may not seek out support if found to be the subject of bullying from their peers. Children's self-perception and the perception of their peers can be influenced by their teacher's attitude, body language, tone, and non-verbal methods of communication (Babad & Taylor, 1992; White & Jones, 2002). Given the salience of classroom relationships to outcomes in a host of domains, this study examined associations between mental health status and social functioning, in part to better understand implications of mental health groups as yielded from a dual-factor model, on students' relationships with classmates and teachers.

Conclusion and Study Purpose

The implementation of mental health services in school is critical for student success. Recent literature has indicated students who meet criteria for Complete Mental Health have greater scores on indicators of positive functioning (e.g., physical health, academic competence, etc.) than those in the other mental health groups which have some presence of psychopathology (i.e., Troubled, Symptomatic but Content) or lack positive indicators of wellness, otherwise referred to as subjective well-being (i.e., Vulnerable; Antaramian, 2015; Antaramian et al., 2010; Greenspoon and Saklofske, 2001; Eklund et al., 2011; Renshaw & Cohen, 2014; Suldo & Shaffer; 2008; Suldo et al., 2016). Extant literature has examined the DFM within a variety of samples, yet there has been limited research conducted in elementary school samples. Thus, little is known regarding the DFM in this population regarding proportion of children likely to be in each group when calculated without eliminating cases to sharpen differences between groups (c.f. Greenspoon & Saklofske, 2001). Doll (2008) has critiqued the model and has indicated it is vital for a conceptualize framework which allows for the examination of the specific symptoms of psychopathology (i.e., externalizing and internalizing problems) separately. Thalji's findings (2012) with high school students have warranted further research to obtain a more

comprehensive understanding of the differences between groups regarding specific aspects of mental health, to better understand the model and its implications. Accordingly, this study expanded the knowledge of the primary differences between the four mental health groups within the model, specifically indicating what symptoms of psychopathology have a greater presence within each mental health group. Finally, given the salience of classroom relationships to student achievement, this study explored differences in social outcomes that may exist between each of the mental health groups. In sum, the current study contributed to the literature by examining (a) the DFM in an American elementary school student sample that was diverse in terms of demographic features, (b) the impact mental health group status had on social functioning regarding relationships with classmates and teachers, and (c) the psychopathology symptom make-up within each of the four mental health groups.

CHAPTER THREE:

METHODS

The current study conducted secondary analyses on an archival data set (Hearon, 2017) to investigate the presence of the Dual Factor Model of Mental Health in a sample of elementary school students. The primary outcome variable of this study was the impact of mental health group status on participant's social functioning with their classmates and teachers. Also, this study examined between group differences in psychopathology levels. This chapter provides an overview of the participants, methods by which data were collected, and how participants were chosen to be a part of the study. Next, data collection procedures and specific information on the measures that were used to obtain the data are discussed. Finally, an overview of the statistical analyses is reviewed.

Participants

The archival data set that was analyzed for the current study was a component of a larger research study that implemented a multitarget, classwide positive psychology intervention in a sample of elementary school students during the Fall of 2015 (Hearon, 2017). The intervention that was implemented within this study was designed by Suldo, Hearon, Bander, and colleagues (2015). The purpose was to examine the effect of a universal positive psychology intervention (a classwide version of the Well-Being Promotion Program, modified for delivery to elementary school students; Suldo, 2016) on students' emotional and social outcomes, which were measured by levels of SWB, engagement, and classroom social support. Data collection occurred at multiple time points (waves) including: August (pre-intervention; Time 1), December (post-

intervention; Time 2), and March/April (follow-up for intervention condition, and post-intervention for delayed-treatment control sample; Time 3). This study involved an analysis of the 2nd wave of data, which were collected between December 8-15, 2015.

The total sample included in the analysis were 178 elementary school students. The sample is comprised of 79 students enrolled in one of seven, 4th grade classes and 99 students enrolled in one of seven, 5th grade classes in a large public-school district in Florida. Students at the school where the larger intervention study was conducted were diverse in terms of race and ethnicity (55.0% Caucasian, 22.5% Hispanic, 8.9% African-American, 3.15% Asian, 9.67% multiracial), and in terms of socio-economic status (51.4% of students were eligible for free or reduced-price lunch; National Center for Education Statistics, 2017). Parental consent (Appendix A) was obtained prior to the collection of any evaluative data. Students also completed an assent form (Appendix B) and had the choice to refuse to participate in the program evaluation if they did not feel comfortable or otherwise did not desire to take part.

Measures

Demographic Form. The demographics form (see Appendix C) included questions that pertained to students' age, grade, gender, ethnicity, free/reduced lunch status, and parental marital status. Each of the items on the demographic form included multiple choice response options. Participants completed this form after assenting to participate in the study initiated by Hearon (2017). The measures utilized in this study are summarized in Table 3.

Subjective Well-Being (SWB)

Students' Life Satisfaction Scale (SLSS; Huebner, 1991a, 1991b). The SLSS is a 7-item self-report measure of youth's global life satisfaction (see Appendix D). Using a 6-point Likert Scale (1 = *strongly disagree* to 6 = *strongly agree*), participants rated statements in relation to

their life at the current time (e.g., *"*My life is going well," "My life is just right"). This measure included two items that were reverse scored. Higher mean scores indicate greater global life satisfaction.

This measure was chosen by Hearon (2017) as the indicator of students' life satisfaction due to its widespread usage (it is considered the gold standard measure of global life satisfaction in studies of youth SWB) and because it possessed sufficient support for reliability and validity in elementary school students. Several studies have reported that this scale had strong internal consistency estimates at or above .82 as well as high correlations with other measures of students SWB (Bender, 1997; Proctor, Linley, & Maltby, 2009). Regarding support for validity among elementary age youth, a study completed by Hoy, Suldo, and Raffaele-Mendez (2013) indicated that this measure had sufficient internal consistency ($\alpha = .79$) when utilized in a sample of 148, 4th and 5th grade students. This measure is summarized in Table 3.

Ten-item Positive and Negative Affect Schedule for Children (10 item PANAS-C; Ebesutani et al., 2012). The 10-item PANAS-C (Ebesutani et al., 2012) is an abbreviated version of the 27-item PANAS-C (Laurent et al., 1999) that examines children's positive and negative affect (see Appendix E). Participants were asked to respond to statements on a 5-point scale (1 = *very slightly or not at all* to 5 = *extremely*) pertaining to their current feelings of positive emotions (i.e., happy, proud, joyful, cheerful, lively) and negative emotions (i.e., sad, scared, mad, afraid, miserable). The total scores are comprised of the separate averages of both the positive and negative affect scales.

Laurent et al. (1999) created the 27 item PANAS-C to use in studies with children and adolescents, to assess the occurrence of positive and negative emotions in adults (PANAS; Watson, Clark, & Tellegen, 1988). The PANAS-C original sample was comprised of students in

4th through 8th grade. Both the Positive Affect (PA; α = .89) subscale and Negative Affect (NA; α=.92) subscale have high internal consistency (Laurent et al., 1999). The PA subscale also has acceptable construct validity compared to the Children's Depression Inventory (*r* = -.42; Laurent et al., 1999). Laurent and colleagues (1999) factor analysis for the PANAS-C indicated strong support for construct validity as the PA subscale items and NA subscale items loaded on different factors. Suldo and colleagues (2014) reported adequate alpha levels for both the positive affect (α =.90, .92, .95) and negative affect (α =.92, .94, .93) across three-time points, respectively, in a sample of 40 students with an average age of 11.43 years old.

A ten-item version of this measure was validated by Ebesutani and colleagues (2012) in a sample of 799 children ages 6-18. The researchers reported adequate alpha levels for both the PA (α = .86) and NA (α = .82) scales. Items from the original 27 item measure that had weak validity were eliminated based on item response theory. Both the PA and NA subscales are comprised of the five items that were the most effective at distinguishing students in need of mental health services. This was determined primarily because of the measures convergent and divergent validity, which Ebesutani and colleagues (2012) noted adequately distinguished between youths with clinical levels of anxiety and depression. Due to both its brevity and quality psychometric properties, this measure was chosen as the primary measure for positive and negative affect, vital constructs of SWB. This measure is summarized in Table 3.

Psychopathology

The Student Internalizing Behavior Screener (SIBS) and Student Externalizing Behavior Screener **(**SEBS) were administered simultaneously to teachers during student self-report data collection. Both the SIBS and SEBS in combination served as a measure of participants' levels of psychopathology as elevated levels on either measure indicated increased levels of

psychopathology. Also, each scale was analyzed individually to answer the third research question pertaining to the psychopathological make up within the DFM. These measures have also been used as outcome measures in intervention studies and been shown to be sensitive to change (Cook et al., 2015). Hartman, Gresham, and Byrd (2017) noted that administering both measures simultaneously has yielded psychometrically sound results. Specifically, in a diverse sample (68.2% free or reduced lunch eligible; 37.7% White) of 154 elementary school students (1^{st}- 5^{th} grade) the combined SIBS and SEBS score had a strong correlation (r = .82) with the BASC-2 BESS (Kamphaus & Reynolds, 2007), a universal screening measure which identifies behavioral and emotional strengths and weaknesses. Also, regarding rates of at risk identification, the combined SIBS and SEBS and the BESS similarly identified 88.3% (N = 136) of students in the sample (Hartman et al., 2017). The internal consistency across multiple time points were strong for the combined measure (Time 1, α=.84; Time 2, α=.92). Last, from a social validity standpoint, teacher ratings on the Usage Rating Profile-Assessment (URP-A; Chafouleas et al., 2012) indicated the measure was perceived as feasible and usable, as average items fell on the "agree" range of the acceptability and feasibility subscales.

Student Internalizing Behavior Screener (SIBS; Cook et al., 2011) The SIBS is a 7-item, measure of apparent student internalizing behavior that was completed by the participant's teacher (see Appendix F). The items on this measure are based on the most frequent symptoms seen in those with internalizing disorders. Actions that are common indicators of internalizing problems include: (a) complaints about being sick or hurt, (b) seems sad or unhappy, (c) withdrawn, (d) clings to adults, (e) appears nervous, worried, or fearful, (f) is bullied by peers, and (g) spends time alone. This measure was set on a 4-point Likert scale (1= *never* to 4 = *frequently/almost always;* Cook et al., 2011). During the study by Hearon (2017), teachers were

asked to indicate the likelihood of the behaviors occurring for each student in the sample. Cook and colleagues (2011) noted that the original measure was set on a four-point Likert scale (0 = *never* to 3 = *frequently/almost always*). Therefore, variables were transformed to mirror the original values established by Cook and colleagues (2011; i.e., 7 was subtracted from scores in this data set).

This measure was tested for psychometric properties on a sample of 1,357 elementary school participants in 1st through 5th grade (Cook et al., 2011). The median age was 8.6 years old in a sample of participants that was racially diverse: White (48%), Hispanic (20%), and African American (13%). Additionally, 60% of the students in this sample were receiving free or reduced-price lunches. In sum, 55 total teachers (M = 38.4 years old, 9 years of teaching experience) completed ratings of the participants in the sample. The internal consistency was adequate ($\alpha = .78$) and the test-retest reliability across a 2-month interval (i.e., six weeks into the academic year [October] and 2 months later [November] was satisfactory [$r = 0.74$]). Cook (2016, November 17) also reported that SIBS scores correlated strongly with the TRF Internalizing scale ($r = .82$)

In previous studies, decisions for cutoff scores indicating the portion of students classified as having clinically elevated (teacher rated score ≥ 8) or low levels of psychopathology (teacher rated score < 8). In the current study, cutoff scores were made in consideration of the procedures indicated in the technical manual for this measure (Cook, 2016, November 17). A cutoff score of 8 was noted by Cook to be optimal because of the decreased rate of false positives (approximately 1%) in combination with the high hit rate (true positive = 86%). In a sample of 1,357 students, 99 participants were found to have clinically elevated scores for internalizing behaviors by the TRF Internalizing scale. By using the established criteria for the SIBS, 85 of

the 99 participants with elevated Internalizing scores (on the TRF) were identified to be at risk on the SIBS also (86% accuracy). Those scores below 8 indicated a greater likelihood of false positives, while scores above 8 were associated with increased difficulties in identifying students as "at risk" for internalizing behaviors. Last, the Wilcoxon estimate of area under the ROC curve, when utilizing a cutoff score of 8, was 0.94411 which the author indicated was sound. The SIBS served as one of the measures of participants' levels of psychopathology, specifically the indicator of internalizing behaviors, and is summarized in Table 3.

Student Externalizing Behavior Screener (SEBS; Cook, 2012; Cook, 2016, November 17; Cook, Volpe, & Gresham, 2012). The SEBS is a 7-item measure of observed student externalizing behavior that was completed by each participant's teachers. The items used in this screener are based on frequent symptoms seen in youth that display externalizing behaviors (See Appendix F). Actions considered common indicators of externalizing behaviors are: (a) having difficulty sitting still, (b) disrupts class, (c) lies to avoid trouble, (d) easily angered, (f) bullies others, (g) fights or argues with peers, (h) defiant and/or oppositional behavior towards adults. This measure was set on a 4-point Likert scale (1= *never* to 4 = *frequently/almost always;* Cook, 2016, November 17). During the study by Hearon (2017), teachers were asked to indicate the likelihood of the behaviors occurring for each student in the sample. Cook and colleagues (2012) noted that the original measure was set on a four-point Likert scale (0 = *never* to 3 = *frequently/almost always*). Therefore, variables were transformed to mirror the original values established by Cook (i.e., 7 was subtracted from scores in this data set). Teachers were asked to indicate the likelihood of the behaviors occurring for each student in the sample. This measure was designed for teachers to indicate the likelihood of the described behaviors being displayed by the student in their classroom.

In the initial development by Cook and colleagues (2012) indicated that the internal consistency and reliability were adequate (α=.84-.89). This measure was tested on participants with a median age of 14.2 years old and included the following ethnic groups: White (58%), Latino (16%), African American (14%), and other (12%). In sum, 161 teachers (*M* = 34.2 years old) completed ratings of the participants in the sample. The test-retest reliability across a two-week period was strong (*r*= .88-.92). It was also reported the SEBS correlated strongly with the TRF Externalizing scale (*r*=.87).

Decisions of cutoff scores indicating the portion of students classified as having clinically elevated (teacher rated score ≥ 9) or low levels of psychopathology (teacher rated score <9) in the current study were made in consideration of procedures indicated in the technical manual for this measure (Cook, 2016, November 17; Cook et al., 2012). In a sample of 250 students, 55 of the participants were found to have clinically elevated scores on the TRF Externalizing scale. This cutoff score of 9 has been found to be optimal because of the decreased rate of false positives (approximately 1%). By using the established criteria for the SEBS, 48 of the 55 participants with elevated Externalizing scores (on the TRF) were identified to be at risk on the SIBS also (87% accuracy). Those scores below 9 indicated a greater likelihood of false positives, while scores above 9 were associated with increased difficulties in identifying students as "at risk" for externalizing behaviors. Last, the Wilcoxon estimate of area under the ROC curve, when utilizing a cutoff score of 9, was 0.91 which the author indicated was sound. The SEBS served as one of the measures of participants' levels of psychopathology, specifically the indicator of externalizing behaviors, and is summarized in Table 3.

Social Functioning

Child & Adolescent Social Support Scale (CASSS; Malecki, Demaray, & Elliot, 2000). The CASSS is a 60-item self-report measure of students' perceived support from five primary sources with whom they frequently interact: parents, close friends, classmates, school, and teachers (see Appendix G). Each support subscale measures appraisal, emotional, informational, and instrumental support. For this study, the subscales for the teacher and classmates were analyzed separately. The classmate support subscale was analyzed to measure participant's perceived social support from their classmates. The teacher subscale was analyzed to serve as the indicator of participant's perceived support from teachers. Each subscale was 12 questions in length and higher scores indicated greater levels of support. In a sample of 353 3rd through 6th grade students, Malecki and Demaray (2002) reported that the internal consistency was adequate for both the teacher ($\alpha = .88$) and classmate ($\alpha = .93$) subscales. Regarding validity, these same researchers reported that the CASSS had a moderate correlation (.70) with the Social Support Scale for Children (Harter, 1985). The CASSS is further summarized in Table 3.

Teacher-Student Relationship Inventory (TSRI; Ang, 2005). The TSRI is a 14-item questionnaire that examines the teacher's perceived relationship with each of the students in their class (see Appendix H). This measure was set on a 5-point scale (1 = *almost never true* to 5 = *almost always true*). This measure assesses three constructs of the relationship between students and teachers: Conflict, Instrumental Help, and Satisfaction. The Conflict subscale (4 items) measures teacher perceptions of how unpleasant their relationship is with the student. The Instrumental Help (5 items) subscale examines likelihood of a student reaching out for emotional support, help, or advice from the teacher. The Satisfaction subscale (5 items) measures the quality of the relationship between the student and teacher. For the purposes of this study, only

the Instrumental Health and Satisfaction subscales of this measure were used in the analysis, largely due to missing data on the Conflict scales (multiple teachers refused to complete these negatively-worded items). This measure serves as one of the measures of social functioning between participants and teachers. According to Ang (2017, January 14) there is no specific timeline for researchers to abide to for the duration of the relationship being evaluated between students and teachers (e.g., no absolute rules such as "at least six weeks into the school year."). However, it was noted that the evaluating teacher should feel that he/she has ample knowledge of their student. Additionally, Ang (2017, January 14) indicated this measure has been conceptualized on a continuum, as there are no cutoff scores to indicate quality of a relationship between students and teachers.

Regarding the development of the TSRI, the authors indicated high internal consistency for Conflict ($\alpha = .81$), Instrumental Help ($\alpha = .94$), and Life Satisfaction ($\alpha = .84$; Ang, 2005). This measure was developed in sample of 19 teachers who were asked to rate 428 students in 4th through 6th grade. Baroody and colleagues (2014) indicated internal consistency across subscales ranged from .78 to .89 in a sample of 63 5th grade teachers who were asked to rate 387 students. These randomly assigned teachers were employed by 20 different schools, of which 21% were free and reduced priced lunch schools. This measure is summarized in Table 3.

Table 3

Summary of Measures for Variables of Interest in Study

Construct	Measure(s)	Respondent(s)	Scale(s) Analyzed
Subjective Well-Being	Students' Life Satisfaction Scale (SLSS; Huebner, 1991)	Student	Life Satisfaction scale
	10-item Positive and Negative Affect Schedule for Children (10-item PANAS-C; Ebesutani et al., 2012)	Student	Positive Affect subscale Negative Affect subscale
Internalizing Behaviors	Student Internalizing Behavior Screener (SIBS; Cook et al., 2010)	Teacher	Internalizing behavior composite
Externalizing Behaviors	Student Externalizing Behavior Screener (SEBS; Cook, 2012)	Teacher	Externalizing behavior composite
Classroom Social Functioning and Support	Child and Adolescent Social Support Scale (CASSS; Malecki, Demaray, & Elliot, 2000)	Student	Teacher Support subscale Classmate Support subscale
	Teacher-Student Relationship Inventory (TSRI; Ang, 2005)	Teacher	Satisfaction subscale Instrumental Help subscale

Overview of Data Analyses

Several statistical analyses were conducted to provide an explanation for each of the research questions for this cross sectional, causal comparative proposed study. Data for this study were entered by hand in SPSS, checked for errors in the data entry, and screened for any malingering behavior in the participants (e.g., marking the same response for the entire survey). Next, data that were entered were imported into Statistical Analysis Software (SAS).

IRB approval. In an email to this researcher's major professor, the Chairman of the USF IRB (J. Schinka, personal communication, March 23, 2017), confirmed that this researcher (already an approved member of the study staff team that collected the dataset analyzed by Hearon, 2017) did not need to submit an amendment to Pro00023292 (see Appendix I) or submit a separate application to analyze a de-identified version of the dataset in order to conduct post-hoc examinations of the relationships between some study variables for the purposes of this thesis. Dr. Schinka specified that no IRB actions were necessary prior to commencing data analyses because the personnel and risk to participants had not changed (the data were already collected using approved methods and personnel). Accordingly, access to the data set from Hearon (2017) was obtained after successful defense of this researcher's thesis proposal.

Preliminary analyses. Mean, standard deviations, and further descriptive statistics (e.g. Cronbach's alpha, kurtosis, skew, intra class correlation) were calculated for all outcome variables of interest to further examine if any violations of assumptions have transpired. Also, initially descriptive statistics were calculated within each gender to gain a more comprehensive understanding of the differences between boys and girls. Additionally, intraclass correlations were conducted within each of the classrooms to ensure there are not outlying factors; also, between group analyses considered the nested data structure (i.e., groups of children rated by different classroom teachers) with the teacher treated as a fixed effect in the statistical models. Throughout this study, statistical significance for each analysis was determined using an alpha level of .05. The dataset was checked for outliers on the variables of interest. Upon completion of the preliminary analyses, a series of statistical analysis were completed to provide an explanation for the following research questions:

1. Are there representative percentages of elementary school children within each of the four quadrants of Dual-Factor Model of Mental Health, as similarly conceptualized by previous studies?
2. If the Dual-Factor Model of Mental Health is found to exist, are there differences between the four groups in their levels of social functioning, regarding:
    a. Classmate support as indicated by scores on the Child and Adolescent Social Support Scale?
    b. Teacher support as indicated by scores on the Child and Adolescent Social Support Scale and Teacher-Student Relationship Inventory?
3. If the Dual-Factor Model of Mental Health is found to exist, are there differences between the four groups in psychopathology make-up, regarding:
    c. The mean values of externalizing and internalizing behaviors across each of the four mental health groups?
    d. The mean values of externalizing or internalizing behaviors within each mental health group?

To answer the first research question, participants were assigned to one of four mental health groups based on their levels of SWB and psychopathology. Participants were first identified by their levels of psychopathology on the SIBS and SEBS. The percentage of the sample identified as symptomatic based on elevated levels of internalizing and/or externalizing symptoms were obtained. Prior utilization of these measures (Cook, 2016, November 17) referenced T- Scores in the Clinically Significant or At-Risk ranges on either the internalizing ($T \geq 9$) or externalizing ($T \geq 8$) teacher reported measures, indicated elevated levels of psychopathology. However, based on preliminary analyzes, this researcher chose to augment the

scores based on sampling distributions and in reference to corresponding percentages of clinically significant or at-risk percentages which previous DFM studies have utilized (Suldo & Shaffer, 2008, Suldo et al., 2016). Specifically, for girls, T- Scores in the Clinically Significant or At-Risk ranges on either the internalizing ($T \geq 3$) or externalizing ($T \geq 3$) teacher reported measures were utilized. For boys, T- Scores in the Clinically Significant or At-Risk ranges on either the internalizing ($T \geq 4$) or externalizing ($T \geq 7$) teacher reported measures were utilized. This rationale is expanded upon in Chapter 4.

The SWB composite variable was created by first standardizing the scores from both SLSS and the 10-item PANAS-C. To create the SWB variable, z-scores for life satisfaction and positive affect were added together, and negative affect scores were subtracted from that total (identical to procedures in Suldo & Shaffer, 2008). Then, the researcher examined the distribution of the scores for the composite SWB variables. Those scores below the 27.53rd percentile (percentile determined by earlier identification of students with high psychopathology, due in part to the absence of established cutoff points for levels of SWB) were labeled as having low levels of SWB, while those at or above the 27.53rd percentile (i.e., $z = -1.00$) were labeled as having high levels of SWB. Both the SWB and psychopathology variables were then dichotomized to categorize participants within each of the four mental health groups.

Based on the fact this model has only been tested in one sample of elementary school students, the proportions of students within each of the mental health groups were reported in simple descriptive demographic fashion to inform the distribution; inferential statistics and/or confidence intervals were not utilized.

To answer the second research question, a series of four ANCOVA's were calculated to determine if the four-mental health groups differed on each of the outcome measures of social

functioning: individual indicators of support (teacher and classmate subscales of the CASSS) and teacher-rated relationship quality (TSRI; Satisfaction and Instrumental Help subscales) to determine if the main effect is primarily due to group differences. Based on the significant main effect for the social functioning outcome variables, a series of Tukey-Kramer post hoc comparison tests were completed to further distinguish any differences between mental health groups. Adjustments were made for the fixed effect of teacher, which was the only covariate which arose that had an influence on the dependent social functioning variables.

To answer the final research question, a series of ANCOVA's were conducted to determine if the four-mental health groups differed on the levels of psychopathology symptoms (SIBS scores, SEBS scores, and differences between SIBS and SEBS scores). Based on the significant effects between the mental health groups, a series of Tukey-Kramer post hoc comparison tests were completed to further distinguish any differences between mental health groups. Finally, adjustments were made for the fixed effect of teacher, which was the only covariate which arose that had an influence on the dependent psychopathology variables.

CHAPTER FOUR:

RESULTS

This chapter presents the results of the analyses which sought to examine the research questions of interest in this study. To begin, the procedures which were utilized to ensure the validity of the data collected, which were utilized for secondary analyses, are provided. Regarding preliminary statistics, correlations between variables of interest are noted to display the relationship between mental health indicators (i.e., SWB, PTH), specific constructs of psychopathology (i.e., externalizing and internalizing behaviors), and social functioning measures (i.e., CASSS and TSRI subscales). To answer the first research question, procedures were applied to categorize participants into specific mental health groups based on participants' levels of both SWB and psychopathology. The demographic features of students in the resulting mental health groups are also described. Next, results of a series of ANCOVAs and post hoc comparisons which were utilized to indicate if DFM group membership was predictive of social functioning with both teachers and classmates are included. Next, a pair of ANOVAs and post hoc comparisons were completed to compare the levels of psychopathology (i.e., externalizing and internalizing behaviors) between each of the four mental health groups. Finally, results of a series of dependent measure *t*-tests are included to determine if differences in psychopathology (i.e., externalizing and internalizing behaviors) were found within each of the four DFM mental health groups.

Data Screening

Data entry for this study was part of a larger study which evaluated a 10-week, multicomponent, positive psychology intervention in an elementary school sample of 4th and 5th grade students, across 14 classrooms (only 13 classrooms reported in Hearon, 2017 due to different class-level exclusion criteria in the larger program evaluation). Minimum and maximum values of all composite variables examined in the program evaluation were all found to be in the expected ranges. During this data entry, 10% of the entire data set was checked for errors in the entry of participants' original responses by members of the intervention team (Hearon, 2017).

For the current study, all data which was utilized for analyses came from the Time 2 data collection point of the larger positive psychology intervention study (Hearon, 2017). Validity of data entry was verified by the principal investigator of the larger study (Hearon, July 18, 2017). The Time 2 data (December 2015) allotted more time for teachers to become acquainted with their students when compared to the earlier Time 1 data point (September 2015) in the larger study. Per Ang (2017, January 14) teachers completing the TSRI should feel that he/she has ample knowledge of their student, therefore it was determined Time 2 data would be the most appropriate to be analyzed. Specifically, this data point provided teachers with more time to acquire an understanding of their relationship with their students and the students' likelihood to seek out assistance. Also of note, this time point provided teachers with more time to observe differences in students internalizing and externalizing behaviors for the completion of the SIBS and SEBS. The distribution of scores for teacher perceptions of students internalizing and externalizing behaviors across timepoints are further discussed during in this chapter in the analyses of the first research question, which determined group membership.

The total number of participants available for analyses decreased from Time 1 (N = 186) to Time 2 (N = 179) as seven students were lost to follow up at the second wave of data collection (Hearon, 2017). Although there was complete self-report data from 179 students, one student was missing teacher report data on Time 2 internalizing and externalizing behavior. Based on the necessity of these variables to create the psychopathology composite variable, this participant was eliminated from the analyses, thus the sample was reduced to 178 participants.

Missing data. Rates of missing data within the data set were low because of the specific data collection procedures completed by Hearon (2017). These methods included scanning each of the surveys for completion as well as requesting that participants complete portions of the survey that were unintentionally not completed. Therefore, students who accidentally missed or incorrectly answered were prompted to revisit the measure. Rates of missing data on the teacher reported surveys was considered low, except for the TSRI. At Time 1, some teachers indicated a level of discomfort responding to items which reflected the conflict within their relationship with some students. Therefore, the conflict subscale of the TSRI was not incorporated in any analyses utilizing this data set (Hearon, 2017) and excluded from Time 2 data collection.

Scale Reliability

Prior to completing analyses, all scales which were utilized in this study (i.e., SLSS, 10 Item PANAS-C, SIBS, SEBS, CASSS, TSRI) were analyzed to assess the internal consistency of each measure within the sample of 178 participants. To measure SWB, three separate scales were utilized: SLSS, and the 10-item PANAS-C positive affect and negative affect scales. In the sample of 178 participants, internal consistency was sufficient for the 7-item SLSS with a coefficient alpha of .76. For the PANAS-C, internal consistency was adequate for both the 5-item positive (.81) and 5-item negative affect (.77) scales. The internal consistency for the scales

of the CASSS that were analyzed in this project were excellent for both the 12-item classmate (α = .93) and 12-item teacher (α = .89) scales. In the sample of 178 participants, measures of internalizing and externalizing behaviors had alpha values of .65 and .79. Finally, within the reduced sample of 137 which had complete data on an additional teacher-rated measure of support, the TSRI, the coefficient alpha value was excellent for both the relationship satisfaction (.91) and the instrumental help (.93) subscales.

Descriptive Analyses

Descriptive statistics for all the variables utilized in this study are presented in Table 4. Consistent with previous studies which have examined the DFM (Antaramian, 2015; Antaramian et al., 2010; Suldo & Shaffer, 2008; Suldo et al., 2016), the SWB variable was comprised of aggregate scores measures of life satisfaction, positive affect, and negative affect. In this case, standardized scores for life satisfaction and positive affect were added together and negative affect was subtracted from the sum utilizing SAS. The SWB variable was a composite of scores of positive affect, negative affect, and life satisfaction measures. Scores for life satisfaction came from the Student's Life Satisfaction Scale (Huebner, 1991a, 1991b) and scores for Positive and Negative Affect came from the 10-item PANAS-C (Ebesutani et al., 2012). Also, scores for externalizing and internalizing behaviors came from the SEBS (Cook, 2012) and SIBS (Cook et al., 2010).

To assess univariate normality, skewness, and kurtosis of each of the variables in this study were calculated and are displayed in Table 4. Normal distribution of skew and kurtosis is between -1.0 and 1.0. At Time 2, four variables were within these means for both normal skew and kurtosis: SWB, life satisfaction, classmate support, and TSRI instrumental help subscale. The remaining variables at Time 2, had either or both skew and kurtosis outside the normal

limits: positive affect, negative affect, externalizing behaviors, internalizing behaviors, teacher support, and the TSRI satisfaction subscale. Additionally, due to the nested data structure of this research, intra-class correlations were calculated. Results from these analyses indicated that the variability was typically between students in the data set for the primary variables of interest. However, variability was primarily between teachers regarding ratings on the TSRI instrumental help subscale. Therefore, based on the measure design, it was determined to acceptable to utilize. The means and standard deviations of the variables of interest are displayed in Table 5.

Table 4

Means, Standard Deviations, Ranges, Skew, and Kurtosis of Variables

Variable	*N*	*M*	*SD*	Skewness	Kurtosis
Predictors					
T2-Subjective Well-Being*	178	.002	2.26	-.98	1.03
T2-Life Satisfaction	178	4.78	.80	-.69	-.05
T2-Positive Affect	178	4.18	.77	-1.25	1.55
T2-Negative Affect	178	1.70	.72	1.43	2.28
T2-Externalizing Behaviors	178	1.95	2.81	1.44	1.23
T2 Internalizing Behaviors	178	1.29	2.04	1.91	3.39
CASSS Variables (Student report)					
T2-Teacher Support Scale	178	5.32	.69	-1.53	2.61
T2-Classmate Support Scale	178	4.24	1.17	-.51	-.52
TSRI Variables (Teacher report)					
T2-TSRI Satisfaction Scale	137	4.69	.48	-1.64	2.31
T2-TSRI Instrumental Help Scale	137	3.68	1.08	-.43	-.72

Note. Higher scores reflect increased levels of the construct indicated by the variable name. *= indicates z-score were calculated and utilized in the subsequent analyses. T2= Time 2 of data collection in the larger study. CASSS = Classmate and Student Support Scale. TSRI= Teacher-Student Relationship Inventory.

Table 5

Intra-class Correlations for Key Variables in Study (N = 178)

	SWB	LS	PA	NA	Ext.	Int.	TS	CS	TSRI- IH	TSRI-S
ICC	.00	.00	.02	.02	.11	.10	.14	.03	.24	.58

Note. CS= CASSS Classmate Support Scale. Ext. = SEBS-Externalizing Behaviors. Int. = SIBS-Internalizing Behaviors. LS= Life Satisfaction. PA= Positive Affect. NA= Negative Affect. SWB = Subjective Well-Being. TS= CASSS Teacher Support Scale. TSRI-IH= TSRI-Instrumental Help Scale. TSRI-S= TSRI-Satisfaction Scale.

Correlational Analyses

To more specifically examine the relationships between mental health status and social functioning within this sample, Pearson product-moment correlation coefficients were calculated for all the continuous variables in this study (see Table 6). An alpha level of .05 was used to determine statistical significance in this study. As was expected, SWB was positively correlated with life satisfaction (r= .77, p < .05) and positive affect (r= .74, p < .05), and negatively correlated with negative affect (r= -.76, p < .05). The correlations between SWB and psychopathology were small and not statistically significant: for internalizing behaviors (r = -.11, p = .15) and for externalizing behaviors (r = -.11, p = .14). Additionally, SWB was positively correlated with both the teacher (r= .25, p < .05) and classmate (r= .46, p < .05) support subscales of the CASSS. Externalizing behaviors (SEBS) were negatively correlated with the CASSS classmate support subscale (r= -.22, p < .05) and both the TSRI Instrumental Help (r= -.27, p < .05) and Satisfaction subscales (r= -.61, p < .05). Similarly, internalizing behaviors (SIBS) were negatively correlated with CASSS classmate support subscale (r= -.18, p < .05) and both the TSRI Instrumental Help (r= -.35, p < .05) and Satisfaction subscales (r= -.40, p < .05). The correlation between internalizing and externalizing behaviors was moderate (r= .44, p < .05). The correlation between the classmate support and teacher support subscales was large (r= .50, p < .05). The TSRI instrumental help and satisfaction subscales had a moderate correlation (r= .38, p < .05).

Table 6

Correlations between Key Variables in Study (N = 178)

	SWB	LS	PA	NA	Ext.	Int.	TS	CS	TSRI- IH
SWB	__								
LS	.77*	__							
PA	.74*	.34*	__						
NA	-.76*	-.39*	-.32*	__					
Ext.	-.11	-.09	-.04	.12	__				
Int.	-.11	.00	-.08	.17*	.44*	__			
TS	.25*	.24*	.26*	-.06	-.13	.00	__		
CS	.46*	.31*	.42*	-.31*	-.22*	-.18*	.50*	__	
TSRI-IH	.16	.09	.17*	-.09	-.27*	-.35*	.08	.13	__
TSRI-S	.12	.08	.07	-.12	-.61*	-.40*	.17	.23*	.38*

Note. *$p < .05$. CS= CASSS Classmate Support Scale. Ext. = SEBS-Externalizing Behaviors. Int. = SIBS-Internalizing Behaviors. LS= Life Satisfaction. PA= Positive Affect. NA= Negative Affect. SWB = Subjective Well-Being. TS= CASSS Teacher Support Scale. TSRI-IH= TSRI-Instrumental Help Scale. TSRI-S= TSRI-Satisfaction Scale.

Research Question 1: Dual-Factor Model Mental Health Group Membership Analyses

Scores on measures of SWB and psychopathology were used to determine the existence of a dual-factor model of mental health in an elementary student sample and to determine the distribution (*N*) of students within each of the four mental health groups.

Regarding the assignment to mental health groups, participants were initially classified based on their levels of psychopathology. The SIBS and SEBS are relatively new measures without a long history of use and no national norms. As described in Chapter 3, the developer offered cut scores based on earlier work with a sample of children. In the absence of national norms, this researcher reviewed the frequency distribution obtained in his sample utilized cut scores that classified an expected percentage of youth (i.e., about 16%, corresponding to a *T*-score ≥60) as elevated in terms of internalizing and externalizing symptoms. The frequency distribution of the scores for externalizing teacher reported behaviors are provided in Tables 7 (Time 1; August 2015) and 8 (Time 2; December 2015). The frequency distribution of the scores for internalizing teacher-reported behaviors are provided in Tables 9 (Time 1; August 2015) and 10 (Time 2; December 2015).

Often, screening measures of psychopathology indicate a raw score cutoff that corresponds to a *T*-score of 60, to designate what score elevation would indicate being in the top 15% of symptoms. In terms of externalizing behaviors, Cook and colleagues (2012) noted a cutoff score of ≥9 indicated an elevated level of these behaviors. However, that cutoff score only captured 4.5– 5.1% of youth in the current study, whereas a cutoff score of 6 better captured about 16% of students with elevated symptoms (10% at Time 1 and 13.5% at Time 2). Further, a review of the distribution of the scores within gender groups revealed more boys than girls would be identified as symptomatic if the same cutoff score was used, prompting this researcher

to select gender-specific cutoff scores. Additionally, several previous studies have utilized gender-specific cut scores to compensate for differences in clinical levels of externalizing and internalizing behaviors in girls and boys (Suldo & Shaffer, 2008; Suldo et al., 2016).

In terms of internalizing behaviors, Cook and colleagues (2011) noted a cutoff score of ≥8 indicated an elevated level. However, that cutoff score only captured 2.3 to 3.7% of youth in the current sample at different time points, whereas a cutoff score of 4 better captured about 16% of students with elevated symptoms (16.8% at Time 1 and 12.4% at Time 2). Some well-developed measures of teacher-rated symptoms of psychopathology have indicated different cut points for elementary school boys and girls, as teachers tend to report slightly fewer internalizing symptoms and substantially more externalizing symptoms for boys as compared to mean levels of rated girls (Achenbach & McConaughy, 2011; Achenbach & Rescorla, 2001; Keiley et al., 2000).

For girls, using the gender-specific cutoff scores of 3 *and* 3 for internalizing and externalizing behaviors, respectively, at Time 2, 15.96% (N = 15) of participants met the criteria for elevated levels of externalizing behavior, and 17.02% (N = 16) of participants met the criteria for elevated levels of internalizing behaviors. Within that sample of 94 girl students, 4.25% (N=4) of them had elevated internalizing *and* externalizing behavior at Time 2, whereas 23 girl participants met criteria for elevated levels of either internalizing *or* externalizing behavior. A total of 28.72% (N=27) of girl participants met criteria for elevated levels of psychopathology, either elevated internalizing or externalizing, or both. Those participants with elevated levels on one or both measures of psychopathology were categorized as having high levels of psychopathology. In the sample, 71.28% (N = 67) of girls did not meet the criteria for elevated

levels of psychopathology (< 3 on internalizing and < 3 on externalizing) and were classified as having "low levels of PTH."

For boys, using the gender-specific cutoff scores of 4 and 7 for internalizing and externalizing behaviors, respectively, at Time 2, 16.67% (*N* = 14) of participants met the criteria for elevated levels of internalizing behavior, and 16.67% (*N* =14) of participants met the criteria for elevated levels of externalizing behaviors. Within that sample of 84 male students, 7.14% (*N* = 6) of them had elevated internalizing *and* externalizing behavior at Time 2, whereas 16 boy participants met criteria for elevated levels of either internalizing *or* externalizing behavior. Therefore, a total of 26.19% (*N* = 22) of boy participants met criteria for elevated levels of psychopathology, either elevated internalizing or externalizing, or both. Those participants with elevated levels on one or both measures of psychopathology were categorized as having high levels of psychopathology. In the sample, 73.81% (*N* = 62) of boys did not meet the criteria for elevated levels of psychopathology (< 4 on internalizing and < 7 on externalizing) and were classified as having "low levels of PTH."

In sum, for all participants, using the gender-specific cutoff scores described above for each gender, at Time 2 a total of 16.85% (*N* = 30) of participants met the criteria for elevated levels of internalizing behavior, 16.29% (*N* = 29) of participants met the criteria for elevated levels of externalizing behaviors, and 5.62% (*N* = 10) of the participants had elevated scores on for both internalizing and externalizing behaviors. Within the sample of 178 students, 27.53% (*N* = 49) of the participants met criteria for elevated levels of psychopathology, either elevated internalizing, externalizing, or both. Those participants who reported elevated levels on one or both measures of psychopathology were categorized as having high levels of psychopathology.

In the total sample, 72.47% (N = 129) of participants did not meet the criteria for elevated levels of psychopathology and were classified as having "low levels of PTH."

In terms of SWB, to mathematically allow for every participant with high psychopathology to also be classified as low SWB (as in the traditional model of mental health in which high SWB is assumed the same as low psychopathology), this researcher reviewed the frequency distribution of SWB scores. The frequency distribution of the Time 2 SWB scores from the 15th through 30th percentile is displayed in Table 11. This researcher determined which score corresponded to an equivalent percentage for students with elevated levels of psychopathology (i.e., 27.53%). In this sample, a SWB score of -1.00 met the described criteria, indicating that a score lower than -1.00 corresponded with low levels of SWB, while participants with scores greater than or equal to -1.00 were considered to have elevated levels of SWB. This method is consistent with several studies which have also utilized SWB cut-scores corresponding with similar percentages (Antaramian, 2015; Antaramian et al., 2010; Suldo & Shaffer, 2008; Suldo et al., 2016).

Table 7

Frequency Distribution for SEBS at Time 1, for Girls (N = 94) and Boys (N =84)

	Girls			Boys		
Time 1 SEBS Scores	Frequency	Percent	Cumulative Percent	Frequency	Percent	Cumulative Percent
0	71	75.53	75.53	37	44.05	44.05
1	9	9.57	85.11	6	7.14	51.19
2	4	4.26	89.36	5	5.95	57.14
3	4	4.26	93.62	8	9.52	66.67
4	2	2.13	95.74	10	11.90	78.57
5	1	1.06	96.81	3	3.57	82.14
6	2	2.13	98.94	2	2.38	84.52
7	0	0.00	98.84	2	2.38	86.90
8	0	0.00	98.94	3	3.57	90.48
9	0	0.00	98.94	0	0.00	90.48
10	0	0.00	98.94	1	1.19	91.67
11	1	1.06	100.00	3	3.57	95.24
12	0	0.00	100.00	3	3.57	98.81
13	0	0.00	100.00	1	1.19	100.00
Total	94	100.00	100.00	84	100.00	100.00

Table 8

Frequency Distribution for SEBS at Time 2, for Girls (N = 94) and Boys (N =84)

	Girls			Boys		
Time 2 SEBS Scores	Frequency	Percent	Cumulative Percent	Frequency	Percent	Cumulative Percent
0	63	67.02	67.02	33	39.29	39.29
1	10	10.64	77.66	6	7.14	46.43
2	6	6.38	84.04	5	5.95	52.38
3	5	5.32	89.36*	6	7.14	59.52
4	4	4.26	93.62	5	5.95	65.48
5	4	4.26	97.87	7	8.33	73.81
6	1	1.06	98.94	8	9.52	83.33
7	0	0.00	98.84	5	5.95	89.29*
8	1	1.06	100.00	1	1.19	90.48
9	0	0.00	100.00	2	2.38	92.86
10	0	0.00	100.00	4	4.76	97.62
11	0	0.00	100.00	2	2.38	100.00
Total	94	100.00	100.00	84	100.00	100.00

**Note.* For girls, a score of 3 or greater was chosen as an indicator of elevated levels of externalizing behaviors. For boys, a score of 7 or greater was chosen as an indicator of elevated levels of externalizing behaviors.

Table 9

Frequency Distribution for SIBS at Time 1, for Girls (N = 94) and Boys (N =84)

	Girls			Boys		
Time 1 SIBS Scores	Frequency	Percent	Cumulative Percent	Frequency	Percent	Cumulative Percent
0	49	58.33	58.33	32	41.56	41.56
1	11	13.10	71.43	10	12.99	54.55
2	6	7.14	78.57	15	19.48	74.03
3	4	4.76	83.33	7	9.09	83.12
4	5	5.95	89.29	3	3.90	87.01
5	1	1.19	90.48	3	3.90	90.91
6	5	5.95	96.43	4	5.19	96.10
7	0	0.00	96.43	0	0.00	96.10
8	0	0.00	96.43	1	1.30	97.40
9	2	2.38	98.81	1	1.30	98.70
10	1	1.19	100.00	0	0.00	98.70
11	0	0.00	100.00	0	0.00	98.70
12	0	0.00	100.00	0	0.00	98.70
13	0	0.00	100.00	1	1.30	100.00
Total	94	100.00	100.00	84	100.00	100.00

Table 10

Frequency Distribution for SIBS at Time 2, for Girls (N = 94) and Boys (N =84)

	Girls			Boys		
Time 2 SIBS Scores	Frequency	Percent	Cumulative Percent	Frequency	Percent	Cumulative Percent
0	60	63.83	63.83	40	47.62	47.62
1	13	13.83	77.66	13	15.48	63.10
2	5	5.32	82.98	9	10.71	73.81
3	8	8.51	91.49*	8	9.52	83.33
4	3	3.19	94.68	4	4.76	88.10*
5	2	2.13	96.81	2	2.38	90.48
6	0	0.00	96.81	3	3.57	94.05
7	0	0.00	96.81	4	4.76	98.81
8	3	3.19	100.00	0	0.00	98.81
9	0	0.00	100.00	0	0.00	98.81
10	0	0.00	100.00	1	1.19	100.00
Total	94	100.00	100.00	84	100.00	100.00

**Note.* For girls, a score of 3 or greater was chosen as an indicator of elevated levels of internalizing behaviors. For boys, a score of 4 or greater was chosen as an indicator of elevated levels of internalizing behaviors.

Table 11

Frequency Distribution of a Relevant Segment of Time 2 SWB Composite Scores

Time 2 SWB Z- Scores	Frequency	Percent	Cumulative Frequency	Cumulative Percent
-2.179732255	1	0.56	27	15.17
-2.160893901	1	0.56	28	15.73
-2.081027364	1	0.56	29	16.29
-2.063491304	1	0.56	30	16.85
-1.997905092	1	0.56	31	17.42
-1.901153641	1	0.56	32	17.98
-1.867383815	1	0.56	33	18.54
-1.852452343	1	0.56	34	19.10
-1.804402191	1	0.56	35	19.66
-1.720628772	1	0.56	36	20.22
-1.7056973	1	0.56	37	20.79
-1.560895697	1	0.56	38	21.35
-1.444003599	1	0.56	39	21.91
-1.412187214	1	0.56	40	22.47
-1.318691498	1	0.56	41	23.03
-1.299201997	1	0.56	42	23.60
-1.285572818	1	0.56	43	24.16
-1.282968231	1	0.56	44	24.72
-1.268036758	1	0.56	45	25.28
-1.243034962	1	0.56	46	25.84
-1.136864335	1	0.56	47	26.40
-1.136213188	1	0.56	48	26.97
-1.038159443*	1	0.56	49	27.53
-0.961548641*	1	0.56	50	28.09
-0.863494896	1	0.56	51	28.65
-0.859588015	1	0.56	52	29.21
-0.747253945	1	0.56	53	29.78
-0.701808381	1	0.56	54	30.34
-0.669340848	1	0.56	55	30.90

**Note.* A cut-score of between -1.03 and -0.96 was utilized, specifically the midpoint of -1.00. This score was utilized to accurately encompass the 27.53rd percentile of Time 2 SWB scores.

Both the SWB and PTH scores were then utilized to determine group membership and distribution, using analyses completed in SAS. The majority of participants, specifically 53.93% (*N*=96) were classified as having Complete Mental Health (High levels of SWB, Low levels of PTH). Two mental health groups, Vulnerable (Low levels of SWB, Low levels PTH) and Symptomatic but Content (High levels of SWB, High levels PTH) had equal portions of students within their respective quadrants, each encompassing 18.54% (*N*= 33 each group). Finally, those who were classified as Troubled (Low levels of SWB, High levels PTH) comprised the smallest portion of the sample at 8.99% (*N*=16). The distribution of each mental group and specific cut scores for SWB and PTH composites are provided in Table 12.

The distribution of gender and age of participants in each mental health group are displayed in Table 13. Regarding between group differences in student demographic features, preliminary chi-square analyzes indicated no significant differences across the four mental health groups with respect to gender (p =.94); parent marital status, specifically parents married or not (p =.51); race (p = .96); or SES, specifically free/reduced-price lunch status (p = .94). In terms of SES, 75 participants in the sample (43.6%) qualified for free or reduced-price school lunch, an indicator of lower SES. However, significant differences across each of the four mental health groups regarding each specific teacher which participants were assigned to was significant (p <.01). Means are provided pertaining to these variables for each mental health group in Table 14.

Table 12

Mental Health Group Distribution Utilizing a Dual Factor Model Framework (N= 178)

Mental Health Group	*N*	%	SWB Cut score	PTH Composite for Girls	PTH Composite for Boys
CMH (High SWB, Low PTH)	96	53.93	> -1.00	SEBS <3 and SIBS <3	SEBS <4 and SIBS <7
Vulnerable (Low SWB, Low PTH)	33	18.54	< -1.00	SEBS <3 and SIBS <3	SEBS <4 and SIBS <7
SBC (High SWB, High PTH)	33	18.54	> -1.00	SEBS ≥3 and/or SIBS ≥3	SEBS ≥4 and/or SIBS ≥7
Troubled (Low SWB, High PTH)	16	8.99	< -1.00	SEBS ≥3 and/or SIBS ≥3	SEBS ≥4 and/or SIBS ≥7

**Note*. CMH= Complete Mental Health. PTH= Psychopathology. SBC= Symptomatic but Content. SEBS = SEBS Externalizing Behavior Screener. SIBS= Student Externalizing Behavior Screener.

Table 13

Mental Health Group Distribution by Gender and Age (N=178)

DFM Group	Girls		Boys		Age (Years Old)	Total	
	N	%	*N*	%	*M*	*N*	%
CMH	50	53.19	46	54.76	9.63	96	53.93
Vulnerable	17	18.09	16	19.05	9.79	33	18.54
SBC	19	20.21	14	16.67	9.97	33	18.54
Troubled	8	8.51	8	9.52	10.25	16	8.99
Total	94	100.00	84	100.00	9.78	178	100.00

**Note.* CMH= Complete Mental Health. DFM = Dual Factor Model of Mental Health. SBC= Symptomatic but Content.

Table 14

Mental Health Group Distribution by Free and Reduced Lunch Status and Race (N= 172)

	CMH		Vulnerable		SBC		Troubled		Total	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
FRL	38	44.22	14	42.42	16	48.48	7	43.75	75	43.60
White	55	61.11	17	51.52	20	60.47	12	75.00	104	60.47
Black	5	5.56	2	6.06	1	3.03	0	0.00	8	4.65
Hispanic	19	21.11	10	30.30	7	21.21	2	12.50	38	22.09
Asian	3	3.33	1	3.33	1	3.03	0	0.00	5	2.91
Multicultural	8	8.99	3	9.09	4	12.12	2	12.50	17	9.88

**Note*. Sample of 172 was utilized based on available data. CMH= Complete Mental Health. DFM= Dual Factor Model of Mental Health. FRL = Eligible for Free or Reduced-Price School Lunch. SBC = Symptomatic but Content.

Research Question 2: Between Group Differences Pertaining to Social Functioning

To address the second research question, a series of between-subjects Analysis of Covariance (ANCOVA; GLM Method I; Type III; adjusts for unequal sample sizes within cells) were conducted to test the effects that mental health group membership had on social functioning with teachers and classmates, while controlling for teacher effects. Analyses that yielded a significant main effect of mental health group were followed by post hoc comparison tests. Preliminary chi-square analyzes were conducted to determine which demographic variables to include as covariates. There were no significant differences across the four mental health groups with respect to gender, parent marital status, race, or SES (free or reduced-price school lunch status). Significant differences across each of the four mental health groups were found for grade, χ^2 (3) = 13.56, $p < .01$, V = .28, and teacher, χ^2 (39) = 69.83, $p < .01$, V = .36. Adjustments were made for each of the conducted tests to control for the potential influence of teacher ratings (i.e., fixed effect) of internalizing and externalizing behaviors and based on the fact student participants were nested in classrooms. Controlling for individual teachers also essentially controlled for grade level, as each teacher in this elementary school instructed specific grades (i.e., 4^{th} OR 5^{th}) within their own individual classrooms. Thus, grade level was not included as a covariate in the subsequent analyses. Of note, the sample size of participants for analyses with the TSRI relationship satisfaction and instrumental help scales is reduced to 137 because teacher participant's completion rates were low on these measures as several participants chose to not provide ratings of their relationship with students in their classroom. The mean values of each variable of social functioning within each of the four mental health groups are included in Table 19.

An ANCOVA, controlling for teacher effects, revealed a significant effect for mental health group membership on perceived teacher support ($F = 4.22$, $p < .01$; see Table 15). As depicted in Table 19, follow-up Tukey-Kramer tests indicated participants who were identified as having Complete Mental Health ($M = 5.40$, $SD = .69$) reported greater values of perceived support from their teachers when compared those who were identified as Troubled ($M= 4.95$, $SD = .81$). However, there were no statistical differences when compared to those who were identified as Vulnerable ($M = 5.09$, $SD = .72$). Those who were identified as Symptomatic but Content ($M = 5.53$, $SD = .72$) reported greater levels of perceived support from their teachers when compared to those who were identified as Troubled or Vulnerable. Those identified as Symptomatic but Content reported the highest value of perceived teacher support, despite their elevated levels of psychopathology. There was not a significant difference in teacher support between students in the Symptomatic but Content and Complete Mental Health Groups. Last, there was no significant difference between those identified as Vulnerable or Troubled.

Table 15

ANCOVA Summary Table for Test of the Effect of Student Mental Health Group Membership on Social Functioning with Teachers (CASSS-Teacher Support Subscale)

Source	*df*	*SS*	*MS*	*F*
Between Groups	16	21.56	1.35	3.39*
Mental Health Group	3	5.02	1.67	4.22*
Teacher	13	15.69	1.21	3.04*
Within Groups	161	63.91	0.40	
Total	177	85.46		

Note. $N = 178$
*$p < .05$.

An ANCOVA, controlling for teacher effects, revealed a significant effect for mental health group membership on perceived classmate support (F= 14.18, p < .0001; see Table 16). As depicted in Table 19, follow-up Tukey-Kramer tests indicated participants who were identified in both the Complete Mental Health (M = 4.54, SD = 1.06) or Symptomatic but Content (M = 4.57, SD = 1.02) groups reported greater levels of perceived support from their classmates when compared to those who were identified in the Vulnerable (M = 3.48, SD = 1.05) or Troubled (M = 3.34, SD = 1.23) groups. Thus, both groups with elevated levels of SWB reported greater perceived support from classmates when compared to those with lower levels of SWB. Those identified as Symptomatic but Content reported the highest value of perceived classmate support, despite the elevated levels of psychopathology. There was not a significant difference in classmate support between students in the Symptomatic but Content and Complete Mental Health groups.

Table 16

ANCOVA Summary Table for Test of the Effect of Student Mental Health Group Membership on Social Functioning with Classmates (CASSS-Classmate Support Subscale)

Source	*df*	*SS*	*MS*	*F*
Between Groups	16	68.66	4.29	3.97*
Mental Health Group	3	45.96	15.32	14.18*
Teacher	13	24.69	1.90	1.76
Within Groups	161	173.94	1.08	
Total	177	242.60		

Note. N = 178
*p <.05.

An ANCOVA, controlling for teacher effects, revealed a significant effect for mental health group membership on classroom teacher-reported teacher-student relationship satisfaction with their students (F= 8.50, p < .0001; see Table 17). As depicted in Table 19, follow-up Tukey-Kramer tests indicated teachers rated a stronger perceived relationship with those in the Complete Mental Health (M = 4.84, SD = .31) and Vulnerable (M=4.74, SD=.40) groups, when compared to those who were identified in Symptomatic but Content (M = 4.42, SD = .58) or Troubled (M = 4.13, SD = .79) groups. There were no significant differences between the Complete Mental Health and Vulnerable (M = 4.74, SD = .40) groups, despite the former group's elevated levels of SWB. Finally, regarding comparisons between groups which were identified to have elevated levels of psychopathology, there were no apparent differences regarding relationship satisfaction with teachers between those in the Symptomatic but Content group, when compared to those in the Troubled group.

Table 17

ANCOVA Summary Table for Test of the Effect of Student Mental Health Group Membership on Teachers Relationship Satisfaction (TSRI-Relationship Satisfaction Subscale)

Source	*df*	*SS*	*MS*	*F*
Between Groups	13	12.51	0.96	6.28*
Mental Health Group	3	3.91	1.30	8.50*
Teacher	10	6.10	0.61	3.98*
Within Groups	123	18.84	0.157	
Total	136	31.36		

Note. N =137
*p <.05.

An ANCOVA, controlling for teacher effects, revealed a significant effect for mental health group membership on teacher-reported instrumental help ($F = 3.42$, $p < .001$; see Table 18). As depicted in Table 19, follow-up Tukey-Kramer tests indicated teachers identified those in both the Complete Mental Health ($M = 3.98$, $SD = .98$) or Vulnerable ($M = 3.75$, $SD = 1.03$) groups had a greater likelihood to seek assistance from their teacher when compared to those who were identified in the Symptomatic but Content ($M = 3.13$, $SD = 1.01$) or Troubled ($M = 2.64$, $SD = 1.02$) groups. There were not significant differences in Instrumental Help between the Complete Mental Health and Vulnerable groups, despite the former group's elevated levels of SWB. Finally, regarding comparisons between groups which were identified to have elevated levels of psychopathology, there were no apparent differences regarding teacher perceived instrumental help between those in the Symptomatic but Content group, when compared to those in the Troubled group.

Table 18

ANCOVA Summary Table for Test of the Effect of Student Mental Health Group Membership on Teacher Support (TSRI-Instrumental Support)

Source	*df*	*SS*	*MS*	*F*
Between Groups	13	90.45	6.96	12.80*
Mental Health Group	3	5.58	1.86	3.42*
Teacher	10	65.80	6.58	12.11*
Within Groups	123	66.85	0.54	
Total	136	157.30		

Note. N =137
*p <.05.

Table 19

Mean Values Social Functioning Variables by DFM Mental Health Group

	Mental Health Group									
	CMH (N = 96)		Vulnerable (N = 33)		SBC (N = 33)		Troubled (N = 16)		Total (N = 178)	
Student Report Measures	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
CASSS-TS	$5.40_{a, b}$ (5.42)	.69	$5.09_{a, c}$ (5.15)	.72	5.53_{b} (5.43)	.51	4.95_{c} (4.87)	.81	5.32	.69
CASSS-CS	4.54_{a} (4.55)	1.06	3.48_{b} (3.53)	1.05	4.57_{a} (4.63)	1.02	3.34_{b} (3.17)	1.24	4.24	1.17
	CMH (N= 74)		Vulnerable (N = 27)		SBC (N = 27)		Troubled (N = 9)		Total (N = 137)	
Teacher Report Measures	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
TSRI-S	4.84_{a} (4.76)	.31	4.74_{a} (4.71)	.40	4.42_{b} (4.42)	.58	4.13_{b} (4.07)	.79	4.69	.48
TSRI-IH	3.98_{a} (3.76)	.98	3.75_{a} (3.59)	1.03	3.13_{b} (3.40)	1.01	2.64_{b} (2.89)	1.02	3.68	1.08

**Note*. CASSS-CS= Classmate and Student Support Scale. CASSS-TS= Classmate and Student Support Scale-Teacher Support Scale. CMH= Complete Mental Health. SBC= Symptomatic but Content. TSRI-IH=Teacher Student Relationship Inventory-Instrumental Help Subscale. TSRI-S= Teacher Student Relationship Inventory-Satisfaction Subscale. Tukey-Kramer 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. Dependent variable adjusted means are presented in parentheses.

Research Question 3: Between and Within Group Differences in Psychopathology Make-up

To address the third research question, a series of between-subjects Analysis of Covariance (ANCOVA; GLM Method I; Type III; adjusts for unequal sample sizes within cells) were conducted to test the effects that mental health group membership had on internalizing behaviors, externalizing behaviors, and differences between the mean values of the two behaviors within each mental health group, while controlling for the effect of teacher. Based on preliminary chi-square analyzes, there were no significant differences across the four mental health groups regarding gender (when utilizing gender specific cut score), parent marital status, race, or free or reduced lunch status.). Significant differences across each of the four mental health groups were found for teacher, χ^2 (39) = 69.83, $p < .01$, V = .36. Adjustments were made for each of the conducted tests to control for the potential influence of teacher ratings (i.e., fixed effect) of internalizing and externalizing behaviors and based on the fact student participants were nested in classrooms. The means and standard deviations of each individual mental health group's teacher rated level of externalizing and internalizing behaviors are provided in Table 23.

An ANCOVA, controlling for teacher effects, revealed a significant effect for mental health group membership on levels of externalizing behavior ($F = 19.18$, $p < .0001$; see Table 20). As depicted in Table 23, Tukey-Kramer post hoc comparison tests revealed that those who were identified in the Complete Mental Health ($SD = .97$, $SD = 1.76$) or Vulnerable ($M = 1.06$, $SD = 1.89$) groups had teacher-reported externalizing behaviors which were significantly less than those in both the Symptomatic but Content ($M = 4.15$, $SD = 3.31$) and Troubled ($M = 5.13$, $SD = 3.69$) groups. Regarding groups which lacked the presence of psychopathology symptoms, no significant differences existed between the Complete Mental Health and Vulnerable groups.

Also, there were no significant differences between the Symptomatic but Content and Troubled mental health groups, despite the elevated SWB levels of the former group.

Table 20

ANCOVA Summary Table for Test of the Effect of Student Mental Health Group Membership on Externalizing Behaviors

Source	*df*	*SS*	*MS*	*F*
Between Groups	16	537.46	33.59	6.25*
Mental Health Group	3	309.24	103.08	19.18*
Teacher	13	97.69	7.51	1.40
Within Groups	161	865.09	5.37	
Total	177	1402.54		

Note. $N = 178$
$^*p < .05$.

An ANCOVA, controlling for teacher effects, revealed a significant effect for mental health group membership on levels of internalizing behavior ($F = 35.32$, $p < .0001$; see Table 21) As depicted in Table 23, follow up Tukey-Kramer post hoc comparison tests indicated that those identified in the Complete Mental Health ($M = .46$, $SD = .82$) or Vulnerable ($M = .52$, $SD = .83$) groups had teacher-reported internalizing behaviors which were significantly less than those in both the Symptomatic but Content ($M = 2.88$, $SD = 2.30$) and Troubled ($M = 4.63$, $SD = 2.99$) groups. Regarding groups which lacked the presence of psychopathology symptoms, no significant differences were reported between the Complete Mental Health and Vulnerable groups. Regarding group differences between those with elevated levels of psychopathology, those identified as Troubled had greater teacher-rated internalizing behaviors, when compared to the Symptomatic but Content group.

Table 21

ANCOVA Summary Table for Test of the Effect of Student Mental Health Group Membership on Internalizing Behaviors

Source	*df*	*SS*	*MS*	*F*
Between Groups	16	370.50	23.16	10.18*
Mental Health Group	3	241.11	80.37	35.32*
Teacher	13	23.03	1.77	.78
Within Groups	161	366.31	2.28	
Total	177	736.81		

Note. $N = 178$
$*p < .05$.

Regarding within-group comparisons, an ANCOVA, controlling for teacher effects, did not reveal a significant effect for mental health group membership on *differences* between externalizing and internalizing behaviors ($F = .42$, $p = .74$; see Table 22). Based on these results indicating within group similarity in difference scores, no follow up tests were conducted. Mean values of internalizing and externalizing behaviors within each mental health group are provided in Table 23.

Table 22

ANCOVA Summary Table for Test of the Effect of Student Mental Health Group Membership on Differences Between Externalizing and Internalizing Behaviors

Source	*df*	*SS*	*MS*	*F*
Between Groups	16	101.39	6.37	.89
Mental Health Group	3	9.04	3.01	.42
Teacher	13	86.01	6.62	.93
Within Groups	161	1144.71	7.11	
Total	177	1246.10		

Note. $N = 178$
$^{*}p < .05$.

Table 23

Mental Health Group Psychopathology Make-Up Within Group Comparison

Group		Externalizing Behaviors		Internalizing Behaviors	
	N	*M*	*SD*	*M*	*SD*
CMH	96	$.97_a$	1.76	$.46_a$	.82
Vulnerable	33	1.06_a	1.89	$.52_a$	.83
SBC	33	4.15_b	3.31	2.88_b	2.30
Troubled	16	5.13_b	3.69	4.63_b	2.99

Note. CMH= Complete Mental Health. SBC= Symptomatic but Content. Tukey-Kramer 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.

CHAPTER FIVE:

DISCUSSION

This study sought to examine the Dual-Factor Model of Mental Health in a sample of elementary school students. Specific research questions evaluated (1) the presence of each of the four mental health groups as conceptualized by previous research studies (Antaramian, 2015; Antaramian et al., 2010; Suldo & Shaffer, 2008; Suldo et al., 2016), (2) the impact mental health group status had on social functioning with teachers and peers, and (3) the between and within group differences regarding psychopathology make-up (i.e., externalizing and internalizing behaviors). The following discussion examines the findings of this study in relation to the research questions of interest, hypotheses, as well as any associations with previous literature. Also, contributions to the literature and implications for school psychology practice are noted. Finally, limitations of the current study, areas for future research, and general recommendations are provided.

Comprehensive Assessment of Mental Health Through A Dual-Factor Model

Previous assessment models of mental health have primarily mirrored a medical framework, assessing solely for the presence or absence of negative indicators of mental health (much like that of a disease; Whitcomb & Merrell, 2013). Throughout the past 15 years, a conceptual shift has occurred, with studies indicating mental health is not conceptualized by a single factor (i.e., the presence of psychopathology), but as indicators of both well-being and psychopathology in tandem (Antaramian, 2015; Antaramian et al., 2010; Greenspoon & Saklofske, 2001; Eklund et al., 2011; Renshaw & Cohen, 2014; Suldo & Shaffer, 2008; Suldo et

al., 2016). The methods for the current study conceptualized SWB as average to high levels of life satisfaction, recurrent experiences of positive emotions, and limited experiences of negative emotions across several reliable self-report measures. Psychopathology was defined as elevated levels of externalizing or internalizing behaviors, in relation to levels of other peers in the sample, as reported by teachers.

The findings regarding the first research question supported the hypothesis that most participants would meet criteria to be identified in the Complete Mental Health group. Specifically, 53.93% of participants met criteria for the Complete Mental Health group. In comparison to previous studies of the DFM, there appears to be a consistent pattern with the majority of students being classified in the Complete Mental Health group, while the other three mental health groups vary in their exact percentages. However, when comparing the current sample to the sample with the highest percentage of students meeting criteria for Complete Mental Health, it is essential to acknowledge Eklund and colleagues (2011) chose to only utilize one indicator of wellness (i.e., life satisfaction) as opposed to a multifaceted construct, like SWB, as previous studies have done (Antaramian, 2015; Antaramian et al., 2010; Suldo & Shaffer, 2008; Suldo et al., 2016). In this same regard, Eklund and colleagues (2011) chose to utilize self-report measures of psychopathology, which could have, in turn, impacted the overall framework encompassing both factors.

Regarding the other mental health groups, 18.54% of participants met criteria for the Symptomatic but Content group (i.e., high SWB, high PTH) and an additional 18.54% of participants also met criteria for the Vulnerable group (i.e., low SWB, low PTH). Previous studies (Suldo & Shaffer, 2008; Suldo et al. 2016) also found corresponding percentages for the SBC and Vulnerable groups. This pattern may be attributed to the fact this researcher and

previous studies chose to utilize gender specific cut-scores for distinguishing elevated levels of PTH and SWB, as opposed to solely *T*-scores based on the distribution of scores among the entire sample. Thus, utilizing these corresponding percentages to identifying low and elevated symptoms yields some consistencies across the mental health group's conceptualization. Also, in comparison to previous research studies, the SBC group (i.e., 18.54%) was comprised of a somewhat higher percentage of the overall sample than previously reported, but still in the general range of < 20%. Finally, 8.99% of youth in this sample were categorized as Troubled (i.e., low SWB, high PTH), meeting criteria for the traditional conceptualization of poor mental health. These findings resembled percentages similar to other studies, both conducted in samples of college students (Antaramian et al., 2010; Eklund et al., 2011), which may be a relatively high functioning group since young adults with non-academic aspirations are excluded. All other previous studies reported a Troubled group which was comprised of larger percentages of participants (i.e., greater than 15% of entire sample). However, those studies consisted of general samples of adolescents, and the current study is unique in its examination of elementary school children. Given that the frequency of youth with mental health problems and diminished life satisfaction tends to increase from childhood to adolescence (Goldbeck et al., 2007; Merikangas et al., 2009; Merikangas et al., 2010; Tolan et al., 2014), the somewhat smaller percentage of youth identified as Troubled in this study seems reasonable.

In light of the sizable portions of youth in each quadrant, the findings from this study support the notion that both SWB and psychopathology should both be examined in mental health research to acquire a comprehensive viewpoint of psychological functioning. From an assessment standpoint, students who may have not been identified on traditional mental health assessments based on a lack of psychopathological symptoms (i.e., Vulnerable) were identified.

Additionally, those youth who may not have been identified due to their own elevated levels of SWB (i.e., Symptomatic but Content) are comprehensively identified through this framework.

This model has been present in studies which examined middle school (Antaramian et al., 2010; Suldo & Shaffer, 2008), high school (Suldo et al., 2016), and college aged students (e.g., Antaramian, 2015; Eklund et al., 2011; Renshaw & Cohen, 2014), with limited examination in elementary school students since the initial conceptualization for this model (Greenspoon & Saklofske, 2001). Findings from the current study support the existence of the model in an elementary school sample of children. The specific percentages of participants in each mental health group are similar to previous studies with early adolescents (i.e., Suldo & Shaffer, 2008), as opposed to the initial study of elementary school children which solely yielded 13-25.3% of students meeting criteria for optimal wellness (Greenspoon & Saklofske, 2001). However, in comparison to previous studies, this was the lowest percentage of students who were identified as having Complete Mental Health aside from the initial conceptualization. A summary of the mental health group percentages for this study in comparison to previous DFM studies is provided in Table 24.

Table 24

Summary of Studies of Dual-Factor Model of Mental Health to Date

Study	Sample	CMH	Vulnerable	SBC	Troubled	Outcomes Examined
Greenspoon & Saklofske (2001) *	407 Canadian 3rd-6th grade students (*M* = 10.5 years old)	13.0 - 25.3%	7.4%	10.81%	16.0 - 25.5%	Self-esteem, locus of control, relationship quality, self-perception
Suldo & Shaffer (2008); Suldo et al. (2011)	347 American 6th-8th grade students (*M* = 12.96 years old)	57.0%	13.0%	13.0%	17.0%	Teacher support, classmate support, social problems, academic achievement, academic attitudes, physical health
Antaramian et al. (2010)	764 American 7th -8th grade students	66.9%	8.1%	17.3%	7.7%	School involvement, academic achievement, Cognitive engagement, emotional engagement, behavioral engagement
Eklund et al. (2011)	246 American students (18-25 years old)	78.0%	9.0%	4.0%	9%	Maladaptive Behaviors (attention problems, hyperactivity, alcohol abuse, locus of control), hope, gratitude
Lyons et al. (2012)	990 American 6th-12th grade students (*M* = 14.26 years old)	64.0%	7.0%	9.0%	20.0%	Stressful life events, emotional support, extraversion, neuroticism

Table 24 (continued)

Renshaw & Cohen (2014)	1,356 American college students (17-51 years old; *M* = 19.18 years old)	61.4%	18.7%	4.8%	15.1%	Interpersonal connectedness, academic achievement
Antaramian (2015)	561 American college students (*M*= 19.5 years old)	47.4%	26.0%	5.5%	21.0%	Academic achievement, engagement, intrinsic motivation
Suldo et al. (2016)	500 American 9th-11th grade students (14 to 18 years old; *M*= 15.27 years old)	62.2%	11.4%	11.4%	15.0%	Academic achievement, academic attitudes, physical health, identity development, social support, romantic relationship satisfaction, peer victimization
Current Study	178 American 4th and 5th grade students (8 to 12 years old, *M* = 9.78 years old)	53.9%	18.5%	18.5%	9.0%	Classmate support, teacher support, teacher-student relationship satisfaction, instrumental help

Table 24 (continued)

Note. CMH = Complete Mental Health. SBC = Symptomatic but Content. *Analyses conducted to create mental health groups were completed twice (once to categorize SBC, and once to categorize Vulnerable), and cases that were border line were eliminated. Authors indicated there might be some overlap between classifications yielded from the two analyses. Percentages of students in groups do not equal 100% because 41.8 to 60.2% of cases were eliminated during attempts to sharpen contrasts between groups.

The Relationship between DFM Group Status and Social Functioning in School

Learning to properly interact with teachers and classmates is critical for academic success (Baker, 2006; Elias & Hanes, 2008). Previous studies have indicated associations between SWB and increased social support from teachers and peers (Suldo & Shaffer, 2008; Suldo et al., 2016) and greater interpersonal connectedness (Renshaw & Cohen, 2014). In the current study, social functioning refers to students' reports on indicators of perceived social support from classmates and teachers, in addition to teachers' perceptions of the student-teacher relationship quality and instrumental help. These behaviors were assessed by participants' rating of their perceived relationships with their classmates and teachers (CASSS, Malecki et al., 2000) and a rating completed by the teacher regarding student-teacher relationships and the student's likelihood to reach out for support (TSRI; Ang, 2005).

Student Perceptions of Social Functioning in School

The current study examined the impact of mental health status on student perceptions of their primary relationships in school (i.e., teachers, classmates). Correlation analyses obtained in this study indicated a moderate association between SWB and increased feelings of social support from both teachers and classmates. There were negative correlations between both internalizing and externalizing behaviors with perceived classmate support, as students whose teachers rated them as having more symptoms of mental health problems experienced less social support from their classmates. However, there were no significant correlations between any measures of psychopathology and perceived teacher support.

Regarding between group differences in terms of perceived social support with teachers, those who were identified has having Complete Mental Health (i.e., framework for mental health with increased levels of SWB) reported mean values which were greater than the Troubled

Mental Health group (i.e., previous mental health framework, focused on the absence of psychopathology). Additionally, those who were identified as Symptomatic but Content (i.e., high SWB, despite elevated psychopathology) reported values which were greater than both the Troubled and Vulnerable groups (i.e., both lacking intact SWB). Therefore, these findings (differences in social outcomes between groups of students with clinically elevated levels of psychopathology, which typically indicates impaired functioning) illustrate the protective nature of SWB, as Symptomatic but Content youth reported better perceptions of teacher support than those identified as Troubled (who also had elevated levels of psychopathology). Interestingly, students who were identified in either the Symptomatic but Content or the Complete Mental Health Group had comparable means, thus championing the mentality of promoting wellness, as the presence of high SWB even when present with elevated psychopathology was associated with positive student perceived social outcomes, as seen in students without elevated psychopathology (and high SWB). Thus, the hypothesis that those who were identified as having high levels of SWB would report the highest means for perceived teacher support was confirmed.

Regarding between group differences in terms of perceived social support from classmates, those who were identified in either the Complete Mental Health or Symptomatic but Content groups reported greater values than those in either the Vulnerable or Troubled Groups. Thus, in this case those groups which had elevated levels of SWB reported values which were greater than with decreased levels of SWB. Again, these findings (differences in social outcomes between groups of students with elevated levels of psychopathology, which typically indicates impaired functioning) illustrate the protective nature of SWB, as Symptomatic but Content students reported better perceptions of classmate support than those identified as

Troubled. Also, similarly to perceived teacher support, those were who identified in both the Symptomatic but Content or the Complete Mental Health Group had comparable means, therefore in this study, both groups which had elevated levels of SWB reported greater means self-reported indicators of perceived social support. Thus, the hypothesis that those who were identified as having high levels of SWB would report the highest means for perceived classmate support was confirmed.

Teacher Perceptions of Student Social Functioning in School

The current study examined the impact of mental health group membership on teacher perceptions of social functioning indicators. Specifically, teachers evaluated their own satisfaction of their relationship with each student and the student's likelihood to seek out advice or support from them. In both cases for teacher relationship satisfaction and student instrumental health, those youth who were identified in either the Complete Mental Health or Vulnerable group (i.e., both which did not have elevated levels of psychopathology per teacher report) had means values which were greater than those in either the Symptomatic but Content or Troubled groups. Regarding teacher perceptions of both relationship satisfaction and instrumental help, those students with elevated levels of psychopathology had lower teacher-student relationship ratings in comparison to students with low psychopathology. In sum, it appears that the presence of psychopathology symptoms co-occurs with diminished teacher-perceived relationship quality, regardless of student SWB level, and minimal psychopathology co-occurs with higher teacher-perceived relationship quality, regardless of SWB level.

These findings differ from both student perceptions of social support within this study as well as previous studies (Renshaw & Cohen, 2014; Suldo & Shaffer, 2008; Suldo et al., 2016) which have indicated wellness co-occurring with positive social outcomes, suggesting it may

serve as a protective factor from less desirable outcomes as well as a facilitator of more positive outcome. Thus, the hypotheses that those who were identified as having high SWB would report the highest means on both teacher reported measures of social functioning could not be confirmed as SWB was tied to student-perceived social functioning, whereas psychopathology was tied to teacher-rated social functioning in this sample.

Further Evaluation of Mental Health Profiles: Psychopathology Make-Up

Psychopathology is conceptualized using behavioral definitions, specifically symptoms which yield two broad categories (American Psychiatric Association, 2000). Externalizing disorders (i.e., aggression, hyperactivity) are more outwardly focused, while internalizing behaviors (i.e., depression, anxiety) are more inwardly focused. Psychopathology is a long-standing component of mental health assessment and treatment in youth, adolescents, and adults and previous research has noted it is associated with poor academic and social outcomes throughout life (Gresham & Kern, 2004; Merikangas et al., 2009; Merikangas et al., 2010; Nail et al., 2015; Whitcomb & Merrell, 2013).

This study sought to further evaluate the research of Thalji (2012) and Doll (2008) on psychopathology make-up and the differences between internalizing and externalizing behaviors between and within each of the DFM mental health groups. In this study, mental health problems were conceptualized by elevated gender specific scores on teacher-reported measures of student's externalizing (i.e., ≥3 for girls, ≥7 for boys) or internalizing behaviors (i.e., ≥3 for girls, ≥4 for boys). Through this method, 27.53% (N = 49) of the participants met criteria for elevated levels of psychopathology, either elevated internalizing, externalizing, or both. Although this sample yielded a percentage of students who displayed mental health concerns which was greater in comparison to prior studies (i.e., 21%; U.S. Department of Health and

Human Services, 1999), previous prevalence rates were primarily based on formal diagnoses. However, the inclusion method of the current study, identifying youth with considerable "at-risk" or elevated symptoms of psychopathology is aligned with ethical standards which are set forth for the practice of evaluating youth mental health in school systems (Merrell, 2008).

In terms of between group characteristics specific to externalizing behaviors, those who were classified as having "low levels" of psychopathology symptoms (i.e., CMH, Vulnerable) had significantly less teacher-reported values than those who were identified as having "elevated" symptoms (i.e., SBC, Troubled). This is logical given that the gender specific cutoff scores chosen for classification of symptoms were used to assign students to those mental health groups that included high versus low psychopathology pairs. However, those groups who were classified as having "low" levels of psychopathology had no significant differences in their levels of externalizing behavior, despite those in CMH group having elevated levels of SWB. Findings from the current study suggest that in this developmental age group, vulnerable youth may not be a clinically "at risk" group in terms of sub-threshold elevations in externalizing behaviors; instead, they were distinguished from the CMH group purely by their diminished SWB. Similarly, those groups who were classified as having "high" levels of psychopathology had no significant differences in their levels of externalizing behavior, despite those in SBC having elevated levels of SWB. Although the initial hypothesis that the CMH group would have lower mean scores for externalizing behavior when compared to the other three mental health groups was not supported, these findings do provide evidence that SWB and psychopathology are more separable constructs in this age range. In sum, in this study, SWB was not predictive of significantly different values of externalizing behaviors, when comparisons were made between

groups with similar levels of psychopathology. Also notable, students who were identified in the SBC group had as high of levels of externalizing behaviors as their peers in the Troubled group.

In terms of between group characteristics specific to internalizing behaviors, those who were classified as having "low levels" of psychopathology symptoms (i.e., CMH, Vulnerable) had significantly lower teacher reported values than those who were identified as having "elevated" symptoms (i.e., SBC, Troubled). Again, this was expected since the gender specific cutoff scores chosen for classification of symptoms informed group assignments to high versus low psychopathology pairs. However, despite those in the CMH group reporting elevated levels of SWB, their levels of internalizing behavior did not differ significantly when compared to those in the Vulnerable group, who reported low levels of SWB. Again, in this developmental age group, vulnerable youth do not appear to be a clinically "at risk" group in terms of sub-threshold elevations in internalizing behaviors; rather, they were distinguished from the CMH group purely by their diminished SWB. Thus, although the hypothesis that those in the CMH group would have less teacher reported internalizing behaviors when compared to the other three groups was not supported, these findings provide interesting evidence that SWB and psychopathology are more separable constructs in children with low levels of psychopathology. Regarding the groups of students with elevated psychopathology, those identified in the Troubled group experienced significantly greater symptoms of internalizing behavior, when compared to the SBC group. These results are similar to the findings of Thalji (2012), indicating that SWB served as a protective factor in the SBC group, in terms of internalizing behaviors. These findings also provided evidence to Doll's (2008) claim that internalizing behaviors may be more dependent on the presence or absence of SWB. Therefore, SWB may serve as a protective factor for internalizing behaviors in those youth with elevated levels of primarily externalizing

forms of psychopathology. Overall, differences in this sample regarding internalizing behaviors across the four mental health groups were dependent on both positive and negative indicators of mental health. However, in terms of youth with no clinically impairing levels of psychopathology, SWB and psychopathology could be considered separate constructs.

In terms of within group comparison, there were no significant differences between teacher-reported levels of internalizing and externalizing behaviors within each of the mental health groups. It was hypothesized that those in the SBC group would have greater teacher reported mean values for externalizing behaviors, when compared to internalizing behaviors. It was also hypothesized that the troubled and vulnerable groups would have greater teacher reported mean values for internalizing behaviors, when compared to externalizing behaviors. In sum, none of the initial hypotheses regarding differences in group specific psychopathology make-up were confirmed. This could be attributed the sole reliance on teachers to quantify students' level of psychopathology, or due to diminished power to detect an effect given the relatively small size of the three smallest mental health groups. However, this lack of differences within each of the mental health groups does not indicate if clinical levels of impairment were identified within any group, which is more likely to become apparent in between group comparisons. These results differ from those of Thalji (2012), who found key differences in the psychopathology make-up of the four mental health groups (i.e., SBC had greater externalizing than internalizing behaviors), but notably had psychopathology behaviors informed by multiple raters (student report for internalizing psychopathology, teacher report for externalizing). Also, certain mental health groups in the present study were small in terms of composition (i.e., Troubled mental health group= 16 youth), which could have made it more difficult for groups to meet the statistical power needed to distinguish within group differences.

Contributions to the Literature

This study contributes to school based mental health literature regarding the Dual-Factor Model of Mental Health (Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008; Suldo et al., 2016). Due to the increasing efforts to incorporate both positive and negative indicators of mental health assessments, this study provides insight to the DFM mental health groups in an elementary school sample, which has only been obtained in one previous study (Greenspoon & Saklofske, 2001). Therefore, these findings help to validate the model across an upper elementary sample. These results are consistent with previous findings that almost two-thirds of students met criteria for Complete Mental Health and report consistently positive social outcomes across several measures, in comparison to their classmates with both decreased levels of SWB and elevated levels of psychopathology. This study provides evidence that increased levels of student SWB were associated with positive outcomes specific to youth perceptions of their social functioning with teachers and classmates. Therefore, intervention and prevention efforts which focus on increasing students SWB, while also reducing symptoms of psychopathology, regardless of the externalizing or internalizing nature, might yield beneficial outcomes in terms of social functioning. It may also be, however, that improving social functioning leads to increased SWB; the cross-sectional nature of the current study precludes understanding of the directionality between key constructs.

By examining students social functioning with both teachers and classmates, greater understanding of the connection between mental health and interpersonal relationship functioning is gained. Given that development of sufficient interpersonal relationships is important for school success, assessments of mental health that include both positive and traditional negative indicators (i.e., traditional assessments of mental illness) should provide

school psychologists with added information regarding students who are at-risk in terms of social functioning. Additionally, those students with elevated levels of both SWB and psychopathology may not be identified as "at-risk" based on their elevated levels of SWB, which may mask their elevated psychopathology symptoms. Based on the elementary school sample, this study promotes the idea of early intervention and preventative efforts being developed and implemented to promote happiness.

This study has also expanded the conceptualization and understanding of the DFM by examining specific components of psychopathology across each mental health group. This study yielded results indicating those students identified as having "elevated levels" of psychopathology have significantly higher mean values of externalizing behavior in particular, when compared to their "low level" peers across the four mental health groups. In contrast, particularly high levels of internalizing symptoms were confined to the Trouble group, where mean values on the SIBS were greater than observed for the SBC group. Finally, the described findings indicated no differences within groups between mean levels of internalizing and externalizing behavior.

Implications for School Psychologists

Children experience many changes throughout elementary school and meeting proper academic, developmental, and social milestones is critical for fostering long-term success (Baker et al., 2006; Baker et al., 2008). Thus, schools should seek to ensure students meet appropriate levels of social functioning with teachers and classmates. Previous studies have indicated greater interpersonal connectedness in students who had greater levels of SWB and decreased levels of PTH (Renshaw & Cohen, 2014; Suldo et al., 2016). The current study provides evidence to indicate that those elementary students who exhibit high levels of SWB report strengthened

relationships with their classmates and teachers. Additionally, this study provides evidence that elementary students with elevated levels of psychopathology and decreased levels of SWB have greater difficulties forming quality relationships with school teachers and classmates. Therefore, this framework of mental health emphasizes a focus for school psychologists to ensure the presence of SWB (i.e., new conceptual framework), as opposed to solely the absence of psychopathology (i.e., traditional, medical model framework).

Additionally, advocating for school programs to enhance SWB and increase interpersonal connectedness is warranted. These results champion the idea of school psychologists delivering services focused on increasing wellness early on in children's schooling, based on the elementary school student sample of this study. Also, teacher training, classroom activities, and school wide curriculum could include content and information that can be used to promote student wellness and facilitate meaningful relationships (e.g, Well-Being Promotion Program; Suldo et al., 2016).

From an assessment standpoint, this study identified 27.53% of youth participants as meeting criteria for elevated or "at risk" levels of psychopathology. These findings support the importance of utilizing the DFM from an identification standpoint, to ensure all "at-risk" students can be identified. School wide initiatives should occur through the form of school- and/or classroom-wide screenings to assess students' levels of perceived wellness and psychopathology behaviors. Utilizing brief teacher report measures (e.g., SIBS or SEBS) to serve as a method to identify students with clinical levels of psychopathology could assist in the identification of "at risk" students. Also, ensuring that school psychologists acknowledge the importance of assessing well-being and providing them with brief assessment measures to effectively examine the mental health of each child would be valuable. The utilization of brief and psychologically sound measures, such as the Brief Multidimensional Student's Life

Satisfaction Scale (Seligson et al., 2003) would yield information about the student's life satisfaction in five domains of life (i.e., family, friendships, school) and a school psychologist could tailor interventions that address specific areas of functioning which a child may need additional support (e.g., social skills training group with classmates).

Limitations of the Current Study

There are several limitations of the current study which are critical to note. First, access to an archival dataset provided the data which was used in the analysis to answer the research questions of interests. Written documentation ensuring the integrity and validity was obtained from the researchers that coordinated the original data collection, to provide evidence that appropriate steps were taken to ensure the reliability and validity of the data that were collected. The author of this study also participated in the data collection (as part of an approved member of the positive psychology research team that was assisting then doctoral candidate Hearon) and can personally attest to the validity of the data collected. It also is important to note that student responses were evaluated to guarantee that the obtained measures were completed appropriately by participants. Thus, there is little concern that the archival dataset contains improper data. However, since this study only examined 4th and 5th grade students, the ability to generalize these results to a population of greater range (e.g., all elementary school children) is limited, and access to a dataset that may have had a greater age range may have been beneficial.

Another limitation of this study was the means of measuring the internalizing behaviors of participants were completed solely by each participant's teacher. A self-report measure of students internalizing behavior would have been ideal to gain a more accurate understanding of the perceived internalizing behaviors by participants. It is more difficult for teachers to identify those students that have elevated internalizing behaviors as ratings are based more on teacher's

perceptions of student's own personal feelings, as opposed to externalizing behaviors, which teacher rate based on the students' actions they observe in their classroom. However, a strength of this study was the use of both self-report (i.e., CASSS; Malecki, Demaray, & Elliot, 2000) and teacher ratings (i.e., TSRI; Ang, 2005) of social functioning between the participant and their teacher. Thus, viewpoints regarding social functioning from both the teachers and students were obtained. Regarding the classroom structure, this researcher acknowledges the data were not entirely independent because each participant is linked to a specific teacher, and each teacher is linked to a specific set of students. Based on the fact the data are considered nested, the intraclass correlation was examined during the preliminary analysis to ensure there were no confounding variables.

The final limitation that this researcher has acknowledged is the research design and the classifications of mental health groups. By categorizing the mental health groups into two dichotomized variables, it is important to realize that some data are lost, particularly with those participants who are close to or approaching a cutoff score which alters status on a measure of SWB or PTH (e.g., a participant who is a point short of clinically significant psychopathology levels is classified as having "low psychopathology levels" and into a specific mental health group). However, the choice to dichotomize mirrors routine procedures in actual clinical practice and the methodologies of previous studies.

Summary and Future Directions

The current study has enhanced the literature pertaining to the Dual-Factor Model of Mental Health by providing a recent examination in an elementary school sample. This study further validates the model by identifying a unique portion of students in each quadrant within an upper elementary school sample, which had not been recently examined, utilizing more recent

procedures (i.e., not eliminating borderline students). This study also comprehensively examined several domains regarding the social functioning of elementary school students (i.e., teacher perceived relationship satisfaction, instrumental health, and student perceptions of support from teachers and peers.). Previous studies have examined other constructs of social functioning within other age groups, such as emotional support (Lyons et al., 2012), interpersonal connectedness (Renshaw & Cohen, 2014), social problems (Suldo & Shaffer, 2008), romantic relationship satisfaction (Suldo et al., 2016), and perceived support from classmates and teachers (Suldo & Shaffer, 2008; Suldo et al., 2016). Regarding the only other study of the DFM in elementary students, Greenspoon and Saklofske (2001) examined interpersonal relationship quality and self-perception of social acceptance, in terms of social functioning. Thus, the utilization of DFM model supports the notion that solely evaluating psychopathology is not predictive of the best outcomes regarding social functioning in school. Specifically, those students who were classified in the Complete Mental Health group (i.e., low PTH, high SWB) consistently yielded positive results for the mean values of each indicator of social functioning. Regarding outcome variables which were completed by participants (CASSS teacher and classmate support scales), the mean values were comparable for students in the CMH and SBC groups. However, regarding outcome variables which were completed by teachers (TSRI instrumental help and relationship satisfaction scales) the means were comparable between those in CMH and Vulnerable groups. Thus, there were circumstances when those identified as Symptomatic but Content yielded positive results (i.e., high teacher and classmate support), which could be largely attributed due to their elevated levels of SWB. Furthermore, the model was additionally evaluated through the examination of both internalizing and externalizing measures which allowed for between and within group comparisons of

psychopathology to be made. In this study, findings indicated limited differences between groups, representing that levels of both internalizing and externalizing behaviors were similar within each mental health group although the SBC group had notably lower internalizing scores than the Troubled group.

Based on the findings from this study, continued research on the conceptualization of the DFM and the overall well-being of elementary school children is warranted. It would heed future researchers to examine the model in a more comprehensive sample including all students in typical elementary schools (i.e., Kindergarten through 5th grade). This notion is warranted to gain additional validation of the model and the presence of it within an elementary school sample. Regarding mental health status outcome variables, future studies should assess student characteristics (e.g., peer networks, friendships, etc.) and other components of social functioning, as well as other vital indicators of school success (e.g., academic achievement) to provide a richer understanding of the model in elementary school students and to inform school psychology practice and service delivery. Future studies could also examine the accuracy of teachers identifying students' internalizing and externalizing behaviors when compared to student self-report measures of these behaviors (i.e., Cunningham & Suldo, 2014). Additionally, the relationship between overall school connectedness and mental health status could be reviewed.

As this model is evaluated and the impact of mental health status on specific outcomes variables is further explored, longitudinal studies should focus on the stability of the model over time. Also, the impact of interventions directed at increasing the SWB of participants across mental health groups could yield interesting findings. Specifically, research could examine the mental health status stability of participants in each of the mental health groups and the impact of

interventions focused on increasing SWB of youth in each of the four mental health groups. However, future studies would need to utilize standardized or pre-established cut-scores across time points to ensure youth movement between groups is dependent on changes in what were considered initial clinical levels of impairment (i.e., of psychopathology), as opposed to solely the distribution of scores at each time point. Through this practice, additional information can be acquired pertaining to assessment and intervention appropriate for young children, increasing SWB, and decreasing psychopathology related behaviors.

Finally, additional examination of the differences between group's psychopathology symptoms is recommended to further inform assessment, intervention, treatment, and the general impact of these behaviors. Exploration of psychopathology related behaviors in combination with SWB is critical to view mental health through an all-inclusive framework. Providing participants with self-report measures of psychopathology symptoms could yield alternative findings across each of the mental health groups. For example, understanding that students in the Symptomatic but Content group typically report higher levels of externalizing problems as compared to internalizing problems could inform school psychologist of the appropriate direction for intervention or prevention. This point is relative to that of Doll (2008), who noted the vital importance of reevaluating this categorical framework to successfully address the complexity of psychopathology and to continuously formulate an all-encompassing framework of mental health.

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APPENDIX A:

Parent Consent Form

Dear Parent or Caregiver:

This letter provides information about a research study that will be conducted in your child's school by investigators from the University of South Florida (USF). Prior research has found that happy students and teachers create a classroom climate that promotes academic learning. Students who are happiest achieve the best in school, have the best attitudes towards learning, and the healthiest social relationships. Therefore, Brooker Elementary School will be implementing a well-being promotion program in fourth and fifth grade classrooms during the 2015-2016 school year. The program is intended to improve students' relationships with teachers and classmates, as well as teach students strategies for increasing their personal happiness. You will be invited to learn more about the program when your classroom is set to begin the curriculum. This letter provides information about the evaluation we will conduct to determine the effect of the well-being promotion program on students' emotional and academic well-being.

- ✓ Who We Are: The research team is led by Dr. Shannon Suldo, a Professor in the School Psychology Program at USF, and doctoral students Brittany Hearon and Mollie McCullough. We are planning the study with Brooker administrators to ensure that the study provides information that will be helpful to the school.

- ✓ Why We are Requesting Your Child's Participation: This study is being conducted as part of a project entitled, "Improving the Happiness of Elementary School Students and Teachers." Your child is being asked to participate in this project because he or she is enrolled in fourth or fifth grade.

- ✓ Why Your Child Should Participate: Schools need evidence-based strategies to promote students' social and emotional well-being, and prevent mental health problems. To address this need, we are evaluating a well-being promotion program implemented in all fourth and fifth grade classrooms at Brooker Elementary School. Classroom-level results of the study will be shared with the student services staff, teachers, and administrators at Brooker in order to increase their knowledge of activities that promote emotional well-being in students. Please note that neither you nor your child will be paid for your child's participation in this study. However, the fourth and fifth grade classrooms with the highest percentage of returned parent permission (consent) forms will receive a snack party.

- ✓ What Participation Requires: All fourth and fifth grade classes will take part in the well-being promotion program during the 2015-2016 school year. Some classrooms will take part toward the beginning of the year, and other classrooms will start later in the year. Children with permission to participate in this study will complete several paper-and-pencil surveys on five occasions throughout the school year. These surveys will ask about your child's thoughts, behaviors, and attitudes towards life, as well as well-being and classroom relationships. Completion of surveys is expected to take about 45 minutes on each of five occasions. We will administer the surveys at Brooker, during regular school hours, to groups of students in the class who have parent permission to take part. Your child's teacher will also rate your child's engagement in the classroom and teacher-student relationship quality. Another part of participation involves a review of your child's school records. Under the supervision of school administrators, we will retrieve this information: grades earned in classes, FSA scores, attendance, and number of discipline referrals incurred. In total, participation will take about four hours of your child's time.

- ✓ Please Note: Your decision to allow your child to participate in this research study must be completely voluntary. You or your child's decision to participate, not to participate, or to withdraw participation at any point during the study will no way affect your child's student status, his or her grades, or your relationship with Brooker, USF, or any other party.

- ✓ Confidentiality of Your Child's Responses: There is minimal risk to your child for participating in this research. 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 surveys 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 five years after the study is completed. Please note that although your child's specific responses will not be shared with school staff, if your child's responses on specific surveys indicate extreme emotional distress, we will contact district mental health counselors to ensure your child's safety as well as the safety of others.

- ✓ What We'll Do With Your Child's Responses: We plan to use the information from this study to inform educators and school mental health providers about activities that foster feelings of happiness in youth, and educate others about the link between happiness and school success. 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 Office of Research Integrity and Compliance at the University of South Florida at 813-974-5638, and refer to eIRB # 23292.

- ✓ Want Your Child to Participate? To permit your child to participate in this study, complete the consent form below (titled "Consent to Take Part in this Research Study") and have your child turn it in to his or her teacher. Please keep the other copy of this form for your records.

Sincerely,

Shannon Suldo, Ph.D. — Professor of School Psychology
Brittany Hearon, M.A. — School Psychology Doctoral Student
Mollie McCullough, M.A. — School Psychology Doctoral Student
Department of Educational and Psychological Studies, College of Education

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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	Teacher

Signature of parent of child taking part in the study	Printed name of parent	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 obtaining consent	Printed name of person obtaining consent	Date

APPENDIX B:

Student Assent Form

Dear Student:

You are being asked to take part in a research study to determine the effect of a well-being promotion program on students' happiness and performance at school. The title of the study is "Improving the Happiness of Elementary School Students and Teachers." The goal of this study is to learn more about activities that increase students' happiness. This is important because students who are happy earn better grades, have better social relationships, and have the best attitudes towards school. The fourth and fifth grade classes at your school will take part in the well-being promotion program. You are being asked to take part in this study because you are a fourth or fifth grade student. Your parent/guardian has already said it is okay for you to take part in this study.

To participate in this study, you will be asked to fill-out brief surveys now and a few more times throughout the school year. These surveys will ask you questions about your thoughts, beliefs and attitudes towards life. Other surveys will ask about your happiness and relationships in the classroom. Your answers will stay private unless you are in danger, then we will have to get help to make sure you stay safe. If you decide to take part in the study you still have the right to change your mind later. No one will think badly of you if you decide to stop.

Assent to Take Part in this Research Study

I understand what the person running this study is asking me to do. I have thought about this and agree to take part in this study.

_____
Name of person agreeing to take part in the study

_____
Signature of person agreeing to take part in the study

_____
Name of person providing information to child

_____
Signature of person providing information to child

DEPARTMENT OF EDUCATIONAL AND PSYCHOLOGICAL STUDIES • COLLEGE OF EDUCATION
University of South Florida • 4202 East Fowler Avenue – EDU 105 • Tampa, FL 33620-5650
(813) 974-3246 • FAX (813) 974-5814

APPENDIX C:

Student Demographics Form

ID # _____ Fall 2015

Birthdate ____-_____-_____
(month) (day) (year)

PLEASE READ EACH QUESTION AND CIRCLE THE BEST ANSWER TO EACH ITEM:

1. My gender is: Boy Girl
2. Do you receive free or reduced lunch? Yes No
3. Are you of Hispanic, Latino, or Spanish origin?
   a. No, not of Hispanic, Latino, or Spanish origin
   b. Yes, Mexican American, Chicano
   c. Yes, Puerto Rican
   d. Yes, Cuban
   e. Yes, another Hispanic, Latino, or Spanish origin (please specify): _____

4. My race/ethnic identity is (Circle all that apply):
   a. White
   b. Black or African American
   c. Asian
   d. American Indian/Alaska Native
   e. Native Hawaiian or Other Pacific Islander
   f. Other (please specify):_____

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

6. I live with my:
   a. Mother and Father
   b. Mother only
   c. Father only
   d. Mother and Stepfather
   e. Father and Stepmother
   f. Grandparent(s)
   g. Other relative:_____
   h. Other:_____

APPENDIX D:

Students' Life Satisfaction Scale (SLSS)*

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.

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

*This measure is free to the public domain.

APPENDIX E:

Ten-Item Positive and Negative Affect Schedule for Children*

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.

	Feeling or emotion:	**Very slightly or not at all**	**A little**	**Moderately**	**Quite a bit**	**Extremely**
1.	Sad	1	2	3	4	5
2.	Happy	1	2	3	4	5
3.	Scared	1	2	3	4	5
4.	Miserable	1	2	3	4	5
5.	Cheerful	1	2	3	4	5
6.	Proud	1	2	3	4	5
7.	Afraid	1	2	3	4	5
8.	Joyful	1	2	3	4	5
9.	Mad	1	2	3	4	5
10.	Lively	1	2	3	4	5

*This measure is free to the public domain.

APPENDIX F:

Student Internalizing Behavior Screener (SIBS) & Student Externalizing Behavior Screener (SEBS)*

Directions: Please rate each student named below on each behavior using the following scale, ranging from *never* to *frequently*:
1 = Never, 2 = Rarely/Seldom, **3 = Occasionally/Moderately, 4 = Frequently/Almost Always***
For each student, write the number that corresponds to the frequency rating in each cell.

Student:	Example: John Doe	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
Defiant or oppositional to adults	1																		
Lies to get out of trouble	1																		
Disrupts class activities	3																		
Bullies others	4																		
Gets angry or upset easily	1																		
Fights or argues with peers	1																		
Has difficulty sitting still	2																		
Appears nervous, worried, or fearful	4																		
Bullied by peers	4																		
Spends free time alone	1																		
Clings to adults	4																		
Withdrawn	2																		
Seems sad or unhappy	1																		
Complains about being sick or hurt	3																		

**Note*. Initial measures (Cook et al, 2011; Cook et al., 2012) utilized scale from 0-3. Variables were transformed to mirror prior studies. This measure is free to the public domain.

APPENDIX G:

Child and Adolescent Social Support Scale (CASSS)

On this page, please respond to sentences about some form of support or help that you might get from either a parent, a teacher, or classmates. Read each sentence carefully and respond to them honestly. **Rate how often you receive the support described**. Do not skip any sentences. Thank you!

	My Classmates	Never	Almost Never	Some of the	Most of the	Almost Alway	Alway s
1	… treat me nicely.	1	2	3	4	5	6
2	… like most of my ideas and opinions.	1	2	3	4	5	6
3	… pay attention to me.	1	2	3	4	5	6
4	… give me ideas when I don't know what to do.	1	2	3	4	5	6
5	… give me information so I can learn new things.	1	2	3	4	5	6
6	… give me good advice.	1	2	3	4	5	6
7	… tell me I did a good job when I've done something well.	1	2	3	4	5	6
8	… nicely tell me when I make mistakes.	1	2	3	4	5	6
9	… notice when I have worked hard.	1	2	3	4	5	6
10	… ask me to join activities.	1	2	3	4	5	6
11	… spend time doing things with me.	1	2	3	4	5	6
12	… help me with projects in class.	1	2	3	4	5	6

	My Teacher(s)	Never	Almost Never	Some of the	Most of the	Almost Alway	Alway s
13	… cares about me.	1	2	3	4	5	6
14	… treats me fairly.	1	2	3	4	5	6
15	… makes it okay to ask questions.	1	2	3	4	5	6
16	… explains things that I don't understand.	1	2	3	4	5	6
17	… shows me how to do things.	1	2	3	4	5	6
18	… helps me solve problems by giving me information.	1	2	3	4	5	6
19	… tells me I did a good job when I've done something well.	1	2	3	4	5	6
20	… nicely tells me when I make mistakes.	1	2	3	4	5	6
21	… tells me how well I do on tasks.	1	2	3	4	5	6
22	… makes sure I have what I need for school.	1	2	3	4	5	6
23	… takes time to help me learn to do something well.	1	2	3	4	5	6
24	… spends time with me when I need help.	1	2	3	4	5	6

*This measure is free to the public domain.

APPENDIX H:

Teacher-Student Relationships Inventory (TSRI)

These next questions ask about your relationship with _____. Please circle a number from (**1**) to (**5**), in which (**1**) indicates you feel the statement is **almost never true** and (**5**) indicates you feel the statement is **almost always true.** It is important to know what you REALLY think, so please answer the question the way you really feel, not how you think you should. All answers are confidential.

	Almost Never True	Seldom True	Sometimes True	Often True	Almost Always
1. I enjoy having this student in my class.	1	2	3	4	5
2. If the student has a problem at home, he/she is likely to ask for my help.	1	2	3	4	5
3. I would describe my relationship with this student as positive.	1	2	3	4	5
4. This student frustrates me more often than most other students in my class.	1	2	3	4	5
5. If this student is absent, I will miss him/her.	1	2	3	4	5
6. The student shares with me things about his/her personal life.	1	2	3	4	5
7. I cannot wait for this year to be over so that I will not need to teach this student next year.	1	2	3	4	5
8. If this student is absent, I feel relieved.	1	2	3	4	5
9. If this student needs help, he/she is likely to ask me for help.	1	2	3	4	5
10. The student turns to me for a listening ear or for sympathy.	1	2	3	4	5
11. If this student is not in my class, I will be able to enjoy my class more.	1	2	3	4	5
12. The student depends on me for advice or help.	1	2	3	4	5
13. I am happy with my relationship with this student.	1	2	3	4	5
14. I like this student.	1	2	3	4	5

*This measure is free to the public domain.

APPENDIX I:

Institutional Review Board Letter of Approval

USF
UNIVERSITY OF SOUTH FLORIDA

RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
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9/2/2015

Shannon Suldo, Ph.D.
Educational and Psychological Studies
4202 East Fowler Ave., EDU 105
Tampa, FL 33620

RE: **Full Board Approval for Initial Review**
IRB#: Pro00023292
Title: Improving the Subjective Well-being of Elementary School Students and Teachers: Efficacy of Classwide and Teacher-Focused Positive Psychology Interventions

Study Approval Period: 8/21/2015 to 8/21/2016

Dear Dr. Suldo:

On 8/21/2015, the Institutional Review Board (IRB) reviewed and **APPROVED** the above application and all documents contained within, including those outlined below.

Approved Item(s):
Protocol Document(s):
Study Protocol_Research Design

Consent/Assent Document(s)*:
Parent Consent_Positive Psychology Program Evaluation_V1_USF_Updated 8-27-15.pdf.pdf
Student Assent_Positive Psychology Program Evaluation_V1__Updated 8-27-15_USF.pdf.pdf
Teacher Consent Form (Strengths-Based Intervention)_Positive Psychology Program Evaluation_V1_Updated 8-27-15.pdf.pdf
Teacher Consent_Positive Psychology Program Evaluation_V1_8-27-15.pdf.pdf

*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab. Please note, these consent/assent document(s) are only valid during the approval period indicated at the top of the form(s).

This research involving children was approved under the minimal risk category 45 CFR 46.404: Research not involving greater than minimal risk.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval via an amendment. Additionally, all unanticipated problems must be reported to the USF IRB within five (5) calendar days.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

John Schinka, Ph.D., Chairperson
USF Institutional Review Board