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# The Relationship between Gratitude and Psychological, Social, and Academic Functioning in Middle Adolescence

Michelle Denise Hasemeyer

University of South Florida, michelle.hasemeyer@gmail.com

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The Relationship between Gratitude and Psychological, Social, and Academic  
Functioning in Middle Adolescence

by

Michelle D. Hasemeyer

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

Major Professor: Shannon Suldo, Ph.D.  
Kathy Bradley-Klug, Ph.D.  
John Ferron, Ph.D.

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## DEDICATION

First and foremost, I want to dedicate this project to my one and only God, Jesus Christ. He is the giver of all things good, including the self-discipline, drive, and knowledge needed to undertake this thesis. I am truly grateful for His saving grace in my life.

I would also like to dedicate this thesis to my loving and supportive family. Specifically, to my mother, Denise, who has encouraged, challenged, and supported me my entire life to be the best student and learner I could be. Thank you for believing in me even when I did not believe in myself. To my father, Phil, thank you for being there to provide perspective and offer a place of retreat from graduate studies. Sunday afternoon games of Scrabble were a lifesaver for me during this whole thesis-writing process. To my amazing brothers and sisters, thank you for keeping me laughing and keeping life interesting. You really are a blessing to me. And to my loving husband, Chandler, thank you for helping me to see life's possibilities and for motivating me to complete this project. I am grateful for the love and joy you bring to my life.

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## ABSTRACT

Guided by positive psychology and broaden-and-build theoretical frameworks, this study utilized a correlational research design to explore the relationships between gratitude and adolescents' psychological, social, and academic well-being in a diverse sample of 499 high school students. Results of multiple regression analyses that controlled for potential effects of student demographic features on outcomes showed that higher levels of gratitude predicted more life satisfaction ( $\beta=.63, sr^2=.40$ ), less internalizing symptoms ( $\beta= -.44, sr^2= .19$ ), more social support from parents ( $\beta=.50, sr^2=.25$ ), teachers ( $\beta=.28, sr^2=.08$ ), and peers ( $\beta=.34, sr^2=.12$ ), higher grades ( $\beta=.12, sr^2=.014$ ), and better academic self-perceptions ( $\beta=.30, sr^2=.09$ ). These relationships were generally the same for boys and girls, with the exception that the inverse link between gratitude and internalizing symptoms of psychopathology was stronger for girls than for boys. Social support from parents partially mediated the relationship between gratitude and life satisfaction, fully mediated the relationship between gratitude and internalizing symptoms for boys, and partially mediated the relationship between gratitude and internalizing symptoms for girls. Teacher support partially mediated the relationship between gratitude and students' academic self-perceptions. These mediator effects provide support for Frederickson's (2001) broaden-and-build theory of positive emotions in that gratitude builds and strengthens student's supportive social network, which in turn

leads to better psychological and academic functioning. Implications of findings for school psychology practice and future directions for research are discussed.

## CHAPTER 1: INTRODUCTION

### Statement of the Problem

Traditionally, childhood psychology has mirrored the study of psychology amongst adults in that the focus has typically been on understanding and treating psychopathology, maladjustment, and disordered behavior (Kirschman, Johnson, Bender, & Roberts, 2009). Within the past couple of decades, however, there have been a growing number of calls within the field of psychology for a shift from a disease model and illness ideology toward an understanding of psychological wellness. In other words, researchers and practitioners are increasingly realizing that mental health is not simply the absence of psychopathology but also the presence of positive indicators of well-being and functioning (Seligman & Csikszentmihalyi, 2000).

Following this paradigm shift has been the emergence of the positive psychology movement, a field within psychology that seeks to systematically study what makes life worth living and which human experiences constitute a good life. Specifically, researchers within the positive psychology paradigm seek to understand and cultivate human strengths, competencies, and cognitive, emotional and interpersonal experiences that lead to optimal functioning (Seligman & Csikszentmihalyi, 2000). The goal of positive psychology is not to dismiss the task of identifying and treating psychopathology, but rather to augment this traditional role by offering a platform for systematically studying what makes people mentally healthy (Snyder & Lopez, 2002).

One of the foundational pillars of the positive psychology movement is character development (Seligman & Csikszentmihalyi, 2000). Character is defined as “the entire set of positive traits that have emerged across cultures and throughout history as important for a good life” (Park & Peterson, 2009, p. 67). An individual does not possess “good character” just because he or she does not demonstrate personality deficits, problems, or pathology; rather, good character is represented by the presence of a cluster of positive traits, also known as character strengths. Character strengths, then, “are the subset of personality traits on which moral value is placed” (Park & Peterson, 2009, p.68). The presence of character strengths (e.g., hope, kindness, optimism, self-control) in youth not only promotes well-being but also protects against psychological distress in the face of stress, trauma, and other risk factors (Park, 2004). The positive psychology movement specifically emphasizes the importance of the identification and cultivation of human character strengths so that individuals, and society as a whole, can enjoy a good and fulfilling life (Park & Peterson, 2009). Thus, studying character strengths in youth is a worthy pursuit.

One character strength that has received increased attention in both the scientific community (for review see Emmons & McCullough, 2004) and popular culture (e.g., Emmons & Hill, 2001; Hay, 1996; Lesowitz & Sammons, 2009) is gratitude. Gratitude is most simply defined as “being aware of and thankful for the good things that happen” (Park & Peterson, 2006a, p. 894). While moral philosophers and religious thinkers have recognized gratitude as being beneficial to experiencing a happy and good life for centuries, scientific researchers have only recently begun to systematically study gratitude (Peterson & Seligman, 2004). Thus far, the majority of this research has focused

on adults. Specifically, several correlational and empirical studies have demonstrated links between gratitude and enhanced functioning in adults (Peterson & Seligman, 2004). For example, McCullough, Emmons, and Tsang (2002) found that a disposition toward gratitude was positively associated with positive affect, life satisfaction, pro-social behaviors, and religiousness/spirituality and negatively associated with envy and materialism. Similarly, Watkins, Woodward, Stone and Kolts (2003) found positive relationships between gratitude and various measures of subjective well-being, positive affect, happiness, intrinsic religiosity, and internal locus of control, while they found negative relationships between gratitude and depression, negative affect, aggression, hostility, and narcissism. Additionally, using experimental designs, researchers have found that grateful thinking can improve mood and is predictive of several aspects of psychological, social, and physical well being (Emmons & McCullough, 2003; Watkins et al., 2003).

Due to developmental differences, specific findings and conclusions reached from studies with adults cannot be assumed to hold true for youth (Kirschman et al., 2009). Rather, research focusing specifically on children and adolescents needs to be conducted to determine whether or not conclusions reached with adult populations generalize to younger individuals. To date, there have only been a handful of studies examining the relationships between gratitude and outcomes (i.e., indicators of functioning in any domain of life) in children and adolescents (Chen & Kee, 2008; Froh, Emmons, Card, Bono, & Wilson, 2011; Froh et al., 2010; Froh, Sefick, & Emmons, 2008; Froh, Yurkewics, & Kashdan, 2009; Park & Peterson, 2006a, 2006b). Across these studies exists preliminary evidence that gratitude is related to better psychosocial outcomes in

youth, similar to findings with adults. This emerging body of research is limited by many realities, including: most studies have come from the same group of researchers, samples primarily include Caucasian students from high socioeconomic status (SES) backgrounds, researchers have focused mostly on early adolescents (i.e., middle school students), designs have featured measurement tools with unknown reliability and validity, and studies have left out important psychosocial or educational constructs. Therefore, further investigations examining the role that gratitude plays in the psychosocial and psychoeducational functioning of adolescents, particularly older adolescents, are warranted.

### **Theoretical and Conceptual Framework**

Positive psychology aims to identify variables (e.g., behaviors, cognitions, emotions, experiences, and character traits) that contribute to healthy development in individuals. This perspective emerged from accumulating evidence showing that the absence of psychological disorders and disease is not necessarily synonymous with mental health (Keyes, 2002). The positive psychology approach is a preventative one in that it seeks to promote and enhance well-being rather than wait to treat mental illness (Seligman & Csikszentmihalyi, 2000). As such, positive psychology literature emphasizes the need for mental health professionals to begin their work with individuals early on, in other words, during childhood and adolescence (Cohen & Kilmer, 2002; Seligman, 2005). Experts in the field of positive psychology have stressed the importance of identifying positive indicators of functioning in youth so that these characteristics can be fostered and promoted (Seligman, 2005). One area of research that has shown great promise in promoting positive youth development is the identification of key character

strengths that children and adolescents may possess to varying degrees (Park & Peterson, 2006a). In fact, character development is at the heart of positive psychology and positive youth development (Park & Peterson, 2009), and there is evidence that certain character strengths may serve as protective factors against the negative effects of stress and trauma and function as enablers for school success (for review see Park, 2004).

In their work on character strengths, Park and Peterson (2006a) found that gratitude was one of the traits most frequently identified in young people aged 10 to 17. Furthermore, gratitude was robustly associated with students' life satisfaction, a global indicator of psychological wellness. There is also emerging evidence that gratitude is a character trait that can be fostered through intervention (Emmons & McCullough, 2003; Froh et al., 2008). As such, gratitude is a character trait worth empirical investigation in youth because if it is related to positive outcomes, and it can be increased, then gratitude could potentially be a point of intervention for youth who are at-risk for poor psychosocial adjustment.

Another theoretical framework that guides research on gratitude is the broaden-and-build theory of positive emotions (Fredrickson, 2001). The broaden-and-build theory asserts that positive emotions, such as joy, pride, contentment and love, widen the array of thoughts and actions a person experiences, which in turn builds or strengthens that individual's physical, social, and/or intellectual resources. As a positive emotion, gratitude may also broaden and build (Fredrickson, 2004). Specifically, experiencing gratitude in response to receiving a benefit or gift can create a desire to act in a pro-social manner oneself, either towards the benefactor or towards others (McCullough, Kilpatrick, Emmons, & Larson, 2001). Thus, grateful emotions have the potential to broaden a

person's thought-action pattern by leading them to think about ways in which they can benefit others. Overtime, these broadened experiences have the potential to lead to the building of lasting and enduring social connections and friendships, which are valuable resources (Fredrickson, 2004).

Although the conceptual framework for studying gratitude in youth is strong, research on gratitude in youth has largely been ignored (Bono & Froh, 2009). To date, the handful of studies investigating the potential benefits of gratitude in the lives of children and adolescents have yielded promising findings. For example, gratitude has been linked to greater global life satisfaction, satisfaction with family, satisfaction with school, optimism, and positive affect among middle school students (Froh et al., 2009). Furthermore, middle school students who participated in an intervention designed to invoke feelings of gratitude reported higher post-intervention levels of gratitude, satisfaction with school, satisfaction with their living situation, and optimism, as well as lower levels of negative affect, than students who participated in a condition in which they recounted daily hassles (Froh, et al., 2008).

There is even less research on gratitude among high school students. In one recent study with 9<sup>th</sup> through 12<sup>th</sup> grade students, gratitude was a significant predictor of higher grade point average (GPA), life satisfaction, social integration, and absorption as well as lower levels of envy and depression, even after the potential effects of participant age, gender, SES, ethnicity, and receipt of special education services were controlled for statistically (Froh, Emmons, et al., 2011). While this study represented a significant contribution to the literature in that it was one of the first studies of gratitude in a high school age sample, there were several limitations that necessitate the need for replication.

First, the sample of adolescents was from an unusually high SES background, and ethnic minorities were not equitably represented. Second, the researchers only investigated a narrow range of psychosocial and psychoeducational outcomes. Given that research on gratitude in youth is still in an exploratory stage, an investigation of the interrelationships between gratitude and a wider variety of variables related to adolescent functioning (e.g., socially supportive relationships, academic self-perceptions, various internalizing and externalizing symptoms) is needed in order to advance the existing research past its infancy. Finally, given previous research suggesting that females not only experience higher levels of gratitude than males but may also derive more benefit from its expression (Gordon, Musher-Eizenman, Holub, & Dalrymple, 2004; Kashdan, Mishra, Breen & Froh, 2009), future research should investigate gender as a potential moderator in the relationship between gratitude and psychosocial adjustment.

In sum, despite the strong rationale that the positive psychology framework and the broaden-and-build theory provide for studying gratitude in youth, such research is sparse (Bono & Froh, 2009). Furthermore, the limited amount of research that has been done has largely been conducted by the same group of researchers (e.g., Froh et al., 2008; 2009) and is in need of replication using a more diverse sample of participants. Additionally, there is also a need to expand the number of psychosocial and educational constructs included in such investigations in order to gain a more thorough understanding of how gratitude is related to adolescent functioning.

### **Purpose**

The purpose of the current study was to determine the relationship between gratitude and the psychological, social, and academic functioning of adolescents. Using a

positive psychology framework, overall psychological functioning includes both the absence of psychopathology as well as the presence of indicators of wellness, such as life satisfaction (Seligman & Csikszentmihalyi, 2000). Therefore, the current study examined the relationship between gratitude and both of these domains of psychological functioning. In addition, previous researchers have indicated the importance of studying adolescents' academic functioning and social relationships in order to gain a fuller picture of their overall adjustment and well-being (Suldo & Shaffer, 2008). Furthermore, the broaden-and-build theory suggests that gratitude may strengthen social bonds, which in turn leads to better overall functioning (Frederickson, 2004). Therefore, the current study also examined social support as a mediating variable in the relationship between gratitude and students' well-being. Finally, given that previous research suggests that males and females may view the expression of gratitude differently (Levant & Kopecky, 1995), the current study also explored whether gender moderated the relationships between gratitude and various aspects of adolescents' psychological, social, and academic functioning.

### **Research Questions**

1. To what extent is gratitude related to the psychological well-being of middle adolescents, including the following indicators: life satisfaction, internalizing symptoms, and externalizing symptoms?
2. To what extent is gratitude related to supportive social relationships with parents, teachers, and classmates in middle adolescents?
3. To what extent is gratitude related to the academic functioning of middle adolescents, including the following indicators: grade point average (GPA), standardized reading scores, attendance, and academic self-perceptions?

4. Are the relationships between gratitude and psychological well-being, academic functioning, and supportive social relationships consistent across genders?
5. Does perceived social support mediate the relationship between gratitude and psychological well-being in middle adolescents?
6. Does perceived social support mediate the relationship between gratitude and academic functioning in middle adolescents?

### **Hypotheses**

1. The researcher predicted that there would be a significant correlation between gratitude and life satisfaction, in the .30 to .50 range. This prediction was based on previous research findings with youth populations (Chen & Kee, 2008; Froh, et al., 2008; Froh et al., 2009; Park & Peterson, 2006a). The researcher predicted that there would be a significant correlation between gratitude and internalizing symptoms, in the -.30 to -.50 range. This prediction was based on previous research findings demonstrating that gratitude was moderately and negatively associated with depression in both adults (McCullough et al., 2002; Watkins, et al., 2003) and youth (Froh, Emmons, et al., 2011) as well as anxiety in adults (McCullough et al., 2002). Finally, the researcher predicted that there would be a significant correlation between gratitude and externalizing symptoms, in the -.30 to -.50 range. This prediction was based on previous research with adults showing that gratitude was significantly and negatively correlated with characteristics indicative of externalizing thoughts and behaviors, such as envy, aggression, and hostility (Watkins et al., 2003). In addition, gratitude has moderate positive correlations with characteristics and behaviors that are incompatible with

externalizing behavior, such as cooperativeness and social integration amongst youth (Froh, Emmons et al., 2011; Froh et al., 2010; Park & Peterson, 2006a).

2. The researcher predicted that there would be significant correlations between gratitude and perceived social support from teachers, parents, and classmates, in the .20 to .40 range. These predictions are based on limited prior research with youth, which found small correlations between gratitude and family support ( $r=.18$ ) and gratitude and friend support ( $r=.20$ ) using only single item indicators of the social support constructs (Froh et al., 2009). This investigator expected to find stronger correlations between gratitude and social support by using more technically adequate scales of the constructs of interest.
3. The researcher predicted that there would be a significant correlation between gratitude and GPA, in the .20 to .30, range based on previous research with youth (Park & Peterson 2006a; Froh, Emmons, et al., 2011). The researcher also predicted that correlations between gratitude and standardized reading scores, school attendance, and academic self-perceptions would also fall in the 0.20 to 0.30 range. Given that these three indicators of academic functioning have never been investigated with relation to the character trait of gratitude, the investigator predicted there would be similar relationships between gratitude and these academic variables as there was between gratitude and GPA.
4. Based on previous theoretical and empirical research suggesting that females derive more social and psychological benefits from demonstrating gratitude than do males (Kashdan et al., 2009; Schwartz & Rubel, 2005), this researcher hypothesized that gender would serve as a moderating variable in the

relationships between gratitude and psychological functioning, academic outcomes, and supportive social relationships, with females showing a stronger link between gratitude and psychological, academic, and social outcomes than males.

5. Based on previous theoretical and empirical research suggesting that gratitude may serve to strengthen social bonds which, in turn, promotes better psychological functioning (Frederickson, 2004; Gillham et al., 2011), this investigator predicted that supportive social relationships would at least partially mediate the relationships between gratitude and the three aspects of psychological well-being included in the study (i.e., life satisfaction, internalizing symptoms, and externalizing symptoms).
6. A similar mechanism was anticipated with regard to academic outcomes, in line with the notion that more grateful students may logically be more likely to invite more help from teachers and peers at school, which in turn would improve their academic achievement.

### **Operational Definition of Terms**

**Psychological well-being** refers to the overall mental health of an individual, including both the absence of internalizing and externalizing symptoms as well as the presence of high life satisfaction.

**Internalizing psychopathology symptoms** were operationally defined as the presence of thoughts, behaviors, or feelings indicative of negative emotions and disturbed thoughts associated with psychiatric disorders such as anxiety and depression.

**Externalizing psychopathology symptoms** were operationally defined as the presence of thoughts, behaviors, or feelings associated with problems of disinhibition, such as conduct disorder, aggression, and substance abuse.

**Global life satisfaction** refers to each student's cognitive appraisal of his or her satisfaction with life, without reference to a specific domain of life. Life satisfaction is the cognitive component of subjective well-being, the term commonly used to operationally define happiness (Pavot & Diener, 1993) and served as the indicator of psychological well-being in the study.

**Academic achievement** refers to how well a student performs in school, and included indicators such as grade point average (GPA), standardized reading assessment scores, school attendance, and students' perceptions of their own academic abilities.

**Supportive social relationships** (also referred to as perceived social support) were operationally defined as participants' perceptions of the amount and frequency of support they receive from classmates, teachers, and parents.

**Gratitude** was operationally defined as a disposition towards feeling thankful to a variety of people and for a variety of things in life. While gratitude has been conceptualized both as an emotional state and a dispositional trait, the current study focused on trait gratitude, which is an enduring thankfulness that is sustained across situations and time as well as a dispositional continuum on which individuals can vary.

**Gender** was operationally defined as a student's endorsement of either "male" or "female" on a demographic questionnaire.

**Adolescence** has been defined as, roughly, the second decade of life, or the period that bridges childhood and adulthood. Adolescence is categorized by significant and rapid

physical, cognitive, emotional, and social development. Experts in the field of adolescence have identified three sub-stages of this developmental period: early adolescence (approximately 10-13 years of age), middle adolescence (approximately 14-17 years of age), and late adolescence (approximately 18-21 years of age), which typically correspond to the educational divisions of middle school, high school, and college (Steinberg, 2008). Each of these sub-phases has its own unique set of physical, cognitive, emotional, and social characteristics. Given that the majority of the participants in the current study were between the ages of 14 and 17 years old, this study focused on the middle adolescent developmental period.

### **Importance of Current Study**

The current study added to the literature by further exploring the correlates of gratitude in a diverse sample of adolescents. Given that research with adult populations has demonstrated that gratitude is related to a variety of indicators of healthy adjustment and functioning (Watkins et al., 2003) and that prior research on the potential benefits of gratitude amongst adolescents was limited (Bono & Froh, 2009), additional research with youth was warranted. Furthermore, it was unknown whether the relationship between gratitude and adolescent functioning is the same across genders and very few studies had yet attempted to determine the pathways through which gratitude relates to improved psychosocial well-being. Therefore, the current study aimed to fill these gaps in the literature. Finally, this research is timely because there has been preliminary evidence demonstrating that gratitude is a trait that can be cultivated in both adults and adolescents (Emmons & McCullough, 2003; Froh et al., 2008). Therefore, better understanding how gratitude relates to the psychological, social, and academic functioning of adolescents

will help researchers and practitioners determine whether or not it might be beneficial to measure students' level of gratitude as part of a screening tool aimed at assessing risk and/or protective factors, as well as to develop and implement interventions aimed at increasing gratitude might be a worthy endeavor in working with adolescents at risk for poor adjustment.

## CHAPTER 2: REVIEW OF THE LITERATURE

### Introduction

As a field of scientific inquiry, positive psychology seeks to understand and explain what makes life worth living and which human experiences constitute a good life. To help them explain how and why people flourish, researchers interested in positive psychology study topics such as positive emotions, character strengths and virtues, and valued subjective experiences (Seligman & Csikszentmihalyi, 2000). One character strength that has been identified as contributing to living a good and fulfilling life is gratitude (Peterson & Seligman, 2004). Empirical investigations of the relationship between gratitude and optimal human functioning are needed, particularly with youth populations (Bono & Froh, 2009). In setting the stage for the current study, the following literature review begins with an introduction to positive psychology and its applications to youth. What follows is an explanation of how gratitude fits within the positive psychology framework as well as how various researchers have defined gratitude. Because the current study aimed to investigate how gratitude relates to adolescents' psychological, social, and academic adjustment, a critical review of previous studies examining correlates of gratitude in both adults and youth is provided. Finally, the purpose of the current study is presented.

### Overview of Positive Psychology

The positive psychology approach to studying human behavior entails a focus on human *thriving*. This approach is markedly different from traditional views of

psychology in which the focus has been on seeking to understand the causes of mental *illness*. The goal of positive psychology, however, is not to supplant the traditional role of psychology in identifying and treating mental disorders, but rather to supplement it by offering a platform for systematically studying what makes people mentally healthy (Snyder & Lopez, 2002).

The foundation of the positive psychology approach lies within an emphasis on prevention. In the millennial special issue of *American Psychologist*, Seligman and Csikszentmihalyi (2000) reflect:

What psychologists have learned over the last 50 years is that the disease model does not move psychology closer to the prevention of serious mental health problems...[indeed] the major strides in prevention have come largely from a perspective focused on systematically building competency... (p. 7).

Thus, by understanding factors that lead to optimal human functioning, researchers interested in positive psychology hope to help individuals cultivate such favorable conditions in their lives, thereby promoting wellness and preventing disease. Indeed, there is empirical support for examining indicators of wellness rather than solely relying on indicators of pathology in order to fully understand the overall functioning of youth (Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008).

### **Positive Psychology with Youth**

The basic tenets of positive psychology (e.g., mental health is not simply the absence of psychopathology but the additional presence of positive emotions, cognitions, and behaviors) are the same when referring to the population of children and adolescence as they are with adults. However, specific findings and conclusions reached from studies

with adults can not be assumed to hold true for youth because the unique aspects of childhood and developmental changes that occur throughout the life span must be taken into consideration (Kirschman et al., 2009). Furthermore, not only can findings with adults not be generalized downward to youth, but the positive psychology field as a whole needs a more solid developmental framework to guide it (Cohen & Kilmer, 2002). Thus, empirical studies specifically with child populations are needed in order to both inform the field as well as ensure that positive psychology applications are being made in developmentally appropriate ways. Despite this crucial need, “studies of positive psychology in children and youth remain in the early stages of development” (Huebner, Gilman, & Furlong, 2009, p. 6).

While most research and interest in positive psychology has continued to be disproportionately focused on adults, a small group of practitioners and researchers has devoted its attention to understanding how positive psychology constructs relate to young people (Diener & Diener, 2009). Researchers have made progress in understanding how certain positive psychology constructs, such as hope and optimism, operate in children and adolescents (Kirschman et al., 2009). In addition, similar to the case with adults, many researchers had already begun to articulate how children thrive prior to the onset of the positive psychology movement. Many of these ideas were developed under such lines of research as “primary prevention,” “health promotion,” “positive youth development,” and “resiliency” (Huebner et al., 2009). For example, positive youth development programs focus on recognizing the strengths of even the most troubled youth and attempt to build on those strengths rather than target isolated problems (Kirschman et al., 2009). While this strengths-based approach to working with children is congruous with positive

psychology, Seligman (2005) views positive psychology as a field capable of enhancing the work being done within the positive youth development paradigm and similar movements. He asserts that positive psychology can provide a theoretical framework for understanding the various constructs that promote positive development in youth, as well as offer empirical methodologies for studying the various domains identified by positive psychology as critical to thriving (i.e., positive subjective experiences, positive individual character strengths, and enabling environments).

Despite the widespread recognition of the importance of extending positive psychology research to children and adolescents, and to the institutions designed specifically for this population (i.e., schools), Lopez (2009) highlights the expansion of positive psychology into the schools as one of the three primary goals for the positive psychology movement that have yet to be realized. One of largest areas where work remains to be done is in basic scientific research into the developmental trajectory of, as well as outcomes associated with, positive psychology indicators (Huebner et al., 2009). Seligman (2005, p. 509) offers some guidance into the types of questions in need of investigation: “How are positive characteristics distributed in the population of young people?” “How do various positive characteristics covary?” “Are some [positive characteristics] more crucial than others in predicting the presence of good outcomes or the absence of bad outcomes?” With questions like these left to be answered, a logical starting point includes identifying the specific positive psychology characteristics, or constructs, to which Seligman refers.

## Gratitude as a Positive Psychology Construct

One of the foundational pillars of the positive psychology movement is character development (Seligman & Csikszentmihalyi, 2000). Character is defined as “the entire set of positive traits that have emerged across cultures and throughout history as important for a good life” (Park & Peterson, 2009, p. 67). The positive psychology movement specifically emphasizes the importance of the identification and cultivation of specific character traits that define good character (Park & Peterson, 2009). Researchers have recently advanced a classification system of human strengths, as well as validated tools for measuring strengths (Park & Peterson, 2006a; Peterson & Seligman, 2004). Specifically, the Values in Action (VIA) Classification of Strengths project identified 24 unique character strengths that collectively define “good character” (Park & Peterson, 2009). The 24 strengths fall into six broad categories that represent human virtues. Virtues are defined as the core characteristics valued by moral philosophers and religious thinkers across a wide range of cultures. The six virtues into which the 24 VIA character strengths fall are: *wisdom and knowledge* (“cognitive strengths that entail the acquisition and use of knowledge”); *courage* (“emotional strengths that involve exercise of will to accomplish goals in the face of opposition”); *humanity* (“interpersonal strengths that entail ‘tending and befriending’ others”); *justice* (“civic strengths that underlie healthy community living”); *temperance* (“strengths that protect against excess”); and *transcendence* (“strengths that build connections to the larger universe and provide meaning”; Park & Peterson, 2006a, p. 894).

One of the key 24 character strengths identified by the VIA Classification is gratitude, defined as “being aware of and thankful for the good things that happen” (Park

& Peterson, 2006b, p. 894). Within the VIA, gratitude is one of the five character strengths within the virtue category of transcendence. Peterson and Seligman (2004) offer an expanded definition of gratitude: “a sense of thankfulness and joy in response to receiving a gift, whether the gift be a tangible benefit from a specific other or a moment of peaceful bliss evoked by natural beauty” (p. 554). Gratitude has historically received relatively little attention in the psychology literature, though it has long been studied in moral philosophy and theology (Peterson & Seligman, 2004). Gratitude has been conceptualized in a variety of ways, including as an emotion, a virtue, and a moral obligation. However, Emmons and Crumpler (2000) considered gratitude to be a human strength because it increases an individual’s personal and relational well-being.

Conceptualized as a trait, or character strength, gratitude can be thought of as an enduring thankfulness that is sustained across situations and time as well as a dispositional continuum on which individuals can vary. Specifically, individuals can vary in gratitude intensity, the strength of the grateful feeling they experience in response to a positive event; gratitude frequency, or how often they feel grateful; gratitude span, the number of life circumstances (e.g., family, job, health) for which they feel grateful at a given time; and gratitude density, the number of persons to whom they feel grateful for a single positive outcome (Peterson & Seligman, 2004). In other words, while gratitude can be experienced as an immediate emotional response to receiving some sort of benefit or gift, gratitude as a disposition, trait, or character strength represents the degree to which an individual typically experiences this emotion (e.g., how often, how intensely; McCullough et al., 2002). It is this dispositional form of gratitude that the current study investigated.

## Gratitude in Childhood and Adolescence

One question that researchers interested in gratitude have long asked is at what age people are capable of experiencing authentic gratitude. One developmental prerequisite for experiencing gratitude is an internalized *theory of mind*, that is, a basic understanding that people have different viewpoints and act in certain ways because of their own desires and beliefs (Wellman, 1990). In other words, in order to experience gratitude, one must be able to understand people as intentional agents whose actions are motivated by their own desires and beliefs (McAdams & Bauer, 2004). Although a solidified theory of mind is typically in place by the third or fourth year of life (Wellman, 1990), some researchers have found that few children under the age of 7 years spontaneously express gratitude in response to receiving a gift (Gleason & Weintraub, 1976), which suggests that expressing gratitude requires developmental capacities beyond theory of mind. Piaget (1954) hypothesized that the development of gratitude in children also requires a capacity to call to mind an experienced satisfaction and their ability to conserve this experience over time.

In one of the first empirical investigations into the developmental trajectory of gratitude in children, Baumgartner-Tramer (1938) identified four stages or characteristic types of gratitude that are displayed by children and adolescents. *Verbal gratefulness* involves expressing gratitude through words such as “thank you,” a behavior displayed across all age groups but apparent most in both the youngest and oldest of Baumgartner-Tramer’s participants. An explanation for this unexpected finding is that perhaps small children are likely to display verbal gratefulness because they are taught good manners, such as saying “please” and “thank you,” by their parents (Gleason & Weintraub, 1976).

Older children, on the other hand, may be inclined to express verbal gratefulness under two different circumstances: (1) when they actually do not feel any gratitude at all, but know that there is a social expectation for one to demonstrate gratefulness, or (2) when they are so overwhelmed with gratitude that they feel they can do nothing else but express their appreciation verbally. In any case, Baumgartner-Tramer viewed verbal gratefulness as the most basic level of gratitude.

The second type of gratitude is *concrete gratefulness*, which involves a child wanting to give something in return or exchange for receiving a gift or granted wish. In some cases what the child said he or she would give to the benefactor was an object that the child valued. In other cases, the child was willing to share the gift that he or she had received with the person giving it. Either way, concrete gratefulness demonstrates the child's egocentric point of view because the child assumes that the benefactor will want the same things as he or she would want. In Baumgartner-Tramer's study, this type of gratitude was expressed most by 8-year-olds and least by participants between ages 12 and 15.

*Connective gratitude* is the term for the third type of gratitude displayed by children. Connective gratitude is the tendency to create a spiritual relationship with the donor, such as being indebted to that person's service or giving something intangible back to the benefactor, such as allegiance, friendship, or love. This type of gratefulness demonstrates the child's liberation from the egocentric point of view and was most common in 11 and 12 year-olds.

*Finalistic gratefulness* includes the child's expressed desire "to reciprocate for the realization of the wish by an action which would be in some way helpful for the object or

situation desired” (p. 62). In other words, finalistic gratitude serves to direct the future actions of the beneficiary. For example, a child who was granted his or her wish of making the soccer team might display gratitude by working hard to make his or her coach and teammates proud. Finalistic gratitude was less frequently encountered in the study overall, but occurred more in 13 to 15 year old children, due to gratitude taking a more complex form in later developmental stages.

Recently, researchers replicated the Baumgarten-Tramer study with a sample of Portuguese children 7 to 14 years of age (Freitas, Pieta, & Tudge, 2011). After coding participants’ responses into one of the four categories of gratitude identified by Baumgarten-Tramer (i.e., verbal, concrete, connective, and finalistic), the investigators divided the responses into two groups based on age of participants: 7-10 and 11-14 years old. Chi-square analyses tested for group differences in the frequency of the types of gratitude expressed. They found no group differences in verbal gratitude; youth of all ages demonstrated verbal responses of gratitude, similar to the results of the original study. Chi-square analyses showed that children aged 7-10 years expressed significantly more concrete gratitude and significantly less connective gratitude than children 11-14 years of age. Finalistic gratitude was only observed in 0.5% of responses overall, and exclusively occurred in the older age group. Thus, Baumgarten-Tramer’s conclusions were supported in this investigation, which occurred in a different historical and cultural context.

One challenge to studying gratitude in youth, particularly when it is done through measuring children’s responses to specific situations (e.g., Baumgartner-Tramer’s study) is that it is very hard to differentiate between true gratitude and social politeness.

Nevertheless, researchers have reached a consensus that genuine gratitude cannot be reliably felt and expressed until middle childhood, likely between the ages of 7 and 10 years old (Peterson & Seligman, 2004).

While the aforementioned studies contribute to the understanding of the developmental pre-requisites for and manifestations of gratitude, they do not seek to explain whether or not gratitude is related to enhanced functioning in children and adolescents. Thus, the remainder of this literature review focuses upon studies that have investigated the relationships between gratitude and a variety of outcomes related to human functioning and well-being. Most of these studies are correlational in nature, although there have been a few experimental investigations of gratitude.

### **Correlates of Gratitude in Adults**

Although older children and adolescents are capable of experiencing gratitude, the majority of the empirical research on gratitude has been carried out with adult populations. Therefore, a review of the literature on the relationships between gratitude and psychosocial well-being in adults is considered before examining the lesser body of research pertaining specifically to youth.

### **Gratitude and Psychological Functioning in Adults**

Several empirical studies have demonstrated links between gratitude and enhanced psychological functioning in adults, including both lower levels of mental health problems and higher levels of positive indicators of mental health. For example, a study of 238 undergraduate psychology students yielded significant negative correlations in the small to moderate range between a grateful disposition and negative affect ( $r = -.31$ ), symptoms of anxiety ( $r = -.20$ ), and depression ( $r = -.30$ ). Moreover, the relationship

between higher levels of gratitude and lower levels of anxiety remained significant even after controlling for positive affectivity and social desirability. The relationship between higher levels of gratitude and lower levels of depression remained significant even after controlling for positive affectivity, negative affectivity, and social desirability (McCullough et al., 2002). In a separate sample of 156 undergraduate students, the same investigators also found that gratitude was negatively correlated with envy ( $r = -.39$ ) and several distinct dimensions of materialism ( $r = -.17$  to  $r = -.38$ ).

Watkins and colleagues (2003) found significant correlations between gratitude and depression ( $r = -.34$  to  $r = -.56$ ) across three different samples of undergraduate psychology students. Within a given subsample, these researchers found that gratitude was negatively associated with narcissism ( $r = -.49$ ), physical aggression ( $r = -.37$ ), overall aggression ( $r = -.30$ ), and hostility ( $r = -.26$ ). The relationship between gratitude and negative affectivity was not significant in their research. In a study investigating the daily emotional experiences of adults with neuromuscular diseases, McCullough, Tsang, and Emmons (2004) found a significant relationship between mean levels of gratitude in individuals' daily mood and levels of depression ( $r = -.22$ ). Like Watkins and colleagues (2003), these investigators also did not find a significant relationship between gratitude and negative affectivity.

In regards to positive indicators of psychological well-being, McCullough et al. (2002) found that a disposition toward gratitude was positively associated with a wide array of well-being indicators including life satisfaction ( $r = .53$ ), optimism ( $r = .51$ ), two constructs of hope (i.e., agency and pathways,  $r = .67$  and  $r = .42$ , respectively) and several domains of religiousness/spirituality ( $r = .14$  to  $r = .29$ ). Furthermore, all of these

associations persisted even after controlling for positive affectivity, negative affectivity, agreeableness and social desirability. Watkins et al. (2003) found strong correlations between gratitude and life satisfaction across three groups of undergraduate students ( $r = .50, .49, \text{ and } .62$ ). Within specific subsamples, these researchers also found correlations between gratitude and positive affect ( $r = .36$  in one group and  $r = .52$  in a second group of participants), happiness ( $r = .49$ ), intrinsic religiosity ( $r = .32$ ), and internal locus of control ( $r = .33$ ).

Additionally, McCullough et al. (2004) examined the relationships between the average daily feeling of gratitude over a 3-week period and various psychosocial indicators in a sample of 96 adults with neuromuscular disease. They found that participants who reported more feelings of gratefulness on a daily basis also reported higher levels of positive affect ( $r = .39$ ), life satisfaction ( $r = .31$ ), well-being ( $r = .27$ ), and optimism ( $r = .25$ ). These investigators found similar results in a non-disabled sample of undergraduate students. Specifically, higher levels of mean gratitude in daily moods were associated with higher levels of empathy ( $r = .65$ ), positive affect ( $r = .38$ ), religiosity ( $r = .36$ ), self-transcendence ( $r = .35$ ), life satisfaction ( $r = .30$ ), and happiness ( $r = .30$ ). In an empirical investigation of the relationships between all 24 character strengths identified by the VIA Classification Project and well-being, gratitude had the third strongest correlation with life satisfaction across three samples of adult respondents ( $r = .41 \text{ to } .43$ ; Park, Peterson, & Seligman, 2004). In this study, gratitude was more strongly related to life satisfaction than the highly valued traits of love, wisdom, persistence, humor, and love of learning. Only the character strengths of hope and zest were more strongly related to one's satisfaction with life than was gratitude.

A more recent study found that dispositional gratitude was related to various aspects of psychological well-being in a sample of undergraduate students aged 18 to 26 (Wood, Joseph, & Maltby, 2009). Specifically, gratitude had a small correlation with autonomy ( $r = .17$ ), moderate associations with purpose in life ( $r = .28$ ) and environmental mastery ( $r = .38$ ), and large correlations with personal growth ( $r = .50$ ), positive relationships with others ( $r = .54$ ), and self-acceptance ( $r = .61$ ). Moreover, these researchers found that gratitude predicted four indicators of psychological well-being (personal growth, positive relationships with others, self-acceptance, and purpose in life) above and beyond the Big Five factors of Personality (i.e., Agreeableness, Conscientiousness, Extraversion, Openness to Experience, and Neuroticism). This study provides evidence that gratitude is not only related to hedonistic conceptions of well-being, such as subjective feelings of happiness and pleasure, but is also related to a meaningful life characterized by purpose, constructive activity, and growth. Furthermore, gratitude is related to such indicators of psychological well-being independent of other more well-researched aspects of personality.

The conclusion that can be drawn from the above studies is that gratitude is related to enhanced psychological well-being in adults. Across several studies, gratitude has been linked to lower psychopathology and higher happiness, satisfaction with life, and other positive indicators of mental health. However, correlational designs do not allow for conclusions about directionality. Fortunately, a handful of studies using experimental designs to investigate the effects of gratitude are available for review.

## **Experimental Manipulations of Gratitude and Psychological Functioning in Adults**

Experimental studies have shown that gratitude leads to improved mood states as well as psychological and physical health in adults. In one study, participants who were asked to recall things they did over the summer that they felt grateful for showed significantly less negative affect after the intervention than students who were told to list things they wanted to do over the summer but were not able to (Watkins et al., 2003). In a second study, these researchers found that students who participated in one of three different gratitude enhancing manipulations (i.e., thinking about someone they were grateful for, writing an essay about someone they were grateful for, and writing a letter to someone they were grateful for) showed increases in levels of positive affect from pre- to post-intervention compared to students in a neutral control condition who were asked to write about the layout of their living room (Watkins et al., 2003).

Emmons and McCullough (2003) found that subjects who participated in a 10-week gratitude intervention (i.e., listing up to five things they were grateful for over the past week) reported higher weekly experiences of gratitude compared to subjects who were alternatively told to list up to five things that bothered or annoyed them over the course of the week (i.e., hassles group). Furthermore, participants in the gratitude condition rated their overall well-being and their expectations for the upcoming week significantly higher than people in both the hassles group and a control group of students who simply listed up to five events or circumstances that occurred over the past week (i.e., events group). The gratitude group also reported fewer symptoms of physical illness than the other two groups and spent nearly 1.5 more hours a week exercising than the hassles group.

In a very similar follow-up study, the researchers had students participate in the three experimental conditions on a daily basis over a two-week period. The investigators also changed the events condition to a downward social comparison condition in which they were asked to think about and write down ways in which their lives were better off than others'. In this study, participants in the gratitude group reported significantly more gratitude and positive affect than those in the hassles condition. In contrast to the first study, no between group differences were found for physical symptoms or time spent exercising. In yet a third investigation by these researchers, a gratitude-inducing intervention that lasted three weeks led to higher levels of gratitude and positive affect, as well as lower levels of negative affect, than a no-treatment control group in a sample of adults with neuromuscular disease. Participants in the gratitude condition also reported more satisfaction with their lives as a whole, more optimism about the upcoming week, more connectedness with others, and getting more hours of sleep than participants in the control group. Furthermore, participants in the gratitude group were rated by their spouses as exhibiting more positive affect and life satisfaction than participants in the control group. Together, these three studies by Emmons and McCullough (2003) reveal that focusing on what one is grateful for appears to have benefits for one's well-being and overall functioning.

Martinez-Marti, Avia, and Hernandez-Lloreda (2010) replicated the two-week gratitude intervention study conducted by Emmons and McCullough (2003) with a sample of 105 undergraduate students from Spain. To improve the internal validity of the experiment, they included a two-week follow-up data collection and observer-report data. The results obtained in the original study by Emmons and McCullough were replicated

by Martinez-Marti and colleagues; participants in the gratitude condition reported significantly higher state gratitude and positive affect directly after the intervention than participants in the hassles group, but no differences were found between the gratitude and control groups. Examination of group means revealed that the hassles group experienced a statistically significant drop in positive affect from pre-test to post-test, while the gratitude group's increase in positive affect from pre-test to post-test was not significant. This trend implies that the significant difference between the two groups at post-test was more likely due to the hassles intervention diminishing positive affect, rather than the gratitude intervention increasing positive affect. Additionally, no self-report group differences in state gratitude or positive affect were found at the 2-week follow-up. However, third-party observers (i.e., a significant person in the participant's life), reported that participants in the gratitude condition appeared more satisfied with their lives at the 2-week follow-up than those who had participated in the hassles group. Thus, other people noticed a difference regarding overall happiness between participants in these two conditions. Martinez-Marti and colleagues concluded that while gratitude interventions may cause slight and brief increases in state gratitude and positive affect, these changes are no better than those obtained with a neutral exercise (writing about any event), and they also do not appear to be long-lasting.

### **Gratitude and Social Functioning in Adults**

Gratitude is also thought to contribute to enhanced social functioning, through the strengthening of social bonds. Specifically, the experience and expression of gratitude in response to a perceived benefit from another is believed to motivate pro-social behavior on the part of the recipient as well as reinforce the benefactor's actions, which will lead

to more benevolence in the future (McCullough et al., 2001). Indeed, researchers have found that gratitude is modestly to moderately linked with various aspects of pro-social behavior, such as empathic concern for others ( $r = .28$ ), capacity for perspective-taking ( $r = .32$ ), forgiveness ( $r = .36$ ), peer reports of volunteerism ( $r = .19$ ), peer reports of generosity with time and resources ( $r = .22$ ), peer reports of being helpful and unselfish with others ( $r = .18$ ), and peer reports of having excessive expectations of others ( $r = -.20$ ; McCullough et al., 2002).

Furthermore, other researchers have used experimental methods to demonstrate that grateful people are more likely to act pro-socially towards others. For example, Bartlett and DeSteno (2006) randomly assigned participants to one of three emotion-inducing conditions: one that induced gratitude (i.e., they received a favor from a confederate during the study), one that induced amusement (i.e., they were shown a humorous video clip and engaged in a brief conversation about the video with the confederate), and one neutral condition (i.e., participants just completed the task and engaged in a brief conversation with the confederate about a neutral topic). Each condition was followed by a manipulation check to make sure the intended emotions were elicited. Then, the researchers measured each participant's pro-social behavior based on whether or not he or she would be willing to help the confederate by completing a lengthy survey after the study. The investigators also measured how much time participants spent on filling out the survey (each participant was told he could do as much or as little as he wanted to, but that the more he did the more helpful it would be). As hypothesized, participants in the gratitude-inducing condition were more likely than those in the other two experimental conditions to help the confederate and to spend more time

filling out the survey. Their results were confirmed even when controlling for the extraneous factor of a reciprocity norm, which refers to “a cognitive awareness that one should repay another person who has provided assistance” (p. 320).

Tsang (2006) also found that participants who were made to believe that their partner in an activity had chosen to give them a bigger share of a monetary reward (i.e., favor condition) experienced more gratitude and were more likely to give their partner more money when it was their turn to allocate funds than participants who were made to believe they received more money than their partner by chance (i.e., chance condition). Furthermore, when asked about their motivation for allocating funds the way they did, participants in the favor condition were more likely to endorse “to show appreciation” as their reason than participants in the chance condition, who were more likely to endorse “to get money” or “to act morally” as their source of motivation (p. 143). These studies demonstrate that gratitude can be a strong motivating factor for pro-social behavior, above and beyond a moral obligation to repay kindness with kindness.

Other investigators have explored the links between gratitude and the quality of one’s naturally occurring social relationships. Wood et al. (2009) found that trait gratitude was strongly associated with one’s positive relationships with others ( $r = .54$ ). Positive relationships with others was defined in Wood and colleagues’ study as having warm, satisfying, trusting relationships with others; being concerned about the welfare of others; showing empathy, affection, and intimacy; and understanding the give and take of human relationships (Ryff & Keyes, 1995). Algoe, Haidt, and Gable (2008) found that the amount of gratitude felt by sorority “little sisters” for specific benefits conferred upon

them by sorority “big sisters” was significantly related to concurrent and future (i.e., one month later) perceived relationship quality between the two “sisters.”

Lambert, Clark, Durtschi, Fincham, and Graham (2010) used concurrent correlational, longitudinal correlational, and experimental designs to show that expressing gratitude to a close friend or romantic partner predicts and increases the communal strength of the relationship. Communal strength refers to the degree to which one feels responsible for a relationship partner’s welfare and the lengths to which he or she would go to meet that partner’s needs. It is an indicator of relationship strength and quality. Similarly, Lambert and Fincham (2011) found that expressing gratitude to a close friend or romantic partner significantly predicted one’s willingness to voice relationship concerns both concurrently ( $\beta = .42$ ) and longitudinally ( $\beta = .18$ ). Moreover, participants who took part in a three-week intervention where they directly expressed gratitude to their relationship partner on a weekly basis reported significantly more comfort in voicing relationship concerns than subjects who participated in grateful thoughts, positive interactions, and neutral control groups. The researchers concluded that expressing gratitude in a relationship increases one’s potential to engage in other relationship-building behaviors. Voicing relationship concerns is considered an important behavior in relationship formation and maintenance (Lemay & Clark, 2008). Thus, both studies by Lambert and colleagues suggest that expressing gratitude is a vitally important aspect of interpersonal social relationships. Their findings support the assertions of positive emotion and character strength researchers who maintain that gratitude has far-reaching implications for social well-being (Fredrickson, 2004; McCullough et al., 2001).

## **Gratitude and Academic/Occupational Functioning in Adults**

Research on the links between gratitude and academic or work-related outcomes in adults is scarce. In a recent investigation of the relationship between various character strengths and academic functioning amongst college students, Lounsbury, Fisher, Levy, and Welsh (2009) found that while gratitude was significantly associated with students' satisfaction with college ( $r = .20$ ), it was unrelated to their academic performance as measured by their cumulative grade point average (GPA). The character strength of gratitude is also associated with greater work satisfaction amongst U.S. adults from several occupational backgrounds, including those in professional ( $r = .29$ ), managerial ( $r = .29$ ), administrative ( $r = .25$ ), clerical ( $r = .28$ ), blue-collar ( $r = .32$ ), and homemaker ( $r = .28$ ) positions (Peterson, Stephens, Park, Lee, & Seligman, 2010). Direct links between gratitude and the quality of work performance have yet to be investigated.

### **Summary of Gratitude Research with Adults**

In sum, the aforementioned investigations provide evidence that gratitude is correlated with, and perhaps even causally related to, the psychological and social well-being of adults, with less support found for links between gratitude and enhanced academic or occupational functioning. These findings cannot be generalized to children and adolescents without empirical support for such conclusions. Therefore, the next section of this review examines the much smaller body of gratitude research that been done with youth, with particular attention given to two studies that most closely align with the current investigation.

## Correlates of Gratitude in Youth

### Measuring Gratitude in Youth

Before turning to the empirical research on gratitude and psychosocial functioning in youth, a discussion concerning the different instruments that have been used to measure gratitude in youth is warranted. Three gratitude rating scales currently exist, and each of them was initially designed for use with adults (Froh, Miller, & Snyder, 2007).

The *Gratitude Adjective Checklist* (GAC; McCullough et al., 2002) is a three-item measure that asks participants to rate the extent to which they feel “grateful,” “thankful,” and “appreciative” on a 5-point Likert scale ranging from 1 (*very slightly/not at all*) to 5 (*extremely*). This measure has been used to assess gratitude both as a dispositional trait and as a mood by simply modifying the instructions to have participants rank how they feel “in general” versus “since yesterday.” Scores on each item are summed to provide a total score. Since its initial development, researchers have used the GAC with both early and late adolescents and have found it to have strong psychometric properties with these samples (Froh, Fan, Emmons, Bono, Huebner, & Watkins, 2011; Froh, et al., 2008).

The *Gratitude Questionnaire-6* (GQ-6; McCullough et al., 2002) is a six-item scale that measures the four facets of gratitude as a dispositional trait: intensity, frequency, span, and density. Each item is a close-ended statement and is ranked on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). This measure has been validated with both adults (McCullough et al., 2002) and youth (Froh, Fan et al., 2011). The *Gratitude, Resentment, and Appreciation Test* (GRAT; Watkins et al., 2003) is also a measure of dispositional or trait gratitude. The GRAT is a 44-item questionnaire that measures participants’ sense of abundance, simple appreciation, and appreciation of

others. Participants indicate their level of agreement/disagreement with each item on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Due to the length of this measure, the GRAT-short form was constructed and validated by Thomas and Watkins (2003). The GRAT-short form is a 16-item scale with the same three factors as the original GRAT. Items are rated on a 9-point Likert scale ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). The GRAT-short form has demonstrated adequate psychometric properties in adult samples (Diessner & Lewis, 2007; Thomas & Watkins, 2003). Researchers have found that while the factor structure, reliability, and validity of the GRAT-short form holds up well for older adolescents (14-19 years old), it should not be used with children in the 10 to 13 year age range (Froh et al., 2011).

Aside from these core rating scales, researchers have used other methods to assess gratitude in youth, such as the gratitude subscale of the Values in Action Inventory of Strengths for Youth (VIA-Youth; Park & Peterson, 2006a), parent reports (Park & Peterson, 2006b), qualitative data (Gordon et al., 2004), and students' responses/reactions to receiving aid (Froh et al., 2008). However, the most common and well-validated assessments of gratitude for youth populations are the GAC and the GQ-6.

### **Gratitude and Psychological Functioning in Youth**

The first link between gratitude and psychological well-being in youth was not reported until 2006, during the development and validation of the VIA-Youth. During an investigation of the relationship between all 24 unique character strengths and relevant outcome variables, gratitude was significantly related to life satisfaction ( $r > .50$ ) as assessed by the *Student Life Satisfaction Scale* (SLSS; Huebner, 1991), and conscientiousness ( $r \approx .50$ ) as assessed by a measure of the Big Five developed by

Goldberg (1999; Park & Peterson, 2006a). Although the sample of students on which these findings are based consisted of only fifth and eighth grade students, leaving out a wide range of adolescents, this study was the first to suggest that gratitude may be related to superior psychological functioning in youth. In a study of character strengths in a sample of 680 younger children aged 3 to 9 years old, gratitude, as assessed by parents' written anecdotal reports, yielded a small correlation ( $r = .16$ ) with older children's (aged 7-9 years) levels of happiness (also assessed via parents' written descriptions of their children), but was unrelated to the happiness of younger children (Park & Peterson, 2006b). These findings are not surprising given that gratitude has not been reliably detected in children younger than 7 years old (Peterson & Seligman, 2004).

Chen and Kee (2008) confirmed a relationship between gratitude and life satisfaction in a sample of 169 high school athletes from Taiwan. Specifically, dispositional gratitude, as measured by a Chinese-translated version of the GQ-6 (McCullough et al., 2002), was positively related to students' overall satisfaction with their life ( $r = .30$ ) as well as their satisfaction with their team and sport ( $r = .43$ ). Additionally, gratitude was inversely related to two out of three aspects of athlete burnout: reduced sense of accomplishment ( $r = -.32$ ) and devaluation ( $r = -.31$ ). This study suggests that gratitude is positively linked to desired outcomes, such as life satisfaction, and negatively associated with undesirable states, such as burnout, amongst somewhat older adolescents (i.e., 15-18 years old). However, the generalizability of these findings are limited by the fact that all of the participants were Taiwanese and played a sport on a very competitive level. Perhaps this group of adolescents differs in significant ways from a more heterogeneous population of teenagers from the United States.

In a sample of 154 students in sixth and seventh grade, gratitude, as assessed by the GAC for gratitude as a mood (i.e., students reported to what extent they felt grateful, thankful, and appreciative “since yesterday”), was significantly correlated with students’ family satisfaction ( $r = .33$ ) and school satisfaction ( $r = .30$ ), as measured by the *Brief Multidimensional Students’ Life Satisfaction Scale* (BMSLSS; Seligson, Huebner, & Valois, 2003); overall life satisfaction ( $r = .37$ ), as measured by a single item asking students to assess their satisfaction with their lives over the past few weeks on a Likert scale from -3 (*terrible*) to +3 (*delighted*); optimism ( $r = .35$ ), as measured by a single item asking students to rate how they expected to feel about their lives during the following week on a Likert scale from -3 (*expecting the worst*) to +3 (*expecting the best*); and positive affect ( $r = .67$ ), as measured by students’ ratings of the amount they felt each of a list of positive affect adjectives (e.g., excited, proud, strong) “since yesterday” on a Likert scale ranging from 1 (*not at all*) to 5 (*extremely*; Froh et al., 2009). These correlations were significant at an adjusted alpha level of  $p < .004$ . Notably, the zero-order correlations between gratitude and several other variables, such as higher levels of satisfaction with friends ( $r = .23$ ), self ( $r = .23$ ), and living situation ( $r = .22$ ) and fewer reported physical symptoms ( $r = -.16$ ), reached traditional levels of significance ( $p < .05$ ). After controlling for positive affect, only the relationship between gratitude and family satisfaction ( $r = .42$ ) remained statistically significant at the adjusted alpha level.

In an investigation of the relationships between gratitude, materialism, and psychosocial functioning amongst a sample of 1,035 high school students (Froh, Emmons et al., 2011), gratitude significantly predicted higher life satisfaction ( $\beta = .79$ ), as measured by the BMSLSS (Seligson et al., 2003) and absorption in meaningful activities

( $\beta = .41$ ), as measured by the *Engaged Living in Youth Scale* (ELYS; Froh et al., 2010). Gratitude also predicted lower levels of envy ( $\beta = -.32$ ), as measured by the *Dispositional Envy Scale* (DES; Smith, Parrott, Diener, Hoyle, & Kim, 1999) and depression ( $\beta = -.51$ ), as measured by the *Center for Epidemiologic Studies Depression Scale for Children* (CES-DC; Weissman, Orvaschel, & Padian, 1980). Furthermore, gratitude predicted these constructs while controlling for age, sex, SES, ethnicity, receipt of special education services, and materialism. Gratitude was also a relatively stronger predictor of psychosocial well-being than materialism. Given that materialistic strivings are linked to poorer psychological and social adjustment (Kasser & Ryan, 1993; 1996), Froh, Emmons, et al. (2011) concluded that a grateful disposition may protect youth from the negative side effects of an increasingly materialistic culture. In this study, the investigators used a combination of three different gratitude scales (the GAC for dispositional gratitude, the GQ-6, and the GRAT-short form) to serve as their measure of gratitude, but no details were given as to how the single score representing gratitude was derived from these three scales.

### **Experimental Manipulations of Gratitude and Psychological Functioning in Youth**

Froh, Sefick, and Emmons (2008) attempted to replicate the gratitude intervention study conducted by Emmons and McCullough (2003) with a group of sixth and seventh grade students. Eleven classes of students ( $N = 221$ ) were randomly assigned to one of three conditions: gratitude, hassles, or control. Students in the gratitude condition ( $n = 76$ ) were instructed to list up to five things they were grateful for since yesterday. Students in the hassles group ( $n = 80$ ) were instructed to list up to five hassles or things that bothered

or annoyed them since yesterday. Participants in the control group ( $n= 65$ ) simply completed the outcome measures.

Participants engaged in the intervention tasks daily for two weeks and completed pre-test, post-test (at the end of the 2 weeks), and follow-up (3 weeks after the post-test) measures of various constructs related to overall well-being, including mood (as assessed by a list of 25 positive and negative affect terms rated on a 5-point Likert scale), global life satisfaction (as measured by a single item asking students how they felt about their lives as a whole over the past few weeks), domain specific life satisfaction (as measured by the BMSLSS), pro-social behavior (as measured by two items with a “yes” or “no” response format) and physical wellness (as assessed by a checklist of physical symptoms experienced over the previous two weeks). Students in the gratitude group showed greater gains in gratitude (as assessed by the GAC for mood), optimism for the upcoming week, life satisfaction, and satisfaction with their living situation, as well as reductions in negative affect, than students in the hassles group, at post-test and follow-up. However, there was only one significant difference between the gratitude and control group: students in the gratitude condition reported greater gains in school satisfaction than students in the control condition. This is an important limitation to note because differences between the gratitude and hassles group cannot be solely attributed to the positive effects of the gratitude intervention. It is equally as plausible that the hassles condition actively contributed to the observed differences by causing the well-being of those who participated to decline. There were no group differences in pro-social behavior or physical health.

Although the lack of significant differences between the experimental and control group might lead one to suspect that gratitude was not related to well-being, it is important to note that the researchers in this case were measuring gratitude as a state or mood, rather than a disposition or character trait. Additionally, this study was intended to examine the outcomes from an intervention rather than measure the extent of the relationship between gratitude and well-being in general samples. Hence, the limited findings could be a reflection of the intervention design (i.e., no treatment integrity information was provided) rather than the underlying relationship between these constructs. Therefore, the extent to which having a grateful disposition is related to the well-being of adolescents was largely unanswered in this investigation.

### **Gratitude and Social Functioning in Youth**

Researchers have also explored the extent to which gratitude is related to the social functioning of children and adolescents. Specifically, Park and Peterson (2006a) found that the character strength of gratitude was related to greater cooperativeness in youth ( $r = >.45$ ), as assessed by the *Social Skills Rating System* (SRSS; Gresham & Elliot, 1990). Froh et al. (2009) found that a grateful mood (assessed with the GAC for mood) was associated with the pro-social act of offering emotional support to someone else ( $r = .19$ ) in a sample of 154 middle school students. Furthermore, gratitude was significantly correlated with perceiving more support from family ( $r = .18$ ) and friends ( $r = .20$ ), although these constructs were only assessed with one item asking students to describe how supportive their family/friends were on a scale from 1 (*not very supportive*) to 5 (*very supportive*).

Two studies using various samples of adolescents have shown that a grateful disposition strongly predicts better social integration ( $r = .45$  to  $.76$ ) amongst high school students (Froh et al., 2010; Froh, Emmons et al., 2011). Social integration is defined as “being passionate about helping and feeling connected to others” both at a micro and macro level (Froh et al., 2010, p. 312). Such passion about reaching out to others is likely to motivate other-related behavior, which in turn helps to fulfill the basic psychological need of relatedness as proposed by self-determination theory (Deci & Ryan, 2000). Furthermore, social relations are considered to be the most critical ingredient for overall well-being, especially for youth (Diener & Seligman, 2002; Froh et al., 2010). Therefore, the finding that grateful adolescents are more likely to be socially integrated is significant because social integration appears to be very important for happiness and health (Froh et al., 2010).

### **Gratitude and Academic Functioning in Youth**

Very few studies have investigated the relationship between gratitude and academic outcomes in children and adolescents. Park and Peterson (2006a) reported that gratitude, as assessed by the VIA-Youth, was a significant predictor of end-of-year grade-point-average (GPA;  $r = .22$ ) in a diverse sample of 250 fifth and eighth grade students. Similarly, Froh, Emmons et al. (2011) found that gratitude predicted self-reported GPA ( $r = .22$ ) in a sample of 1,035 high school students even after controlling for age, sex, ethnicity, socioeconomic status, and receipt of special education services. These are the only two studies reporting on the links between gratitude and academic achievement, but the consistency between the findings suggests that a grateful disposition is a small but reliable predictor of academic success.

## Gender as a Moderating Variable

Females typically experience and express higher levels of gratitude than males (Froh, Emmons, et al., 2011; Gordon et al., 2004; Kashdan et al., 2009). Researchers involved in the study of masculinity assert that men might view the experience and expression of gratitude as a threat to their sense of autonomy, accomplishment, and masculine identity (Levant & Kopecky, 1995), and are therefore more likely to conceal rather than display their gratefulness (Sommers & Kosmitzki, 1988). Women, on the other hand, are theorized to regard gratitude as more functional than men due to their typical concern for creating and maintaining meaningful social relationships, and are therefore more likely to display their appreciation for perceived benefits (Schwartz & Rubel, 2005). In general, women are expected to not only experience gratitude more often than their male counterparts but to also derive greater benefits from its expression (Kashdan et al., 2009). However, findings as to whether mean differences in gratitude expression translate into differential outcomes for males and females are scarce and inconclusive. In a study of 288 college students (77% female), women rated the expression of gratitude as less novel, complex, uncertain, and conflicting, and more interesting and exciting than men, suggesting that gratitude is viewed as less costly and more beneficial for women than men (Kashdan et al., 2009). In addition, across a three-month time period, higher trait gratitude at time one predicted greater satisfaction of the psychological needs of relatedness and autonomy for women, but not for men. Furthermore, willingness to openly express positive emotions, which was greater in women, partially mediated these differences (Kashdan et al., 2009). Thus, the authors

concluded that, indeed, women are in a better position to benefit from gratitude than are men.

Froh et al. (2009) examined gender differences with respect to gratitude's relationship to psychological and social functioning in a sample of 154 middle school students (46% female). Contrary to the Kashdan study, Froh and colleagues found that gender did not moderate the relationship between gratitude and psychological wellness (i.e., global life satisfaction, domain-specific life satisfaction, optimism, positive affect). In regards to social functioning, gender did not moderate the relationship between gratitude and prosocial behavior or perceived social support from friends, but it did significantly moderate the relationship between gratitude and perceived social support from family. Specifically, gratitude was positively related to family support for boys but not for girls. Froh et al.'s (2009) findings suggest that, in their study, it was males who benefited more from a grateful disposition in that they were more likely to experience greater levels of social support from their family members. These results differ from those found by Kashdan and colleagues. In light of these discrepancies, further investigation of gender as a moderating variable between gratitude and well-being is warranted. Furthermore, neither of the aforementioned studies was conducted with high school students. Although Froh, Emmons et al. (2011) found that high school females had higher levels of gratitude than males, they did not investigate gender as a moderating variable in their study. The possible effects of gender on the relationship between gratitude and the psychological, social, and academic functioning of high school students are still in need of exploration.

## Summary and Critique of Gratitude Research with Youth

Taken together, the body of research that exists to date on the relationship between gratitude and important psychological, social, and academic outcomes in youth largely confirms research findings amongst adult samples; namely, that experiencing more gratitude is related to enhanced psychological and social functioning, and is possibly related to better academic outcomes as well. However, there are limitations to the conclusions that can be drawn from the studies that have been conducted to date, indicating areas in need of further probing. For instance, while Froh et al.'s (2009) study represents an important contribution to the literature in that it was the first to investigate the relationship between gratitude and psychosocial and physical well-being in youth, it was limited to an early adolescent sample (i.e., sixth and seventh grade students). Second, the participants in the study all came from an affluent school district in NY where the median household income was \$94,339 (compared to a state median of \$43,393). In addition, 80% of the sample was Caucasian. Thus, the extent to which the findings of the study generalize to a more economically and ethnically diverse student population remains unknown. Third, some of the measurement tools used in Froh et al.'s (2009) investigation to assess constructs of interest are questionable (i.e., include one- or two-item indicators of constructs such as family support, friend support, optimism, and pro-social behavior). Future studies should make use of psychometrically sound measures that are available to assess these variables of interest. Furthermore, the main variable of interest (i.e., gratitude) was assessed using the GAC (McCullough et al., 2002), which is a three-item measure that lists three synonymous adjectives: "grateful," "thankful," and "appreciative". Students were instructed to use a 5-point Likert scale to rate how much

they experienced each of the three feelings “since yesterday,” which is considered a measure of state gratitude as opposed to trait or dispositional gratitude. Lastly, the researchers did not investigate any academic outcomes or measures of psychopathology, which are crucial indicators of students’ overall functioning.

A later study by Froh, Emmons, and colleagues (2011) did focus on high school students and included some measures of academic outcomes and psychopathology (i.e., self-report GPA and depression, respectively). However, the external validity of the study was limited by the sample, which was comprised of mostly Caucasian students from an unusually high SES community. Furthermore, the investigators used a combination score of the GAC, GQ-6 and GRAT- short form to assess gratitude, but did not offer an explanation for why the composite was analyzed or how they calculated the total gratitude score from these three measures. Finally, although the researchers examined depression, other areas of psychopathology (i.e., anxiety, externalizing problems) were not included in the study. Finally, GPA is not the sole or even the best measure of academic success (Grigorenko et al., 2009); other important aspects of educational functioning to examine include school attendance, end-of-year assessments, and academic self-perceptions.

It should also be noted that the majority of studies specifically investigating the role of gratitude in the well-being of youth’s lives has been conducted by the same team of investigators (specifically, Froh and colleagues). Replication of their findings by an independent researcher would add strength and validity to the conclusions that have been drawn from their work. Additionally, definitive conclusions about the role that gender plays in the relationship between gratitude and psycho-social-academic functioning in

youth have yet to be drawn, as the studies that have explored gender as a moderator are few and yield contradictory results.

The preceding sections of this literature review provide background information and a rationale for the first four research questions of the current study. The following section provides background and a rationale for the final research questions in the current study, specifically, whether or not social support mediates the relationship between gratitude and psychological and academic functioning among adolescents.

### **Social Support as a Mediator between Gratitude and Student Outcomes**

#### **Theoretical Rationale**

Although research is accumulating to show that gratitude predicts enhanced psychological functioning, less research has focused on the pathways of such effects; that is, *how* or *why* does gratitude increase psychological well-being? Frederickson's (1999; 2004) broaden-and-build theory of positive emotions, however, offers a plausible explanation. Specifically, experiencing gratitude in response to a benefit received leads one to think and act in ways that benefit others. Over time, such actions build and strengthen social bonds and connections with others, and lead to the formation of a strong social network, which is a valuable resource to one's life (Frederickson, 2004). Based on this theory, it seems that gratitude may lead to enhanced psychological and academic functioning by strengthening one's level of social support. Gillham et al. (2011) propose a similar hypothesis:

Other-directed strengths may build friendships and increase the social support people receive from others, which in turn could increase positive experiences that lead to happiness and protect against depression. Transcendence strengths may

boost well-being by giving adolescents a deeper sense of purpose and connection to others, and by providing consolation during setbacks. (p. 32).

Therefore, there is a strong theoretical rationale for investigating the extent to which social support mediates the relationship between gratitude and student functioning.

### **Empirical Rationale**

Empirical support for investigating the hypothesis that social support acts as a pathway through which gratitude predicts enhanced student functioning comes from three main lines of research: studies showing links between gratitude and social support, studies showing links between social support and positive psychological and academic outcomes (i.e., low pathology, high subjective well-being, high academic achievement), and studies that have looked at similar pathway models as that proposed in the current study (i.e., the model consistent with Frederickson's [2004] and Gillham et al.'s [2011] theories).

**Links between gratitude and social support.** While gratitude has been linked to many aspects of social functioning in adults and youth, as summarized in earlier sections of this chapter, only a few studies examined social support in particular. For example, Froh et al. (2009) found that gratitude was significantly correlated with family support ( $r = .18, p = .03$ ) and friend support ( $r = .20, p = .01$ ) in a sample of 154 middle school students. Although the strength of these associations is small, it is important to note that in this study gratitude was measured with the GAC using the terminology "since yesterday," which is more a measure of state gratitude than trait gratitude. Also, family and friend support were both assessed with one-item indicators. It is possible that the relationships between gratitude and family/friend support would be even stronger when

these constructs are measured with more valid instruments. Case in point, Spangler (2010; as cited in Froh, Fan et al., 2011) found a moderate to strong association between trait gratitude and perceived social support ( $r = .44$ ) in a sample of undergraduate students. Similarly, in a longitudinal investigation of 156 college freshmen (ages 18 and 19 years old), gratitude at time one was a significant predictor of two types of perceived social support three months later: belonging (the availability of people to provide shared social experiences and activities;  $\beta = .10, p < .05$ ) and appraisal (the availability of people to give advice, listen to problems, and provide emotional support;  $\beta = .16, p < .01$ ) controlling for initial levels of social support (Wood, Maltby, Gillett, Linley, & Joseph, 2008). Given the limited number of studies that have directly measured links between gratitude and social support, particularly among adolescent samples, establishing the existence of such a link could be a relatively new contribution to the literature offered by the current investigation.

**Links between social support and psychological functioning.** A substantial amount of research shows that perceived social support is strongly related to psychological functioning in youth. Three sources of support have consistently been identified as most important in the lives of adolescents: support from parents/families, support from teachers/school, and support from friends/classmates (Arslan, 2009). Therefore, the following summary of the social support literature is confined to these three sources of social support. In a recent investigation of mental health amongst a diverse sample of 341 middle school students, troubled youth (i.e., students with both high levels of psychopathology and low subjective well-being) reported significantly less social support from peers, parents, and teachers than did students with complete mental

health (i.e., students with typical levels of psychopathology and average to high subjective well-being). Furthermore, students who were considered vulnerable, meaning that they did not exhibit at-risk or clinical levels of psychopathology but they reported low levels of subjective well-being, also perceived significantly less social support from parents and peers than did completely mentally healthy youth (Suldo & Shaffer, 2008). These findings provide strong evidence that perceived social support is related to various levels of psychological functioning in adolescence.

Other researchers have reported moderate correlations between sources of social support and psychological outcomes. Parental support was negatively correlated with symptoms of depression ( $r = -.35$ ) and anxiety ( $r = -.33$ ) in a sample of 173 African-American male adolescents (mean age 16.8 years; Zimmerman, Ramirez-Valles, Zapert, & Maton, 2000). Furthermore, in a multiple regression analysis, these researchers found that parental support accounted for 12% of the variance in depression and 5% of the variance in anxiety levels. Additionally, higher levels of parental support reduced the development of depression in participants with high levels of stress. Stewart and Suldo (2011) also found strong links between perceived social support from parents and both internalizing ( $r = -.38$ ) and externalizing ( $r = -.51$ ) symptoms of psychopathology, perceived social support from teachers and internalizing ( $r = -.21$ ) and externalizing ( $r = -.37$ ) behaviors, and perceived social support from classmates and internalizing ( $r = -.29$ ) and externalizing ( $r = -.24$ ) symptomology. Furthermore, combined social support accounted for 16% of the variance in internalizing symptoms amongst their sample of middle school students. Parent support ( $\beta = -.31$ ) and classmate support ( $\beta = -.16$ ) were unique predictors of internalizing symptoms, independently accounting for 6% and 2% of

the variance in internalizing symptoms, respectively. Additionally, social support accounted for 27% of the variance in students' externalizing problems. Parent support ( $\beta = -.44$ ) and teacher support ( $\beta = -.15$ ) were unique predictors of externalizing symptoms, independently accounting for 13% and 2% of the variance in externalizing behavior, respectively.

With regards to positive indicators of psychological functioning, moderate to large relationships have been found between adolescents' life satisfaction and perceived family support ( $r = .56$ ), perceived peer support ( $r = .23$ ), and perceived school support ( $r = .33$ ; Vera et al., 2008). Similarly, Suldo et al. (2009) found that the subjective well-being of 401 middle school students was significantly related to the amount of emotional support ( $r = .38$ ), informational support ( $r = .32$ ), appraisal support ( $r = .33$ ) and instrumental support ( $r = .36$ ) they perceived receiving from their teachers. Overall, levels of teacher support accounted for 16% of the variance in students' subjective well-being, with emotional support ( $\beta = .24$ ) and instrumental support ( $\beta = .19$ ) serving as unique predictors of this positive indicator of mental health. Stewart and Suldo (2011) found that middle school students' life satisfaction was linked to perceived social support from parents ( $r = .67$ ), teachers ( $r = .37$ ), and peers ( $r = .38$ ). In their study, combined social support accounted for 45% of the variance in students' life satisfaction. Parent support ( $\beta = .61$ ) and classmate support ( $\beta = .11$ ) were unique predictors of life satisfaction, independently accounting for 25% and 1% of the variance in life satisfaction, respectively.

The aforementioned studies represent a sampling of the large body of empirical research showing that increased levels of social support are related to better

psychological functioning in youth. There are many additional studies that confirm the link between social support and favorable psychological outcomes, including lower levels of suicidality (Cheng & Chan, 2007; Dubow, Kausch, Blum, Reed, & Bush, 1989), depression (Garnefski & Diekstra, 1996; Stice, Ragan, & Randall, 2004; Needham, 2008), anger expression (Arslan, 2009), aggressiveness (Benhorin & McMahon, 2008), and conduct problems (Garnefski & Diekstra, 1996), as well as higher levels of self-esteem (Arslan, 2009), life satisfaction (Edwards & Lopez, 2006; Young, Miller, Norton, & Hill, 1995), happiness (Natvig, Albreksten, & Quarnstrom, 2003), and subjective well-being (Nevin, Carr, Shevlin, Dooley, & Breaden, 2005).

**Links between social support and academic functioning.** In addition to being related to better psychological functioning, social support from parents, teachers, and peers has consistently been positively linked to various academic outcomes in adolescence. For example, in a study of 238 seventh grade students from the Netherlands (Ahmed, Minnaert, van der Werf, & Kuyper, 2010) perceived parent, teacher, and peer support were correlated with students' beliefs about their own academic competence ( $r = .23$ ,  $.26$ , and  $.12$ , respectively) as well as students' academic achievement ( $r = .34$ ,  $.43$ , and  $.25$ , respectively). Parent ( $r = .19$ ), teacher ( $r = .07$ ) and peer ( $r = .11$ ) support demonstrated significant, albeit small, correlations with academic achievement in a national sample of 7,813 eighth, tenth, and twelfth grade students at-risk for academic failure (Chambers, Hylen, & Schrieber, 2006). Stewart and Suldo (2011) also found that perceived social support from parents ( $r = .23$ ) and teachers ( $r = .15$ ) was related to academic achievement.

Rueger, Malecki, and Demaray (2010) found that middle school boys' end-of-year GPA was significantly related to the amount of social support they perceived from their parents ( $r = .15$ ). The relationship between parent support and GPA was even stronger for girls ( $r = .29$ ). In addition, girls' GPAs were also significantly correlated with perceived social support from teachers ( $r = .12$ ), classmates ( $r = .20$ ) and close friends ( $r = .17$ ). Furthermore, these investigators found that overall social support accounted for 10% of the variance in end-of-year GPA for girls and 3% of the variance in GPA for boys. Parent support emerged as the only unique predictor of GPA for both girls ( $\beta = .30$ ,  $p \leq .01$ ) and boys ( $\beta = .16$ ,  $p \leq .05$ ) above and beyond all sources of social support combined.

In a study of the interrelationships between perceived social support, socioeconomic status, and academic achievement amongst Hispanic early adolescents, Malecki and Demaray (2006) found that social support from parents was related to academic achievement in reading ( $r = .36$ ), language arts ( $r = .34$ ), social studies ( $r = .32$ ) and total GPA ( $r = .36$ ) for low SES students, but not for higher SES students. Similarly, teacher support was related to academic achievement in reading ( $r = .44$ ), language arts ( $r = .40$ ), science ( $r = .33$ ) and total GPA ( $r = .37$ ) for low SES students only. Finally, perceived social support from classmates ( $r = .33$ ), close friends ( $r = .32$ ), and school ( $r = .38$ ) were significantly associated with academic achievement in reading for low SES students only. Furthermore, parent and classmate support moderated the impact of SES on academic achievement. That is, students with lower SES who had high levels of parent and classmate support did not significantly differ from students with high SES in their level of academic achievement (GPA) whereas students with lower SES who also reported low levels of parent and classmate support had significantly lower GPAs than

students with higher SES. Therefore, social support served as a protective factor against poor academic performance for socioeconomically at-risk students.

Perceived social support from parents, teachers, and peers has also been positively linked with academic self-concept (Malecki & Elliott, 1999), academic self-efficacy (Rosenfeld, Richman, & Bowen, 2000), attendance (Rosenfeld et al., 2000), personal valuing of education and educational commitment (Somers, Owens, & Paliawsky, 2008), academic engagement (Chen, 2005; Rosenfeld et al., 2000), satisfaction with school (Zullig, Huebner, & Patton, 2011), teacher-rated academic competence (Malecki & Demaray, 2003), and standardized academic achievement test scores (Levitt, Guacci-Franco, & Levitt, 1994).

**Mediation models of social support.** A few studies have examined social-related variables as potential mediators in the relationship between gratitude and well-being outcomes. Froh et al. (2009) found that relational fulfillment, a composite variable created by combining four items measuring family satisfaction and support, as well as friend satisfaction and support, partially mediated the relationship between gratitude and reduced physical health symptoms (e.g., headaches, dizziness, stomach aches) in a sample of 154 middle school students. This was the first study to show that some variable social in nature mediated the relationship between gratitude and an indicator of health in youth. However, these authors did not report whether or not relational fulfillment mediated the relationship between gratitude and mental health outcomes, which were also assessed in the study. Moreover, by combining family and friend support with family and friend satisfaction, these researchers did not address whether it was primarily the support

students received from their interpersonal relationships or their overall satisfaction with their relationships that accounted for the variance in physical health symptoms.

A longitudinal investigation of character strengths and subjective well-being in a sample of 149 high school students explored whether or not transcendence strengths (i.e., love, hope, meaning, zest, and gratitude) predicted later life satisfaction and whether or not social support, as measured by the *Perceived Social Support Scale* (PSS; Procidano & Heller, 1983), mediated this relationship (Gillham et al., 2011). While transcendence strengths significantly predicted later life satisfaction ( $\beta = .16, p < .001$ ), no support was found for social support as a mediating variable. The results of this study should be interpreted with caution relative to the current investigation, however, because Gillham et al. (2011) did not examine gratitude independently from the other transcendence strengths of love, hope, zest, and meaning. Additionally, these researchers only examined social support as a mediator between transcendence strengths and life satisfaction, ignoring other important psychological outcomes, such as internalizing and externalizing forms of psychopathology. Therefore, the extent to which social support mediates the relationship between gratitude and psychological functioning is still in need of more direct investigation.

A relevant study with adults examined longitudinal interrelationships between trait gratitude (as measured by the GQ-6), perceived social support (as measured by the *Interpersonal Support Evaluation List*; Cohen & Hoberman, 1983), stress and depression in a sample of 156 college freshmen (Wood et al., 2008). These researchers examined a mediation model whereby initial levels of gratitude predicted lower levels of stress and depression three months later, with initial levels of social support as the tested mediator.

They found no support for the mediation model because there was not a significant relationship between the mediator (time one social support) and outcome variables (time two stress and depression) when controlling for initial levels of stress and depression. However, these investigators used a very stringent criteria for establishing mediation set forth by Cole and Maxwell (2003) that is primarily designed for longitudinal analyses with two data collection time points. This model is different from an aim of the current investigation, which was to determine the concurrent relationships between gratitude, social support, and psychological functioning. Furthermore, Wood and colleagues (2008) limited their psychological outcomes to stress and depression, negative indicators of mental health. This study aimed to define psychological functioning more broadly by including positive indicators of mental health (i.e., life satisfaction) as well as other forms of psychopathology (i.e., externalizing behaviors) in addition to internalizing psychopathology. The current study also extended the literature by examining a different construct, academic achievement, as the outcome variable. Finally, the current study tested the mediating role of social support in a diverse sample of high school students, as opposed to a predominantly Caucasian sample of undergraduate students.

In sum, the above studies offer preliminary empirical support for a model in which social support mediates the links between gratitude and adolescents' psychological functioning and academic achievement. However, none of the aforementioned studies have directly answered the question as to whether such a concurrent mediational model exists among adolescents, thus enabling the current investigation to contribute to the existing literature on gratitude.

## Conclusions and Purpose of Study

Gratitude has been identified in the literature as a character strength or dispositional trait that is associated with enhanced overall well-being in both adults and youth. However, more research is needed to establish exactly which indicators of well-being (i.e., psychological, social, academic) are related to gratitude, particularly in youth populations. Previous studies with youth suggest that higher levels of gratitude co-occur with less depression (Froh, Emmons, et al., 2011), increased happiness and satisfaction with life (Chen & Kee, 2008; Froh et al., 2009; Froh, Emmons, et al., 2011; Park & Peterson, 2006a, 2006b), better academic performance (Froh, Emmons, et al., 2011; Park & Peterson, 2006a), and more supportive and fulfilling relationships with parents and friends (Froh et al., 2009). Research with adults has shown that gratitude is also related to decreased levels of anxiety (McCullough et al., 2002) as well as decreased levels of externalizing problems such as aggression and hostility (Watkins et al., 2003). A review of the research did not find any studies with youth that examined potential links between gratitude and externalizing symptoms of psychopathology, nor internalizing symptoms beyond depression. Moreover, while previous studies examined links between gratitude and the quality of students' relationships with their families and friends (Froh et al., 2009), no published studies have examined the role that gratitude plays in the quality of student-teacher relationships despite the fact that teacher support is very relevant to the overall well-being of adolescents (Suldo et al., 2009). In addition, the only academic variable that has been investigated in studies of gratitude with youth is GPA. Grigorenko and colleagues (2009) advocate for the use of broader indices of academic functioning such as standardized test scores, academic self-perceptions, and attendance.

Taking into consideration the major limitations of the few studies that have been conducted on correlates of gratitude in youth, the current study further explored the relationships between gratitude and the psychological, social, and academic well-being of adolescents. The current study extended previous research by examining a more diverse sample of students and by using a more comprehensive set of psychometrically sound psycho-social-academic indicators. The current study also built upon the pioneering work of Froh and colleagues (2009, 2011) and sought to fill in some of the gaps that these studies left unanswered. Specifically, the current study investigated the extent to which gratitude is related to the psychological functioning of high school students, including both positive (i.e., life satisfaction) and negative (i.e., internalizing and externalizing symptoms) indicators of mental health. Also, this study explored the nature of the relationship between gratitude and adolescents' academic functioning, as measured by students' GPAs, scores on the Florida Comprehensive Achievement Test (FCAT), attendance, and academic self-perceptions. In addition, this investigation examined the relationship between gratitude and adolescent social functioning, namely students' perceived level of social support from their parents, teachers, and classmates. Furthermore, this study investigated whether or not the relationships between gratitude and the aforementioned outcomes are the same across genders, in line with inconclusive prior research that suggests gender differences in the correlates of gratitude. Finally, the current investigation explored the extent to which social support mediates the relationship between gratitude and enhanced psychological and academic functioning. There is strong theoretical support (Frederickson, 2004) and some empirical support (Froh et al., 2009;

Suldo & Shaffer, 2008; Wood et al., 2008) for anticipating such a relationship, but the current study was the first to directly test this mediation model in youth.

## **CHAPTER 3: METHOD**

### **Research Design**

The current study utilized a correlational design in order to determine the extent to which gratitude relates to the psychological, social, and academic functioning of middle adolescents. Correlational designs are considered to be a type of non-experimental research in which the main purpose is to gather evidence to support associations between two or more naturally occurring variables (Gall, Gall, & Borg, 2007). This study was part of a larger investigation of mental health amongst middle adolescents and analysis were conducted with an archived data set that contained data originally collected during the 2010 – 2011 academic year (see Thalji, 2012, for further details). Of note, the author of this thesis had an active role in selecting the measures included in the larger study, recruiting participants, and collecting and entering the data in the larger archival dataset. A combination of self-report surveys, observer-report surveys, and permanent records were used for data collection purposes.

### **Procedures**

#### **Setting**

The population of interest is middle adolescent students. The participants in the archival dataset were recruited from two high schools located within a large, urban school district in the Southeastern United States. The specific schools were selected after the school leadership expressed interest in understanding and promoting their students'

mental health and agreed to take part in the larger longitudinal research project. The sample of students is thus considered to be a convenience sample.

One of the schools from which participants were recruited (School A) consisted of approximately 2,056 students from a rural community during the 2010-2011 school year, the year in which data collection took place. The ethnic breakdown of School A's student population was as follows: 52.3% Caucasian, Non-Hispanic; 31.0% Hispanic; 12.0% African American; 1.9% Asian/Pacific Islander, 0.5% American Indian/Alaskan, and 2.3% multiethnic. Of this population, 55% qualified for free or reduced lunch. The second school from which participants were recruited (School B) consisted of about 2,398 students from an urban community. The school population was comprised of the following ethnic groups: 40.2% Caucasian, Non-Hispanic; 44.2% Hispanic; 8.1% African American; 3.8% Asian/Pacific Islander; 0.8% American Indian/Alaskan; and 2.8% multiethnic. Of this population, 43.4% were economically disadvantaged (i.e., qualified for free or reduced lunch). The demographic features of these two schools suggests a diverse population sample that is comparable to the overall ethnic distribution in the school district and state to which these schools belong (See Table 1). One note of exception regarding the ethnic representation of the two schools participating in this study is that African American students were underrepresented, while Hispanic students were overrepresented compared to the district and state populations.

### **Overview of Dataset**

The archival dataset analyzed in the current study included complete and valid data from a total of 499 adolescents combined from the two high schools. This sample size yielded adequate statistical power according to guidelines provided by Cohen (1988).

Using Cohen's power tables, a sample of 287 participants would be adequate to detect even small effect sizes in the 0.2 to 0.3 range with power set to 0.8 and  $\alpha = 0.01$ . Stratified sampling was used to obtain adequate representation of students across different grade levels (i.e., 9<sup>th</sup>, 10<sup>th</sup>, and 11<sup>th</sup>). Participation from 12<sup>th</sup> grade students was not sought because the larger investigation was a longitudinal study spanning two academic years and it was anticipated that 12<sup>th</sup> grade students would not be able to participate in the second wave of data collection. Additionally, students taught in self-contained classrooms via Exceptional Student Education and those with limited English proficiency were not recruited for participation due to the fact that self-report questionnaires were used. This form of data collection requires a reading level of at least third grade and may cause undue distress for students who cannot read at the necessary level.

### **Recruitment of Participants and Participant Demographics**

A total of 2,007 students (941 from School A and 1,066 from School B) were recruited for participation. Students were recruited through a stratified random sample of teachers (by grade) at each school. Either the teacher or a member of the research team read a script out loud to students in the teachers' classroom(s), explaining to students (a) the purpose of the larger two-year study, (b) participation requirements, and (c) incentives offered for bringing back their signed consent forms (i.e., enrollment in a lottery for a \$50 gift card to the local mall) and for participating in the study (i.e., a free movie pass). Then, each student received two copies of the consent form (see Appendix G): one for their parents to sign and return to the school, and one for their parents to keep. Consent forms were also made available in Spanish for students whose parents could

Table 1  
*School, District, and State Demographic Information*

	School A %	School B %	Total %	District %	State %
<b>Ethnicity</b>					
Caucasian	52.3	40.2	45.8	41.4	44.3
Hispanic	31.0	44.2	38.1	28.5	26.3
Black	12.0	8.1	9.9	21.9	23.1
Asian	1.9	3.8	3.0	3.1	2.6
American Indian	0.5	0.8	0.6	0.3	0.3
Multiethnic	2.3	2.8	2.6	n/a	n/a
<b>Free/Reduced Lunch Status</b>					
Yes	55.0	43.4	48.4	53.7	53.5
No	45.0	56.6	51.6	46.3	46.5

*Note.* School demographic information was obtained from reports by the National Center for Education Statistics. District and State demographic information was obtained from 2011 reports by New America Foundation.

only read/write in Spanish, and contact information was provided in the event that any parents had questions. A total of 529 (26.36%) of recruited students (28.91% and 24.11% from schools A and B, respectively) returned consent forms (response rate range: 3% to 62% across recruited classes; variations in classes' rates of participation appeared largely attributable to teacher enthusiasm and diligence in prompting students to return consent forms). Of the 529 students who returned parent consent forms, four students were not given permission to participate in the study; 12 students withdrew from the schools between the time consent was obtained and the time data collection took place; two students were chronically absent during data collection days; four students did not assent to participate; one student withdrew assent during self-report data collection; and two students were withdrawn from the study due to language barriers that prevented them from being able to complete the self-report questionnaires. Thus, complete self- and teacher-report data was collected for 504 students. For reasons specified in the next chapter, data from five of these students were excluded from the final dataset analyzed in the current study, resulting in a final sample of 499 participants.

Demographic data for the 499 students who participated in the current study are provided in Table 2. The final sample yielded adequate numbers of boys and girls as well as students from each grade level. In addition, a comparison with the data in Table 1 shows that the ethnic composition of the sample was representative of the school population as a whole, with the exception of an overrepresentation of students identifying themselves as multiracial. Similarly, the percentage of economically disadvantaged students (as measured by free or reduced lunch status) in the sample was consistent with that of the overall school population.

In addition to student participants, 84 teachers (44 from School A and 40 from School B) participated in the study by completing behavior rating scales for one or more of the participating students. The mean number of students that each teacher rated was 5.95 (SD= 3.66, range: 1 to 12). The majority of the teacher participants were Caucasian and female. The average teacher had 14.17 years of teaching experience.

### **Data Collection**

In September of 2010, approval to conduct the larger study was obtained from the USF Institutional Review Board (IRB) as well as the school district in which the participating schools are located. In late October 2010, students in the targeted classrooms were read a verbal description of the study accompanied by copies of the informed consent form. Signed parent consent forms were collected by identified school personnel for a limited time period, after which a member of the research team returned to the school to collect the completed forms and conduct the raffles for the six \$50 mall gift certificates. In December 2010, students with parent consent to participate were called to a large space (i.e., the auditorium or cafeteria), in groups of 50-70 students to

complete a packet of questionnaires. Before students responded to items within the packet, a member of the research team read the student assent form (see Appendix H) aloud to all students in session; only students who gave written assent to participate continued with the self-report data collection. Students were informed that they were free to withdraw from the study at any point during data collection procedures and that such a decision would not lead to any disciplinary action nor affect their relationship with their school or the university.

After students assented to participate, a member of the research team who was trained in data collection procedures guided the group through the completion of a demographic questionnaire and a couple of practice questions that were similar in format to other items within the packet. Then, students proceeded to independently complete the packet of questionnaires, which were counterbalanced to mitigate possible order effects. The research team responded to student questions with standard responses and monitored students throughout data collection to ensure that they were responding independently. After a student completed his or her packet, one member from the research team visually inspected each page in the packet to guarantee that all items were completed and to detect errors in responding. In the event an error was discovered, the student was asked to complete or correct the item(s). After the packet had been completed, checked for errors, and returned to a member of the research team, the student was compensated with a pre-paid movie ticket (worth a monetary amount of approximately \$7.00) and dismissed from the room. A member of the research team returned to the schools on subsequent occasions to collect data from students who were absent the day of initial group data collection.

Table 2  
*Demographic Information of Participants (N = 499)*

Variable	School A Sample (n= 256)		School B Sample (n=243)		Total Sample (N= 499)	
	n	%	n	%	n	%
Gender						
Male	96	37.50	107	44.03	203	40.68
Female	160	62.50	136	55.97	296	59.32
Grade						
9	134	52.34	82	33.74	216	43.29
10	98	38.28	84	34.57	182	36.47
11	24	9.38	77	31.69	101	20.24
Ethnicity						
Caucasian	137	53.52	81	33.33	218	43.69
Hispanic	68	26.56	100	41.15	168	33.67
Black	22	8.59	19	7.82	41	8.22
Asian	4	1.56	9	3.70	13	2.61
Multiethnic	22	8.59	28	11.52	50	10.02
Other	3	1.17	6	2.47	9	1.80
Free/Reduced Price Lunch Status						
Yes	127	49.61	117	48.55	244	49.09
No	129	50.39	124	51.45	253	50.91

Approximately one to two weeks after the collection of students' self-report data, one teacher per student was asked to provide additional information about students' psychological, social, and academic functioning by completing the BASC2-TRS-A. All teachers provided written consent to participate (see Appendix I), and verified they were familiar with each student they rated (i.e., had known the student for at least two months). For each student a teacher rated, he or she was compensated with a \$5 gift card to a local store. A member of the research team returned to the school several times over a couple of months to collect completed teacher rating scales and compensate teachers accordingly until each student participant was rated by one teacher. Finally, at the end of the school year in which student and teacher report data had been collected, school personnel provided the research team with requested information from each student participant's

school records, including grades earned in courses (used by the research team to calculate a fall 2010 semester GPA), FCAT scores, and attendance.

### **Data Entry and Screening**

Data was entered into SPSS by the author of this thesis, as well as a team of trained graduate research assistants. After data from all questionnaire packets were entered, every fifth questionnaire packet was checked by a different research team member for data entry errors by comparing the written responses within the packet to the responses entered into the SPSS database. When a discrepancy between the two was detected, the error was corrected and the questionnaire packets prior to and after that fifth questionnaire packet were also crosschecked with the data entered in the SPSS file. If any errors were identified within any of these additional questionnaire packets, the same procedure was repeated until a packet with no errors was found. Additionally, once all of the data was entered it was screened for data points that were outside the possible range of scores (i.e., the minimum and maximum) for a given indicator. If an error was detected this way, then packets prior to and after the packet containing an error were also checked if they had not already been examined.

### **Variables of Interest**

The current study focused on gratitude as the primary predictor variable and constructs pertinent to psychological, academic, and social functioning as the outcome and mediating variables. Gratitude was defined in this study as a trait, or disposition, towards feeling thankful to a variety of people and for a variety of things in life (McCullough et al., 2002).

The three outcome variables that were analyzed under the domain of psychological functioning were life satisfaction, internalizing symptoms, and externalizing symptoms. Life satisfaction is defined as one's cognitive appraisal of his or her satisfaction with life overall according to his or her own set of unique criteria, and it is one of three components (along with positive affect and negative affect) that make up what is known as subjective well-being (SWB), or the scientific term for happiness (Diener, Emmons, Larsen, & Griffin, 1985). Life satisfaction was chosen as the variable to represent positive psychological functioning in this study because it is a more stable indicator of well-being in comparison to positive or negative affect, which, given their status as emotional states, are subject to more day to day variation (Diener, Lucas, & Oishi, 2002). Furthermore, life satisfaction was selected over the broader variable of SWB because the researcher thought SWB might be confounded with the predictor variable of gratitude since gratitude is typically one of the positive emotions included in measurement of positive affect, a component of SWB. Thus, life satisfaction was considered a more stable and pure measurement of positive psychological functioning for the purposes of this study.

Internalizing symptoms is defined as thoughts, behaviors, or feelings indicative of negative emotions and inwardly directed distress, such as those associated with clinical disorders like anxiety and depression (Reynolds & Kamphaus, 2004). Some examples of internalizing symptoms are excessive worry, feelings of worthlessness, avoiding people, suicidal thoughts, or paranoia. Externalizing symptoms, on the other hand, refers to thoughts, behaviors, or feelings that characterize outwardly directed distress such as those associated with clinical disorders like conduct disorder, substance abuse, and attention

deficit disorder. Some examples of externalizing symptoms are disruptive behaviors, aggressiveness/fighting, vandalism, and risk-taking behaviors (Reynolds & Kamphaus, 2004). Recognizing that individuals may experience these symptoms at subclinical levels, the current study analyzed the amounts of internalizing and externalizing symptomology exhibited by students as continuous variables, rather than as clinical cut-off scores.

Within the academic functioning domain, the four variables that were examined are semester grade point average (GPA), standardized reading scores on the Florida Comprehensive Assessment Test (FCAT), school attendance, and academic self-perceptions. GPA is a numeric value between 0.0 and 4.0 that reflects the average of the grades a student earned on any courses attempted during the semester in which student self-report data was collected (fall 2010). GPA, often in its cumulative form (reflecting average grade earned in all high school level courses), serves as the primary indicator of academic achievement in the United States. For instance, whether or not students are allowed to receive a high school diploma depends on their cumulative GPA (i.e., in most states students must maintain at least a 2.0 GPA, which represents a C average). Because high school courses are not standardized in regards to content, rigor, and level of work required, a GPA of 3.5 for one student may reflect something different than a GPA of 3.5 for another student who took more challenging classes. Thus, one way to account for such discrepancies is to weight different courses more heavily than others by assigning additional points to a passed class at a certain level of difficulty. In the current investigation, the GPA scores were weighted to reflect differences in the difficulty level of the classes students took. Specifically, 0.5 points were added to the value of the course grade for classes taken at the Honors level and 1.0 points were added to successfully

completed college-level classes (i.e., Advanced Placement or Dual Enrollment). As a result, some students in the sample had GPA scores above a 4.0 (i.e., if they earned mostly As in a schedule that included honors or college-level classes).

The FCAT is a criterion-referenced assessment that the state of Florida uses to measure students' mastery of specific skills in reading, mathematics, science, and writing (Florida Department of Education, 2005). Students from different grade levels take different portions or subjects of the FCAT. The reading portion of the FCAT was chosen for inclusion in analyses in the current study because it is taken in both 9<sup>th</sup> and 10<sup>th</sup> grade and was, therefore, the subject area that the greatest number of participants (n=389) had taken. The reading portion of the FCAT reflects students' mastery of reading skills such as fluency, vocabulary development, reading comprehension, and literary analysis (<http://www.floridastandards.org>). Students' level scores were analyzed in this study. Level scores range from 1 to 5, are assigned based on cutoff standard scores, and reflect the level of mastery a student demonstrates on the skills assessed, where higher scores indicate better performance.

School attendance refers to the number of scheduled school days that a student attends during a given school semester or school year, and it is a readily available objective indicator of behavioral engagement in schooling. In the current study, school attendance was recorded as the number of absences a student has on his or her school record for the school semester in which they participated in the study. Therefore, lower values reflect better school attendance and, conversely, higher values indicate poorer school attendance. The three variables above (semester GPA, reading FCAT scores, and

semester absences) were ascertained via students' official school records, provided to the researcher team by school staff.

The fourth academic functioning variable, academic self-perceptions, is defined as a student's perceived ability, capability, or skill level in academic related tasks. In other words, academic self-perceptions reflect a student's own description and evaluation of his or her academic competence (McCoach & Siegle, 2003). Academic self-perceptions are a significant contributor to and predictor of academic achievement (Lyon, 1993). Furthermore, such beliefs and school-related attitudes are the types of variables that researchers recommend including in the overall picture of academic functioning to supplement the more objective measures of GPA and test scores (Grigorenko et al., 2009). This variable was assessed via a self-report survey, described in detail in the following section.

The variable to be considered within the social functioning domain is alternatively referred to as supportive social relationships or perceived social support. Perceived social support is defined as "an individual's perceptions of general support or specific supportive behaviors (available or enacted upon) from people in their social network, which enhances their functioning and/or may buffer them from adverse outcomes" (Malecki & Demaray, 2002, p. 2). Four types of support have been identified in the literature: emotional (i.e., offering trust, love, empathy), instrumental (i.e., providing resources such as time and money), informational (i.e., providing advice or knowledge relevant to a particular situation), and appraisal (i.e., providing evaluative feedback; Tardy, 1985).

Social support was chosen as the variable to represent students' social functioning because developing and maintaining supportive relationships has proven to be especially important to students' overall adjustment (Arslan, 2009; Demaray, Malecki, Davidson, Hodgson, & Rebus, 2005; Suldo & Shaffer, 2008; Suldo et al., 2009) and perceived social support is highly correlated with other aspects of social functioning, such as demonstration of social skills (Demaray & Elliott, 2001; Malecki & Demaray, 2002). Moreover, the amount of support perceived from a relationship partner greatly determines one's satisfaction with the relationship and helps define the quality of that relationship (Kasprzak, 2010). As perceived social support and relationship quality are inherently related, the examination of both variables in the current study is unnecessary. The literature suggests that the three most important or influential relationships adolescent students have are with their parents, peers, and teachers (Arslan, 2009). Therefore, perceived social support from parents, teachers, and classmates were analyzed in the current study and were assessed via a self-report measure described below.

## **Measures**

### **Demographic Data Form**

This questionnaire contained items designed to gather data on student grade level, age, gender, socioeconomic status (SES; as measured by whether or not students qualify for free or reduced-price school lunch), and race/ethnicity (see Appendix A). Additionally, the form included two sample questions using a Likert-type scale to which students select a response option. These practice items were similar in format to subsequent scales used in the questionnaire packet and were used to teach students how to complete the Likert-type questions.

## The Gratitude Questionnaire-6

The Gratitude Questionnaire-6 (GQ-6; McCullough, Emmons, & Tsang, 2002) is a six-item scale used to assess gratitude as a trait or disposition (see Appendix B). This scale was selected for inclusion in the current study because of its clear construct validity, psychometric properties, and brevity. The GQ-6 assesses all four facets of the grateful disposition as conceptualized by experts in the study of gratitude: intensity (i.e., how strongly one experiences gratitude), frequency (i.e., how often one feels grateful), span (i.e., experiencing gratitude for multiple life events and circumstances), and density (i.e., feeling grateful to many people for any specific positive outcome). Prior research shows that the measure has a robust, one-factor solution, suggesting that together these four aspects of gratitude represent the overall grateful disposition (McCullough et al., 2002). The items are worded as close-ended statements. Students respond to each item using a Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item reads, "I have so much in life to be thankful for." Two of the items (Items 3 and 6) are reverse scored. A sample reversed-scored item is, "When I look at the world I don't see much to be thankful for." Responses for each item are averaged to get an overall score from 1 to 7. Higher scores indicate greater levels of gratitude.

The GQ-6 was originally developed for use with adults. A recent study investigated the reliability and validity of this measure with a sample of adolescents in grades 6 through 12 (Froh, Fan, Emmons, Bono, Huebner, & Watkins, 2011). Internal consistency reliability estimates (Cronbach's alpha) of the GQ-6 for the various age groups represented in the sample were all acceptable, ranging from .76 (ages 12-13) to .85 (age 14). Validity evidence for the GQ-6 was also strong. For example, the GQ-6

demonstrated good convergent validity across age groups; the scale was positively correlated ( $r = .42$  to  $.61$ ) with another measure of gratitude, the GAC (McCullough et al., 2002). The GQ-6 was also positively associated with positive affect ( $r = .28$  to  $.44$ ), as measured by the Positive and Negative Affect Scale for Children (PANAS-C; Laurent et al., 1999) and life satisfaction ( $r = .44$ -. $.59$ ) as measured by The Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS; Seligson, Huebner, & Valois, 2003). The GQ-6 was negatively associated ( $r = -.24$  to  $-.44$ ) with scores on the Center for Epidemiologic Studies Depression Scale for Children (CES-DC; Weissman, Orvaschel, & Padian, 1980), as well as negative affect ( $r = -.16$  to  $-.35$ ) as measured by the PANAS-C (Laurent et al., 1999).

In Froh, Fan et al.'s (2011) research, confirmatory factor analysis (CFA) yielded a one-factor structure of the GQ-6 with all age groups. Factor loadings for each item were acceptable, except for the sixth item, which had a factor loading of 0.21. This item ("Long amounts of time can go by before I feel grateful to someone or something") was also reported to be somewhat difficult to understand by youth, perhaps because of its abstractness and the fact that it is a reversed scored item. Froh and colleagues (2011) recommended that future investigators using the GQ-6 with youth should either exclude this item or interpret it with caution. Therefore, the current study conducted an exploratory factor analysis (EFA) for the items on the GQ-6 to determine whether or not the sixth item should be used in remaining analyses. Results are provided in the following chapter.

### **Students' Life Satisfaction Scale**

The Students' Life Satisfaction Scale (SLSS; Huebner, 1991) is a measure designed to assess global life satisfaction in children in grades 3 to 12 (see Appendix C). The SLSS is comprised of seven items asking students to indicate the extent to which they endorse general statements about their life (e.g., “My life is just right,” “I would like to change many things in my life”) using a Likert-type scale, ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Composite scores are calculated by reverse-scoring two items that are negatively worded (items 3 and 4), summing the responses, and then dividing the sum by the number of items to yield an overall score of global life satisfaction. For interpretation, higher mean scores represent greater levels of global life satisfaction.

The SLSS has demonstrated high internal consistency ( $\alpha = .82$ ) and high test-retest reliability ( $r = .74$  and  $r = .68$ ) in a sample of 202 youth (ages 8 to 14 at 1- and 2-week intervals, respectively (Huebner, 1991). The SLSS demonstrates moderate convergent validity with other measures of SWB, including the Happiness and Life Satisfaction subscale of the Piers-Harris ( $r = .53$ ; Piers & Harris, 1964) and one item assessing life satisfaction from the Andrews and Withey Life Satisfaction Scale ( $r = .62$ ; Andrews & Withey, 1976).

### **Self Report of Personality Form of the Behavior Assessment System for Children-Adolescent Version, 2<sup>nd</sup> Edition**

The BASC-2 SRP-A (Reynolds & Kamphaus, 2004) is a scale measuring different areas of psychopathology and adaptive functioning in youth ages 12 to 21 years. This instrument consists of 176 items, 69 of which are written in *true/false* format; the

remaining 107 statements ask participants to respond on a four-point scale range from 1 (*never*) to 4 (*almost always*). Twelve clinical subscales and four adaptive scales are yielded by this measure. Seven of these scales (i.e., atypicality, locus of control, social stress, anxiety, depression, sense of inadequacy, and somatization) are combined to form an Internalizing Problems composite score, which was analyzed in the current study. The BASC-2 SRP A also includes a validity index scale (*V index*) that is used to determine whether raters are carefully reading and understanding the questions. This scale consists of nonsensical items such as, “I take a plane trip from New York to Las Vegas at least twice a week.” If endorsed, such items alert assessors that participants might not have valid data. The *V index* was also included in the current study. The current investigator and the principal investigator (PI) of the larger study received permission from the publishers of the BASC-2 SRP to revise the measure to include only the items that loaded on to the subscales and composite scales relevant to the research questions in the larger study. See Appendix D for a copy of the adapted measure students completed in the current study.

The manual for the BASC-2 (Reynolds & Kamphaus, 2004) provides extensive support for the SRP-A as a reliable and valid measure of youth psychopathology and adaptive functioning across different populations. Specifically, the Internalizing Problems composite has demonstrated acceptable internal consistency ( $\alpha = .96$ ) and good test-retest reliability across an approximately 20-day period ( $r = .82$ ). The Internalizing Composite has moderate to strong convergent validity with other measures of psychopathology, including the total score of the Child Depression Inventory ( $r = .69$ ; [CDI] Kovacs, 1992)

and the Internalizing Syndrome Scale of the Achenbach System of Empirically Based Assessment (ASEBA; Achenbach & Rescorla, 2001) Youth Self-Report ( $r = .80$ ).

**Teacher Rating Scale Form of the of the Behavior Assessment System for Children-Adolescent, 2<sup>nd</sup> Edition**

The BASC-2 TRS-A (Reynolds & Kamphaus, 2004) measures multiple types of psychopathology as well as adaptive functioning in youth ages 12 to 21 years. The BASC-2 TRS-A includes 139 items featured in a checklist format to be completed by a teacher who has known the student for at least two months. Each item is a statement about the student in question (e.g., “has trouble staying seated”), and teachers are asked to respond using a 4-point scale, ranging from 1 (*never*) to 4 (*almost always*). This measure was selected to index externalizing behavior in the larger project in line with the notion that observer report is a more reliable measure of externalizing behavior than self-report measures (Loeber, Green, Lahey, & Stouthamer-Loeber, 1991). The BASC-2 TRS-A yields ten clinical subscales and five adaptive subscales. The entire measure was administered to teachers in the larger study. Due to the purposes of the current study, only the Externalizing Problems composite scale (comprised of the aggression, conduct problems, and hyperactivity subscales) was analyzed. Due to copyright restriction, a copy of the BASC-2 TRS-A is not included in the appendices of this manuscript.

As summarized in the BASC-2 manual (Reynolds & Kamphaus, 2004), the Externalizing Problems composite has demonstrated acceptable internal consistency ( $\alpha = .96$ ) and strong test-retest reliability ( $r = .89$ ) with anywhere from a one-week to nine-week interval between ratings. The Externalizing Problems composite has yielded moderate to strong concurrent validity with other measures of externalizing

psychopathology, including the Externalizing Syndrome Scale of the ASEBA ( $r = .76$ ) and the Oppositional ( $r = .68$ ) and Hyperactivity ( $r = .78$ ) scales of the Conners' Teacher Rating Scale-Revised (CTRS-R; Conners, 1997).

### **Child and Adolescent Social Support Scale**

The Child and Adolescent Social Support Scale (CASSS; Malecki, Demaray, & Elliott, 2000) is 60-item self-report measure designed to assess young people's perceptions of social support from five sources: parent(s), teacher(s), classmate(s), a close friend, and school. The CASSS was designed for use with students in grades 3 to 12. For each source subscale (i.e. the parents, teachers, classmates, close friend, and school subscales), 12 items measure four different types of social support (emotional, instrumental, appraisal, and informational). Students rate the extent to which they perceive each type of support is provided by a given source. Items such as "*My parent(s) show me they are proud of me,*" and "*My teacher(s) care about me*" are rated using a Likert scale that range from 1 (*never*) to 6 (*always*). Subscale scores are calculated by summing the frequency ratings on the twelve items on each subscale. Only the parent, teacher, and classmate subscales were administered for the purposes of the larger study (see Appendix E). The classmate subscale, rather than the close friend subscale, was chosen as the measure for peer support because it is assumed that a close friend is, by nature, supportive and so participants might not show as much variation on the close friend subscale as they would on the classmate scale. Moreover, the classmates subscale offers a broader picture of peer support as compared to consideration of one close friend.

Regarding reliability, evidence was found for high 8 to 10 week test-retest reliability ( $r = .78$ ) for the total composite score and individual subscales ( $r = .58$  to  $.74$ ;

Demaray et al., 2005). High internal consistency of the subscales of interest (i.e., parent, teacher, and classmate) is supported by alpha coefficients of .89, .92, and .94, respectively (Malecki & Demaray, 2002). The CASSS parent, teacher, and classmate subscales demonstrate adequate concurrent validity as they are significantly correlated with the parent, teacher, and classmate scales from Harter's (1985) Social Support Scale for Children ( $r = .56, .48, \text{ and } .36$ , respectively; Malecki & Demaray, 2003). The factor structure of the CASSS has been upheld with both confirmatory factor analysis (CFA; Malecki & Demaray, 2002) and oblique rotation factor analysis (Malecki & Demaray, 2003).

### **School Attitude Assessment Survey-Revised**

The SAAS-R (McCoach & Siegle, 2003) is a 35-item self-report measure used to collect information on various attitudes and beliefs pertinent to academic achievement, including academic self-perceptions (i.e., personal beliefs about one's own academic skills and competencies), attitudes toward teachers (i.e., positive affect towards one's teachers), attitudes toward school (i.e., interest in and affect towards school in general), goal valuation (i.e., how much students value the goals of school and education), and motivation and self-regulation (i.e., self-generated thoughts, emotions, strategies, and behaviors that are used to attain educational goals; McCoach & Siegle, 2003). Only three of the five scales were administered in the larger study: academic self-perceptions, attitudes toward school, and goal valuation (see Appendix F). Only the academic self-perceptions scale was analyzed in the current investigation. Students respond to each item using a 7-point Likert-type scale with ratings from 1 (*strongly disagree*) to 7 (*strongly agree*). Scores on each scale are calculated by averaging students' responses to each item

within a subscale. In line with the purpose of this study, only the 8-item Academic Self-Perceptions scale (e.g., “I am good at learning new things in school”) was analyzed.

During the development and initial validation of the SAAS-R, the final 35-item, five-factor version was supported by confirmatory factor analysis (with item factor loadings ranging from .56 to .91) and demonstrated adequate fit. The Academic Self-Perceptions scale demonstrated adequate reliability, with an internal consistency of .86. As a whole, the SAAS-R also demonstrated high criterion validity, as scores on the instrument were successful in identifying academically able achievers from academically able underachievers (McCouch & Siegle, 2003). In an independent study of the psychometric properties of the SAAS-R, Suldo, Shaffer, and Shaunessy (2008) also found support for the five-factor structure of the measure using both exploratory and confirmatory factor analysis. Item factor loadings for the 8 items on the Academic Self-Perceptions scale ranged from .44 to .75, and no items loaded at or above .30 on a second scale. Furthermore, the five SAAS-R scales were able to differentiate between three groups of students with differing levels of academic achievement (based on GPA), providing additional support for criterion-related validity. Regarding convergent validity, the Academic Self-Perceptions scale was significantly correlated with academic self-efficacy ( $r = .64$ ), as measured by the Self-Efficacy Questionnaire for Children (Muris, 2001).

## **Overview of Data Analysis**

### **Preliminary Analyses**

All data analyses were conducted using Statistical Analysis Software—version 9.3 (SAS-9.3). Once data were entered and screened for data entry error, appropriate

descriptive statistics (measures of central tendency and variability) were calculated for each continuous predictor, outcome, and mediator variable. Variables that displayed non-normal distributions were transformed in consultation with the thesis committee. Data were screened for outliers and underlying assumptions of regression analyses (e.g., normality, homoscedasticity of errors, linear relationship between variables, absence of multicollinearity) were examined. Additionally, the researcher tested for between-group differences in outcome variables that may occur due to demographic characteristics such as gender, grade level, SES, ethnicity and school; variables that emerged as statistically significant were included as covariates in subsequent analyses.

### **Correlational Analyses**

*Research Question 1: To what extent is gratitude related to the psychological well-being of middle adolescents?*

*Research Question 2: To what extent is gratitude related to the academic achievement of middle adolescents?*

*Research Question 3: To what extent is gratitude related to supportive social relationships in middle adolescents?*

To examine the bivariate associations between the predictor variable (gratitude) and outcome variables of interest in questions 1, 2, and 3, a correlation matrix was constructed to permit examinations of the associations between gratitude and the following variables: life satisfaction, internalizing problems, externalizing problems, GPA, reading FCAT scores, attendance, academic self-perceptions, parent support, teacher support, and peer support. Each correlation coefficient and its associated p-value were examined in order to determine the magnitude and statistical significance of the

associations between gratitude and students' psychological well-being, academic achievement, and social relationships. For statistically significant relationships, follow-up multiple regression analyses were conducted to examine the relationship between gratitude and each outcome while controlling for covariates.

### **Regression Analyses**

*Research Questions 4: Are the relationships between gratitude and psychological well-being, academic achievement, and social relationships consistent across genders?*

To assess whether or not gender moderates any of the bivariate relationships examined in research questions 1, 2, and 3, a series of multiple regression analyses were conducted. Each regression equation included the main effect of gratitude, the main effect of gender, an interaction term (gender\*gratitude), and demographic covariates as appropriate. A sample equation is below.

$$\text{Internalizing symptoms} = \text{Gratitude} + \text{Gender} + (\text{Gratitude} * \text{Gender})$$

In the event a statistically significant interaction term was detected, the nature of the association between gratitude and the outcome was clarified by regressing the outcome on gratitude by gender group.

### **Path Modeling**

*Research Question 5: Does perceived social support mediate the relationship between gratitude and psychological well-being in middle adolescents?*

*Research Question 6: Does perceived social support mediate the relationship between gratitude and academic functioning in middle adolescents?*

Path models with manifest variables were constructed and analyzed in order to examine direct and indirect effects of gratitude on psychological and academic outcomes

of interest and to test whether or not parent, teacher, and/or classmate support mediated these relationships. Analyses were conducted using the maximum likelihood method of parameter estimation and were performed on variance-covariance matrices. Goodness of fit indices were examined for each model and the size and significance of path coefficients were examined. Covariates were entered into the models as predictor variables along with gratitude and the residual terms of the three social support variables were allowed to covary in order to account for the fact that these three variables were not assumed to be independent of one another. Figure 1 shows an example of the type of path model that was analyzed for each psychological and academic outcome variable that demonstrated significant correlations with gratitude. The figure identifies each parameter that was estimated with an (\*). Curved lines with bi-directional arrows indicate

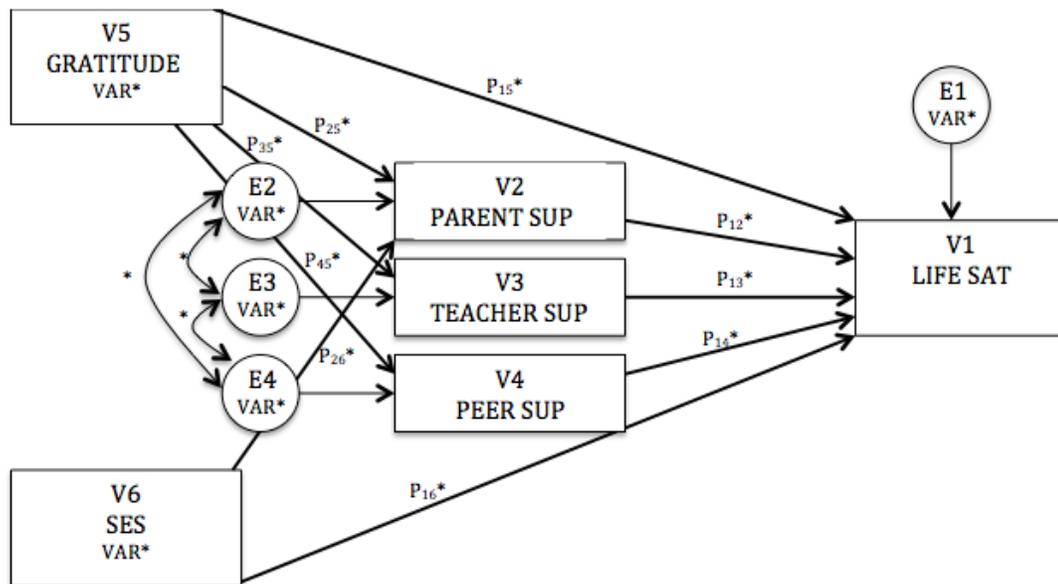


Figure 1: Hypothesized Path Model Predicting Direct and Indirect Effects of Gratitude on Life Satisfaction. VAR= variance. V=variable. P= path coefficient. E=error or residual. \*Estimated parameter.

covariances that were estimated. Variances of exogenous variables (including residual terms) were also estimated in accordance with guidelines provided by Hatcher (1994).

### **Ethical Considerations**

In November 2012, the USF Institutional Review Board (IRB) approved an amendment to the larger study to include the additional research questions and data analyses specific to the current study. In order to maintain participants' confidentiality, students and teachers were assigned code numbers for use throughout data collection. Data were organized by code numbers and stored in electronic databases only accessible to approved members of the research team. Participants' names are not attached to code numbers within the electronic file. A master copy of participants' names and their corresponding code numbers (necessary to match data records across the two years of the larger study) is stored within a locked cabinet located in the university office of the PI of the larger study. Only the PI and trained members of the research team have access to these records. Additionally, all identifying information has been removed from any hard copies of school records and completed rating scales, and these documents have been stored in the PI's locked office. Finally, participants' individual responses to the questionnaires were not shared with school staff.

## CHAPTER 4: RESULTS

This chapter contains the results of the analyses conducted to answer the research questions posed in the current study. First, procedures used to ensure the validity of the data collected, to check for the accuracy in which data were entered, and to handle missing data are summarized (and reported more fully in Thalji, 2012). Next, results of data screening and preliminary analyses are presented. Finally, results for each research question are presented in sequential order. For research questions one through three, bivariate correlation coefficients and results from multiple regression analyses are described in order to determine the relationships between gratitude and aspects of adolescents' psychological, social, and academic functioning. For research question four, the results of multiple regression analyses are presented to determine whether or not gender acts as a moderator in the relationships between gratitude and outcomes of interest. Finally, research questions five and six are answered through path analysis.

### Preliminary Analyses

#### Validity of Data

**Student self-report.** To determine the validity of students' self-report survey data, participants' scores on the BASC-2 SRP-A V (validity) index were examined. The V index contains nonsensical items that, if endorsed, may indicate that a student was not paying close attention, reading the items carefully, comprehending the questions, or cooperating with the data collection process. The BASC-2 manual advises that a sum score of 3 is in the "caution" range, while scores of 4 or above denote "extreme caution."

Thirteen participants had scores of 3. The research team manually inspected the questionnaire packets of these 13 students and all of them appeared to contain valid data on all measures (i.e., lacked evidence of haphazard responding). Therefore, these 13 participants were retained in the study. Six participants had *V* index scores ranging from 4 to 7. A visual inspection of the protocols indicated that three of these participants should be removed from the sample because they endorsed an impossible item (e.g., “I have just returned from a 9-month trip on an ocean liner”), and appeared to respond in a haphazard manner on at least one additional measure. The remaining three participants were retained because their pattern of responses on the BASC-2 SRP-A was similar to the items they endorsed on other measures, and they did not endorse any of the impossible items on the *V* index.

**Teacher report.** To determine the validity of teacher report data on the BASC-2 TRS A, a member of the research team visually inspected all teacher protocols for haphazard response styles. One additional participant was removed from the study because the BASC-2 TRS-A for this individual was not completed in a valid manner (specifically, the teacher endorsed “Never” for 121 of the last 122 items, including those items that were negatively phrased and thus would logically merit a response such as “Almost Always”). In sum, the validity check resulted in the exclusion of four of the 504 students who participated in data collection.

### **Accuracy of Data Entry**

**Student self-report.** Data were entered into SPSS by the author of this thesis, as well as a team of trained graduate research assistants. After data from all questionnaire packets were entered, every fifth questionnaire packet was checked by a research team

member for data entry errors by comparing the written responses within the packet to the responses entered into the SPSS database. When a discrepancy between the two was detected, the error was corrected and the questionnaire packets prior to and after that fifth questionnaire packet were also crosschecked with the data entered in the SPSS file. If any errors were identified within any of these additional questionnaire packets, the same procedure was repeated until a packet with no errors was found. This procedure resulted in checking a total of 206 (40.87%) out of the 504 student survey packets. Each survey packet contained 338 items for a total of 69,628 checked data entry points. A total of 227 errors were detected within these data entry points, yielding an accuracy rate of 99.67%.

**Teacher report.** Every 10<sup>th</sup> teacher survey packet (which included the BASC-2 TRS-A) was checked for data entry errors by a member of the research team using the same procedure described above. This process resulted in checking a total of 92 (18.25%) of the 504 teacher survey packets. Each survey packet contained 164 items for a total of 15,088 checked data entry points. A total of 49 errors were detected within the 92 checked packets, resulting in an accuracy rate of 99.68%.

### **Missing Data**

**Student self-report.** A total of 265 (52.6%) of the 504 participants skipped at least one item within the student self-report packet. Conversely, 239 participants had zero missing data points. Of the 265 students with missing data, the average number of missing items was 1.89 (range: 1 to 21, mode = 1). The measure that most commonly contained missing data was the BASC-2 SRP A (64 students skipped one or more item). Of these 64 students, 84.4% skipped only one item, 9.4% skipped two items, and 4.7% skipped three items. One student missed 18 items from this scale. Missing items on the

BASC-2 SRP A were handled according to instructions found in the BASC-2 manual (Reynolds & Kamphaus, 2004). Specifically, if students were only missing one or two items for a particular scale, then a constant value (provided in a table within the manual) was inserted for the missing data point. No students were missing more than two items per scale.

Missing data on all other self-report measures (i.e., GQ-6, SLSS, CASSS and SAAS-R) were handled by imputing the participant's mean value (rounded to the nearest whole number) on the given scale in place of the missing data point(s) as long as no more than 20% of the data points for that scale were missing. For example, if a student were missing no more than one item on the GQ-6, then his or her missing value would be estimated by taking the mean of the other five items. If students were missing more than 20% of items on a given scale, then the data were left as missing and scale scores were not obtained. In the current investigation, one participant was missing more than 20% of data for the GQ-6 and was therefore removed from the study, resulting in a total sample size of 499.

**Teacher report.** A total of 41 (8.1%) of the 504 participants were missing at least one item on the BASC-2 TRS-A. Conversely, 463 participants had zero missing data points. Of the 41 students with missing data, the average number of missing data points was 1.10 (range: 1 to 5, mode = 1). Of cases with missing data, 82.9% were missing data on one item, 9.8% were missing data on two items, and 7.3% were missing three or more items. Missing items on the BASC-2 TRS A were handled according to instructions found in the BASC-2 manual (Reynolds & Kamphaus, 2004). Specifically, if students were only missing one or two items for a particular scale, then a constant value

(provided in a table within the manual) was inserted for the missing data point. No students were missing more than two items per scale.

**School records.** Data from school records that was unavailable (e.g., the student withdrew from school prior to the conclusion of the academic term) was left as missing. Students with missing school record data were not included in analyses involving the academic variable for which they were missing data but were retained for all other analyses. Of the 499 participants in the current study, three students were missing GPA data, one student was missing attendance records, and 110 students were missing FCAT reading scores. Of the 110 students without FCAT reading data, 101 were 11<sup>th</sup> grade students and therefore did not take the reading portion of the FCAT because it is not required in this grade level. Nine (2.3%) of the 398 students who were expected to have FCAT reading scores (i.e., 9<sup>th</sup> and 10<sup>th</sup> grade students) were missing FCAT data, most likely due to absences from school on the day(s) the test was administered.

### **Data Screening**

The valid and complete dataset ( $N = 499$ ) was screened using Statistical Analysis Software, version 9.3 to detect the presence of univariate and multivariate outliers. Univariate outliers were defined as participants scoring equal to or larger than 3.5 standard deviations from the group mean on an outcome variable of interest (e.g., life satisfaction, internalizing problems, externalizing problems). This process yielded 21 students out of 499 who were identified as extreme univariate outliers on one or more variables. Nine of these students were identified as being extreme outliers due to their score on the Externalizing Problems composite as rated by their teacher respondent on the BASC-2 TRS-A. In fact, these were the participants with the nine highest raw scores

on this variable. The decision was made to retain these nine participants in the dataset because they represent a subset of students with relatively high externalizing symptoms and such students are of particular interest to the current investigation.

Three participants were identified as univariate outliers due to their very low scores on the academic self-perceptions scale of the SAAS-R, two participants were identified as univariate outliers due to their high scores on the internalizing composite of the BASC-2 SRP A, and two participants (the one with the highest score and the one with the lowest score) were identified as extreme outliers on the FCAT reading test. All seven of these participants were retained in the sample because the normality of the distributions of these variables was within acceptable limits even with these outliers included.

To ensure that these outlying data points did not have any undue influence on the results of the study, Cook's distance values were analyzed for each regression equation to determine the impact of outlying scores in the analyses. A Cook's distance value is an influence measure; it represents the extent to which a parameter estimate in an analysis would change if an observation were deleted. Cook's distance values greater than 1.0 are used to identify outliers with a strong influence on the results of the analysis (Tabachnick & Fidell, 2007). All Cook's distance values were  $<1.0$  (max= 0.181), indicating that outliers were not significantly influencing the outcomes associated with the dataset.

One participant was identified as an outlier on both the absences and GPA variables. This participant had a GPA of 0.00 (meaning that he or she failed all classes for the semester) and 45 absences. In addition, this participant was one of the nine students missing FCAT reading data. Because of the across-the-board evidence that this student

was an extreme outlier on academic outcomes, the participant's GPA and absences scores were removed from the dataset and the participant was excluded from subsequent analyses involving academic outcomes; however, this participant's data was retained for all other analyses. In addition to this student, four more participants were identified as univariate outliers due to their extreme values on the absences variable, which evidenced extreme non-normality when these participants' scores were included. These participants' absences scores were also removed from the dataset and the participants were excluded from subsequent analyses that involved absences as an outcome variable.

After removing extreme scores on the absences variables, Mahalanobis distance scores were calculated and examined for each participant in the dataset to determine the presence of multivariate outliers. Ten of the eleven outcome variables (i.e., gratitude, life satisfaction, internalizing symptoms, externalizing symptoms, parent social support, teacher social support, peer social support, GPA, absences, and academic self-perceptions) were included in the analysis. The FCAT variable was excluded from this analysis because its inclusion substantially reduced the sample size. Nine participants out of 499 were identified as multivariate outliers; that is, their scores exceeded the  $p < .001$  criterion ( $\chi^2 [10] = 29.59$ ) for Mahalanobis distance (Tabachnick & Fidell, 2007).

This test was followed up with a review of each of the nine participant's profile of scores in order to determine how these cases deviated from the rest of the sample. Four out of nine multivariate outliers presented with patterns of scores that would be expected. Specifically, they each had moderately to very high scores on some variables (i.e., internalizing and/or externalizing symptoms, absences) and moderately to very low scores on others (i.e., gratitude, life satisfaction, social support, GPA). Three of these

outliers presented with patterns of scores that were not consistent with what would be expected given the hypotheses of this investigation. Specifically, one participant reported high levels of psychological, social, and academic functioning coupled with a low level of gratitude. Conversely, another participant had very high levels of gratitude but moderately low levels of functioning. The third participant reported average levels of gratitude but very low levels of functioning across the three domains. The remaining two outliers presented with profiles that had discrepant scores within domains. For example, both participants perceived high levels of social support from one source (e.g., peers) but low levels of social support from another (e.g., parents). Similarly, both of these students reported high academic self-perceptions but had very low GPAs. In regards to gratitude, one of these participants reported an average level of gratitude and the other reported a high level of gratitude.

Despite being identified empirically as multivariate outliers, these nine participants were retained in the dataset ( $N= 499$ ) for several reasons. First, it was not suspected that these participants' unique profiles were a result of invalid responses. Either their BASC-2 validity index scores were within acceptable levels or their packets were carefully reviewed by a member of the research team and determined to be free of random responding. Furthermore, data were carefully screened and checked to ensure accurate data entry, greatly minimizing the possibility of a data entry error. Moreover, these nine observations identified as multivariate outliers are considered to be naturally occurring variances in adolescents' psychological, social, and academic profiles and therefore are of particular interest to this current investigation. However, in order to determine if retaining these nine observations impacted the results of the study, all

research questions were re-evaluated using a dataset in which all data associated with these nine participants were removed ( $N=490$ ). Results of these sensitivity analyses are reported along with the results from the primary dataset in relevant sections of this chapter.

### **Psychometric Properties of the GQ-6**

Previous research has shown that the sixth item of the GQ-6 has demonstrated poor fit with the one-factor structure of the measure in youth populations (Froh, Fan et al., 2011). This item (“Long amounts of time can go by before I feel grateful to someone or something”) was also reported by Froh and colleagues to be somewhat difficult to understand by youth, perhaps because of its abstract nature and the fact that it is a reversed scored item. Therefore, an exploratory factor analysis (principal components with orthogonal rotation) was conducted with students’ responses to the six items of the GQ-6. As expected, only one factor yielded an eigenvalue that exceeded 1.0 (2.62). In interpreting the factor pattern, an item was judged to load onto the factor if its factor loading was .40 or greater. Factor pattern loadings for each item are presented in Table 3. As can be seen in the table, the first five items loaded satisfactorily onto the GQ-6 factor, while the sixth item (.25) did not. This item was not included in subsequent analyses. Specifically, students’ composite gratitude scores on the GQ-6 were calculated by taking the mean of their scores on items one through five only. The five-item version of the GQ-6 demonstrated acceptable convergent validity ( $r= .65$ ) with the Gratitude Adjective Checklist (McCullough et al., 2002), another measure of gratitude.

Table 3

*Exploratory Factor Analysis Factor Pattern for GQ-6 Items (N=499)*

Item	Factor Loading
1. I have so much in life to be thankful for.	.79
2. If I had to list everything that I felt thankful for, it would be a very long list.	.83
3. When I look at the world, I don't see much to be thankful for.	.62
4. I am thankful to a wide variety of people.	.64
5. As I get older, I find myself more able to appreciate the people, events, and situations that have been part of my life history.	.67
6. Long amounts of time can go by before I feel thankful to something or someone.	.25

### **Measure Reliability**

Cronbach's alpha coefficients were calculated in order to examine the internal consistency, which is an index of scale reliability, for each questionnaire used in the current study. Internal consistencies provide information on measurement error.

Specifically, alpha coefficients are used to evaluate the intercorrelations between the items that make up a scale and indicate to what extent the items are measuring the same construct (O'Rourke, Hatcher, & Stepanksi, 2005). Alpha coefficients greater than or equal to .80 indicate high scale reliability for basic research purposes (Nunnally & Bernstein, 1994).

With the current sample of 499 adolescents, internal consistency of the GQ-6 (excluding the sixth item) was .84. The three measures of psychological functioning also demonstrated high internal consistency: SLSS ( $\alpha = .89$ ); BASC-2 SRP-A Internalizing scale ( $\alpha = .96$ ); and BASC-2 TRS-A Externalizing scale ( $\alpha = .95$ ). The parent ( $\alpha = .95$ ),

teacher ( $\alpha = .94$ ), and classmate ( $\alpha = .94$ ) subscales of the CASSS all had high internal consistencies. Finally, the academic self-perceptions scale of the SASS-R demonstrated acceptable reliability with a coefficient alpha of .89. In sum, in the current sample all scales demonstrated adequate reliability, with estimates ranging from .84 (revised GQ-6) to .96 (Internalizing Problems composite of the BASC-2 SRP-A). Therefore, it is likely that bias attributed to measurement error in subsequent analyses was limited.

### **Descriptive Statistics**

Descriptive statistics for the predictor and outcome variables of interest are reported in Table 4. To assess univariate normality, skewness and kurtosis of each of the 11 variables were calculated. Nine of the eleven variables approximated a normal distribution (skewness and kurtosis values between -1.0 and +1.0 when rounded to the nearest whole number) while two variables (Externalizing Problems and Absences) demonstrated values of skew and kurtosis that were outside of normal limits. After removing the five extreme univariate outliers on the Absences variable, skewness and kurtosis improved to 1.55 and 2.56, respectively. Although these values are still not within the ideal -1.0 to +1.0 range, Kline (2005) asserts that variables are appropriate for regression analyses as long as the absolute value of skew and kurtosis indexes do not exceed 3.0 and 10.0, respectively.

Nevertheless, to evaluate the potential influence of non-normal data, sensitivity analyses were employed with transformed versions of the non-normal dependent variables. Specifically, in line with procedures recommended by Tabachnick and Fidell (2007), the absences and externalizing variables were both transformed (after the removal of the data from the five aforementioned extreme outliers for absences), which resulted in

Table 4

*Means, Standard Deviations, Ranges, Skew, and Kurtosis of Raw Variables (N = 499)*

Variable	N	M	SD	Range	Skewness	Kurtosis
<u>Predictor</u>						
Gratitude	499	5.81	1.06	1.2-7.0	-1.18	1.40
<u>Psychological Outcomes</u>						
Life Satisfaction	499	4.24	1.05	1.0-6.0	-0.52	-0.19
Internalizing Problems	499	42.67	28.77	0.0-150.0	0.76	0.11
Externalizing Problems	499	5.68	9.23	0.0-50.0	2.14	4.34
<u>Social Outcomes</u>						
Parent Support	499	4.08	1.20	1.0-6.0	-0.19	-0.88
Teacher Support	499	4.24	1.04	1.0-6.0	-0.34	-0.34
Classmates Support	499	4.14	1.03	1.0-6.0	-0.15	-0.36
<u>Academic Outcomes</u>						
Weighted GPA	496	3.14	0.83	0.0-4.57	-0.77	0.43
FCAT Reading Score <sup>1</sup>	389	2.81	1.21	1.0-5.0	0.28	-0.79
Absences	498	4.40	5.15	0.0-45.0	2.70	12.22
Academic Self-Perceptions	499	5.50	0.99	1.0-7.0	-0.89	1.24

*Note.* Higher scores reflect increased levels of the construct indicated by the variable name.

<sup>1</sup>Notably only ninth and tenth grade students who took the FCAT reading test have a score for this variable.

distributions that were within normal limits (i.e., skew and kurtosis values near the range of -1 to +1). Specifically, absences (transformed by taking the logarithm of the raw variable) demonstrated a skew index of -.03 and a kurtosis index of -.90 and externalizing symptoms (transformed by taking the logarithm of the raw variable) demonstrated a skew index of .63 and a kurtosis index of -.91. These transformed versions of the variables were then employed in subsequent analyses; results were compared to analyses that employed the raw versions of the variables and are reported in later sections of this chapter.

### **Group Differences in Outcome Variables**

Preliminary analyses were conducted to determine if subgroups of participants significantly differed on any of the outcome variables of interest so that such effects could be statistically controlled for in subsequent analyses. Specifically, for each of five demographic variables (i.e., gender, SES, grade level, ethnicity, and school) three one factor, between subjects MANOVAs (one for each domain, e.g., psychological functioning, which included life satisfaction, internalizing problems, and externalizing problems) and a single one-way, between subjects ANOVA (for FCAT scores, which was analyzed separately because of its substantially smaller sample size) were conducted to detect group differences in outcome variables. In the event of a significant omnibus test ( $\alpha = .05$ ) the F-statistics and corresponding *p*-values for each univariate test were analyzed to determine which outcome in the set of dependent variables evidenced significant group differences (again, with  $\alpha = .05$ ). When applicable, follow-up Tukey tests were analyzed to examine the pairwise comparisons between different levels of demographic group variables.

**Gender.** The MANOVA for the set of psychological functioning variables was statistically significant ( $\Lambda = .92, p < .0001$ ). The univariate ANOVA for life satisfaction was not significant for group differences. The univariate ANOVA for internalizing symptoms was statistically significant,  $F(1, 497) = 21.90, p < .001$ . Specifically, girls ( $M = 47.56, SD = 30.51$ ) had higher levels of internalizing symptoms than boys ( $M = 35.54, SD = 24.40$ ). The univariate ANOVA for externalizing symptoms was also statistically significant,  $F(1, 497) = 18.17, p < .001$ . For this variable, boys ( $M = 7.77, SD = 10.55$ ) scored higher than girls ( $M = 4.25, SD = 7.91$ ).

The MANOVA for the set of social functioning variables was statistically significant ( $\Lambda = .98, p = .015$ ). The ANOVAs for parental social support and teacher social support were both non-significant. However, the ANOVA for classmate social support indicated that girls ( $M = 4.24, SD = 1.02$ ) perceived higher levels of social support from their peers than did boys ( $M = 3.98, SD = 1.04$ ),  $F(1, 497) = 8.27, p = .04$ .

The MANOVA for the set of three academic variables (i.e., GPA, absences, and academic self-perceptions) was also statistically significant ( $\Lambda = .96, p < .001$ ). Univariate ANOVAs revealed no significant differences between boys and girls on absences or academic self-perceptions. However, as a group, girls ( $M = 3.23, SD = 0.80$ ) had higher GPAs than boys ( $M = 3.06, SD = 0.78$ ),  $F(1, 489) = 5.53, p = .02$ . Finally, the ANOVA for FCAT scores was not significant, indicating that boys and girls scored similarly on this variable.

**Ethnicity.** The MANOVA for the set of three psychological functioning variables was non-significant, indicating that students from all races and ethnic backgrounds reported similar levels of life satisfaction and internalizing problems on

self-report measures and that teachers reported similar levels of externalizing behaviors across different ethnic groups.

Similarly, the MANOVA for the set of social functioning variables was also non-significant, indicating that students from all races and ethnic backgrounds perceived similar levels of social support from the parents, teachers, and peers.

The MANOVA for the set of three academic variables was statistically significant ( $\Lambda = .91, p < .001$ ). The univariate ANOVAs for absences and academic self-perceptions were both non-significant. However, the univariate ANOVA for GPA revealed significant group differences,  $F(5, 485) = 3.88, p = .002$ . Specifically, African American students ( $M = 2.89, SD = .70$ ) had lower GPAs than both Asian ( $M = 3.66, SD = 0.61$ ) and Caucasian ( $M = 3.28, SD = 0.82$ ) students. Finally, the one-way ANOVA for FCAT scores was also statistically significant,  $F(5, 383) = 7.78, p < .001$ . Follow up Tukey tests revealed that Caucasian students ( $M = 3.09, SD = 1.19$ ) had higher scores than both African American ( $M = 2.13, SD = 1.02$ ) and Hispanic ( $M = 2.61, SD = 1.22$ ) students.

**SES.** The MANOVA for the set of three psychological functioning variables was significant for group differences ( $\Lambda = .97, p < .001$ ). The univariate ANOVA for life satisfaction was statistically significant,  $F(1, 495) = 13.48, p < .001$ . Specifically, students who did not report qualifying for free or reduced price lunch (i.e., higher SES) reported greater levels of life satisfaction ( $M = 4.40, SD = 1.03$ ) than students of lower SES who qualified for free or reduced price lunch ( $M = 4.06, SD = 1.04$ ). Neither the ANOVA for internalizing nor externalizing symptoms was statistically significant, indicating that students from low and high SES backgrounds exhibited similar levels of psychopathology in the current investigation.

The MANOVA for the set of three social functioning variables was also significant for group differences ( $\Lambda=.97, p<.001$ ). The univariate ANOVA for parent support was statistically significant,  $F(1, 495)=9.01, p=.003$ . Specifically, students of higher SES ( $M=4.24, SD=1.19$ ) reported higher levels of perceived social support from their parents than did students of lower SES ( $M=3.92, SD=1.20$ ). Neither the ANOVA for teacher support nor classmate support symptoms was statistically significant, indicating that students from low and high SES perceived similar levels of social support from their teachers and peers in the current investigation.

The MANOVA for the set of three academic functioning variables was significant for group differences as well ( $\Lambda=.94, p<.001$ ). The univariate ANOVA for academic self-perceptions was not statistically significant. However, the ANOVAs for both GPA,  $F(1, 487)=31.69, p<.001$ , and Absences,  $F(1, 487)=7.82, p=.005$ , were significant for group differences. Specifically, students of higher SES ( $M=3.35, SD=0.72$ ) had better grades than students of lower SES ( $M=2.96, SD=0.82$ ), and students of lower SES ( $M=4.65, SD=4.50$ ) had more absences than students from higher SES backgrounds ( $M=3.58, SD=3.92$ ). Similarly, the one-way ANOVA for FCAT scores was also statistically significant,  $F(1, 385)=19.16, p<.001$  with higher SES students ( $M=3.05, SD=1.19$ ) earning higher scores than lower SES students ( $M=2.52, SD=1.18$ ).

**Grade level.** The MANOVA for the set of psychological variables was non-significant, indicating that students across various grade levels demonstrated similar levels of life satisfaction, internalizing problems, and externalizing problems. Likewise, the MANOVA for the set of social functioning variables was also non-significant,

indicating that students across the three grade levels perceived similar levels of social support from their parents, teachers, and peers.

The MANOVA for the set of academic variables, on the other hand, was statistically significant ( $\Lambda=.97, p=.04$ ). The univariate ANOVAs for both GPA and academic self-perceptions were non-significant. However, the univariate ANOVA for absences showed that 9<sup>th</sup> grade students ( $M=3.39, SD=3.48$ ) had fewer absences than both 10<sup>th</sup> grade students ( $M=4.53, SD=4.50$ ) and 11<sup>th</sup> grade students ( $M=4.87, SD=4.98$ ). The one-way ANOVA for FCAT reading scores was not significant.

**School.** All three MANOVA tests and the one-way ANOVA for FCAT scores were non-significant, indicating that students from both schools demonstrated similar mean levels of functioning in all domains of outcome variables.

In sum, gender groups differed on two aspects of psychological functioning (internalizing and externalizing symptoms), one social variable (classmate support), and one academic outcome (GPA). Ethnic groups differed on two aspects of academic functioning (GPA and FCAT scores). SES groups differed on one psychological variable (life satisfaction), one social variable (parent support), and three aspects of academic functioning (GPA, FCAT scores, and absences). Students in different grade levels differed only on one academic outcome (absences) and school groups did not differ on any outcome areas. Table 5 summarizes these results and shows which demographic variables were entered as covariate predictors in subsequent regression analyses for each outcome variable.

Table 5

*Significant Demographic Group Differences in Outcomes*

	Psychological Outcomes			Social Outcomes			Academic Outcomes			
	LS	INT	EXT	PS	TS	CS	GPA	ABS	ASP	FCAT
Gender	No	<b>Yes</b>	<b>Yes</b>	No	No	<b>Yes</b>	<b>Yes</b>	No	No	No
Ethnicity	No	No	No	No	No	No	<b>Yes</b>	No	No	<b>Yes</b>
SES	<b>Yes</b>	No	No	<b>Yes</b>	No	No	<b>Yes</b>	<b>Yes</b>	No	<b>Yes</b>
Grade	No	No	No	No	No	No	No	<b>Yes</b>	No	No
School	No	No	No	No	No	No	No	No	No	No

*Note.* SES= Socioeconomic status (as measured by free/reduced price lunch status). LS=Life Satisfaction. INT=Internalizing Symptoms. EXT=Externalizing Symptoms. PS=Parent Support. TS=Teacher Support. CS=Classmate Support. ABS=Absences. ASP=Academic Self-Perceptions. FCAT = Florida Comprehensive Achievement Test-Reading.

### Research Questions 1, 2, and 3

#### Correlational Analyses

Research questions one, two, and three pertain to the extent to which gratitude relates to aspects of psychological, social, and academic functioning, respectively, in middle adolescence. The first step in answering these questions involved examining the bivariate associations (via Pearson product-moment correlation coefficients) between gratitude and the eleven outcome variables of interest. Correlations among all continuous variables included in analyses are presented in Table 6. Statistical significance was determined using an alpha level of .01. As expected, gratitude was positively related to life satisfaction ( $r=.63, p<.0001$ ) and inversely correlated with internalizing symptoms ( $r= -.43, p<.001$ ). The other indicator of psychological functioning, teacher-rated externalizing problems, was not significantly related to student gratitude. In regards to

Table 6

*Correlations between Predictor and Outcome Variables (N=499)*

Scale	1	2	3	4	5	6	7	8	9	10	11
1. Gratitude	-										
2. Life Satisfaction	.64**	-									
3. Internalizing Problems	-.43**	-.66**	-								
4. Externalizing Problems	-.09	-.06	.05	-							
5. Social Support: Parents	.50**	.63**	-.56**	-.02	-						
6. Social Support: Teachers	.28**	.28**	-.31**	-.10	.38**	-					
7. Social Support: Classmates	.35**	.33**	-.34**	-.04	.43**	.48**	-				
8. GPA	.12*	.18**	-.21**	-.32**	.15*	.19**	.03	-			
9. Absences	-.06	-.11	.18**	.11	-.13*	-.12*	-.03	-.44**	-		
10. FCAT Reading <sup>1</sup>	.00	-.01	-.07	-.25**	-.10	.04	-.03	.54**	-.15*	-	
11. Academic Self-Perceptions	.30**	.28**	-.33**	-.01	.27**	.43**	-.33**	.36**	-.12*	.23**	-

<sup>1</sup> The sample size for correlations in this row is  $n = 389$  due to the fact that not all students took the FCAT reading exam.

\* $p < .01$ , \*\* $p < .001$

social functioning, gratitude was positively associated with higher levels of perceived social support from parents ( $r = .50, p < .001$ ), teachers ( $r = .28, p < .001$ ), and classmates ( $r = .35, p < .001$ ). Gratitude was also positively correlated with two of the four academic functioning variables: GPA ( $r = .12, p < .01$ ) and academic self-perceptions ( $r = .30, p < .001$ ). However, it was not associated with students' attendance or standardized reading scores.

### **Regression Analyses**

In order to determine whether significant associations between gratitude and outcome variables remained after controlling for potentially confounding variables (i.e., effects of demographic features on outcomes), a multiple regression equation was run for each outcome variable that demonstrated a significant bivariate relationship with gratitude (see Table 6).

Each regression analysis controlled for the effect of demographic group differences in the specific outcome by entering as covariates the demographic variables that evidenced associations with that outcome during preliminary analyses (as summarized in Table 5). Specifically, multiple regression equations were conducted for life satisfaction, internalizing symptoms, parent support, teacher support, classmate support, GPA, and academic self-perceptions. For each equation, the outcome variable was regressed on gratitude and all covariates simultaneously and the alpha level was set to .01.

Before interpreting the results, the data were checked for violations of assumptions. Specifically, scatterplots were inspected to ensure that relationships between predictor and outcomes variables were linear. In addition, variance of residuals

was evaluated for each regression analysis to determine both the normality of the distribution of residuals and the extent to which the spread of the residuals was equally distributed across prediction scores. Results of these analyses suggested that residual distributions were both fairly normal and homoscedastic. Finally, dummy-coded variables were created for each of the nominal level predictors prior to entering them into regression analyses. The results of each multiple regression are presented in Tables 7-13.

**Psychological outcomes.** Together, gratitude and socioeconomic status accounted for 42.6% of the variance in life satisfaction ( $F[2, 494]=182.98, p<.0001$ , adjusted  $R^2= .423$ ). A review of beta weights yielded from the equation (see Table 7) indicated that both gratitude ( $\beta=.63$ ) and SES ( $\beta=.14$ ) remained independent predictors ( $p<.0001$ ) of life satisfaction, with gratitude uniquely accounting for roughly 40% of the variance in life satisfaction. Thus, gratitude not only remained a significant predictor of life satisfaction while controlling for the effect of SES, but was a much stronger predictor of life satisfaction than SES.

Table 7

*Summary of Simultaneous Regression Analysis for Life Satisfaction*

Predictor	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	$si^2$
Gratitude	.62	.03	.63	18.52*	.399*
SES	.29	.07	.14	4.10*	.020*

\* $p<.0001$

In the multiple regression equation for internalizing problems, the linear combination of gratitude and gender accounted for 23.3% of the variance in students' internalizing symptoms score ( $F[2, 496]=75.31, p<.0001$ , adjusted  $R^2= .230$ ). Again, gratitude emerged as a significant and unique predictor of internalizing problems ( $\beta=$  -

.44,  $p < .0001$ ), accounting for 19.1% of unique variance (see Table 8). Gratitude's effect on internalizing problems was independent of the effect of gender ( $\beta = .21$ ,  $p < .0001$ ), which uniquely accounted for 4.5% of the variance in internalizing psychopathology.

Table 8

*Summary of Simultaneous Regression Analysis for Internalizing Symptoms*

Predictor	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	$sr^2$
Gratitude	-11.83	1.07	-.44	-11.11*	.191*
Gender	12.45	2.30	.21	5.41*	.045*

\* $p < .0001$

**Social outcomes.** Together, gratitude and socioeconomic status accounted for 26.4% of the variance in students' perceived social support from their parents ( $F[2, 494] = 88.59$ ,  $p < .0001$ , adjusted  $R^2 = .261$ ). A review of beta weights yielded from the equation indicated that both gratitude ( $\beta = .50$ ) and SES ( $\beta = .12$ ) remained independent predictors ( $p < .0001$ ) of parental social support, with gratitude uniquely accounting for

Table 9

*Summary of Simultaneous Regression Analysis for Parent Support*

Predictor	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	$sr^2$
Gratitude	.56	.04	.50	12.85**	.246**
SES	.28	.09	.12	3.00*	.013*

\* $p < .01$ , \*\* $p < .0001$

24.6% of the variance in parent support. Thus, gratitude remained a significant predictor of parent social support after controlling for the effect of SES (see Table 9).

Preliminary analyses did not reveal any demographic group differences in students' perceived social support from teachers. Therefore a simple linear regression was conducted regressing teacher support on gratitude (see Table 10). Gratitude

Table 10

*Summary of Linear Regression Analysis for Teacher Support*

Predictor	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	$R^2$
Gratitude	.28	.04	.28	6.55*	.079*

\* $p < .0001$ 

significantly predicted 7.9% of the variance in teacher social support ( $F[1, 497]=42.85$ ,  $p < .0001$ , adjusted  $R^2 = .0775$ ).

In regards to perceived social support from classmates, gratitude and gender together accounted for 13.4% of the variance ( $F[2, 496]=38.46$ ,  $p < .0001$ , adjusted  $R^2 = .131$ ). Both gratitude ( $\beta = .34$ ,  $p < .0001$ ) and gender ( $\beta = .12$ ,  $p < .01$ ) remained independent predictors of classmate social support, uniquely accounting for 11.8% and 1.5% of the variance, respectively (see Table 11).

Table 11

*Summary of Simultaneous Regression Analysis for Classmate Support*

Predictor	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	$sr^2$
Gratitude	.33	.04	.34	8.22**	.118**
Gender	.26	.09	.12	2.92*	.015*

\* $p < .01$ , \*\* $p < .0001$ 

**Academic outcomes.** The linear combination of gratitude, gender, SES, and ethnicity accounted for 10.2% of the variance in students' GPA scores ( $F[8, 484]=6.88$ ,  $p < .0001$ , adjusted  $R^2 = .087$ ). A review of beta weights yielded from the equation indicated that gratitude ( $\beta = .12$ ,  $p = .006$ ) and socioeconomic status ( $\beta = .20$ ,  $p < .0001$ ) emerged as significant independent predictors of GPA. Neither gender nor ethnicity independently contributed to differences in GPA after controlling for the shared

Table 12

*Summary of Simultaneous Regression Analysis for GPA*

Predictor	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	$sr^2$
Gratitude	.09	.03	.12	2.76*	.014*
SES	.33	.08	.20	4.18**	.032**
Gender	.15	.07	.09	2.08	.008
African American	-.28	.14	-.09	-2.00	.007
Asian	.49	.22	.10	2.19	.009
Hispanic	-.11	.09	-.06	-1.24	.003
Multiracial	-.16	.13	-.06	-1.24	.003
Other Ethnicity	-.13	.27	-.02	-0.49	.000

\* $p < .01$ , \*\* $p < .0001$

contribution of all of the predictors. Furthermore, after controlling for covariates, gratitude uniquely accounted for 1.4% of the variance in students' GPAs (see Table 12).

Preliminary analyses did not reveal any demographic group differences in students' academic self-perceptions. Therefore a simple linear regression was conducted regressing academic self-perceptions on gratitude (see Table 13). Gratitude significantly predicted 9.1% of the variance in students' academic self-perceptions ( $F[1, 497]=49.80$ ,  $p < .0001$ , adjusted  $R^2 = .089$ ).

Table 13

*Summary of Linear Regression Analysis for Academic Self-Perceptions*

Predictor	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	$R^2$
Gratitude	.28	.04	.30	7.06*	.091*

\* $p < .0001$

## **Sensitivity Analyses**

The correlation matrix and aforementioned simultaneous multiple regression equations were recalculated using a dataset in which the nine previously identified multivariate outliers were removed. None of the bivariate associations between gratitude and the eleven outcome variables of interest changed with regard to the statistical significance of a given association. Furthermore, gratitude continued to be a significant independent predictor of all outcome variables when controlling for covariates in simultaneous multiple regression equations. Thus, the presence of multivariate outliers in the dataset did not impact the results for research questions one, two, or three.

The correlation matrix was conducted a third time using a dataset in which non-normal variables (i.e., absences and externalizing problems) were transformed. Using the transformed dataset did not change the statistical significance of the bivariate relationships between gratitude and externalizing symptoms or absences.

In sum, all of the significant relationships identified in the correlation matrix between gratitude and outcome variables remained significant after controlling for the related covariates. Overall conclusions for research question one (the extent to which gratitude relates to students' psychological functioning) are that gratitude demonstrated moderate to large associations with life satisfaction and internalizing symptoms in the expected directions, but was unrelated to externalizing psychopathology.

In regards to research question two (the extent to which gratitude relates to students' social functioning), gratitude demonstrated small to medium positive correlations with the amount of social support students perceived from parents, teachers, and peers. Finally, conclusions for research question three (the extent to which gratitude

relates to students' academic functioning), were that gratitude demonstrated a small positive association with students' GPA and a moderately strong positive relationship with students' academic self-perceptions. On the other hand, gratitude was unrelated to students' standardized reading scores or school attendance.

#### **Research Question 4**

The purpose of the fourth research question was to investigate whether or not gender moderates the relationship between gratitude and outcome variables related to students' psychological, social, and academic functioning. In order to answer this question, a series of simultaneous multiple regression equations were conducted in which each outcome variable was regressed on gratitude, any relevant covariates, gender, and the interaction between gratitude and gender (gender\*gratitude). The alpha level used to identify a statistically significant interaction term was set at .01.

#### **Psychological Outcomes**

Gender did not moderate the relationship between gratitude and life satisfaction ( $\beta = .16, p = .42$ ), meaning that gratitude equally predicted life satisfaction ( $\beta = .60, p < .0001$ ) for both boys and girls.

On the other hand, gender emerged as a significant moderator in the relationship between gratitude and internalizing problems. That is, the gender\*gratitude interaction term was statistically significant ( $\beta = -.60, p < .01$ ). To understand the nature of the interaction, internalizing symptoms were regressed on gratitude separately for boys and girls. For boys ( $n = 203$ ), gratitude was a significant predictor of internalizing problems ( $\beta = -.33, p < .0001$ ) and accounted for 10.4% of the variance in internalizing psychopathology. For girls ( $n = 296$ ), gratitude was a stronger predictor of internalizing

symptoms ( $\beta = -.50, p < .0001$ ) and accounted for 25% of the variance in internalizing psychopathology. Therefore, gratitude emerged as a significant predictor of internalizing symptoms for both boys and girls, but appears more strongly related to internalizing problems for girls.

Figure 2 illustrates the nature of the effect of gender on the relationship between gratitude and internalizing symptoms. Predicted values of internalizing symptoms were plotted against very low (raw score of 1, the minimum possible), medium (raw score of 4), and very high (raw score of 7, the maximum possible) levels of gratitude for boys and girls according to unstandardized regression equations obtained from analyses described above. As can be seen in the graph, as the level of gratitude increases, internalizing problems decrease for both boys and girls. However, the slope of the regression equation

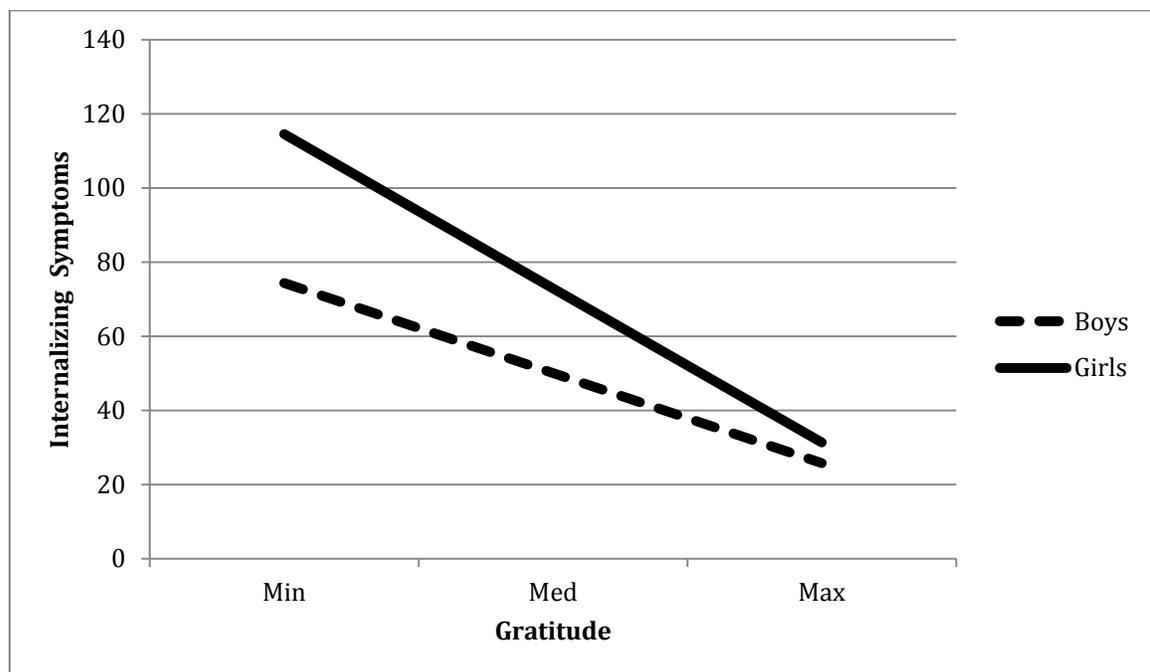


Figure 2. Internalizing Symptoms Regressed on Gratitude by Gender. Predicted values of internalizing symptoms were plotted against minimum (raw score of 1), medium (raw score of 4), and maximum (raw score of 7) levels of gratitude.

for girls is much steeper than for boys, indicating that in conditions of low gratitude, girls are particularly likely to evidence more symptoms of internalizing problems.

Although externalizing symptoms was not previously identified as being significantly correlated with gratitude using the predetermined alpha level of .01, its correlation coefficient ( $r = -.09$ ) was within traditional levels of significance ( $p = .048$ ). In addition, externalizing symptoms were found to differ significantly by gender. Therefore, it appeared probable that gender might be a moderator in the relationship between gratitude and externalizing symptoms, and a simultaneous multiple regression was conducted for this variable of psychological functioning as well. However, the gender\*gratitude interaction term was not statistically significant ( $\beta = -.45$ ,  $p = .08$ ). This means there is not enough evidence to conclude that the (null) relationship between gratitude and externalizing symptoms differs for boys and girls.

### **Social Outcomes**

There was not statistical evidence to conclude that gender served as a moderator in the relationships between gratitude and perceived social support from parents ( $\beta = .12$ ,  $p = .59$ ), teachers ( $\beta = -.26$ ,  $p = .30$ ), or classmates ( $\beta = -.25$ ,  $p = .32$ ).

### **Academic Outcomes**

Gender did not significantly moderate the relationship between gratitude and GPA ( $\beta = .45$ ,  $p = .08$ ), or academic self-perceptions ( $\beta = .46$ ,  $p = .06$ ), suggesting that these positive associations exist similarly for boys and girls. Gender also did not significantly moderate the (null) relationships between gratitude and absences ( $\beta = -.49$ ,  $p = .07$ ) or reading achievement ( $\beta = -.30$ ,  $p = .30$ ), suggesting that the lack of a relationship between gratitude and these indicators of academic functioning applies to boys and girls similarly.

## **Sensitivity Analyses**

To determine if the presence of multivariate outliers or non-normal data had an impact on the results of these analyses, each of the simultaneous multiple regressions was conducted a second time using a dataset in which multivariate outliers were removed (N=490). None of the results changed with regard to which interaction terms were deemed statistically significant or not. When the multiple regression equations predicting externalizing problems and absences were reanalyzed using the transformed versions of these variables, the results did not change with regard to statistical significance level of the interaction term.

In sum, gender only served as a moderating variable in the relationship between gratitude and internalizing problems, with gratitude having a stronger inverse relationship with internalizing symptoms for girls than boys. Gender was not a moderating variable in any other relationships between gratitude and outcome variables.

## **Research Question 5**

As shown in Figure 1 (see Chapter 3) it was hypothesized that students' perceived social support from their parents, teachers, and classmates would, at least partially, mediate the identified relationships between gratitude and indicators of psychological functioning. In other words, the hypothesized model depicted in Figure 1 predicted that gratitude would indirectly predict life satisfaction, internalizing symptoms, and externalizing symptoms via social support. Path analyses with manifest variables were conducted in order to test this specified mediation model and determine direct and indirect effects of gratitude for both life satisfaction and internalizing symptoms (externalizing symptoms were not analyzed because gratitude failed to demonstrate a

bivariate association with externalizing problems for either gender). Relevant covariates were also included in the models as predictors and categorical variables were dummy coded.

### **Life Satisfaction**

Gratitude and SES were entered into the model as exogenous variables while parent support, teacher support, classmate support, and life satisfaction were entered as endogenous variables. SES was dummy coded such that students from lower SES backgrounds (i.e., qualified for free or reduced-price lunch) were the reference group (given a value of 0) and students from higher SES backgrounds were assigned a value of 1. The residual terms for the three social support variables were allowed to covary in order to reflect that these variables were not expected to be independent from one another. This analysis used the maximum likelihood method of parameter estimation and was performed on the variance-covariance matrix. The model was overidentified, allowing enough degrees of freedom to analyze goodness of fit indices, which are presented in Table 14. The chi-square statistic provides a test of the null hypothesis that the population covariance matrix is no different from the covariance matrix implied by the model (i.e., the specified model fits the data). A small chi-square statistic and large, or insignificant, *p*-value suggest good overall fit (Hatcher, 1994). The chi-square test was insignificant,  $\chi^2(2, N=497) = 2.15, p=.34$ . In addition, the comparative fit index (CFI; Bentler, 1988), the standardized root mean square residual (SRMSR; Hu & Bentler, 1999), and the root mean square error of approximation (RMSEA; Hu & Bentler, 1999) values were all within acceptable limits and also suggested a good fit.

Table 14

*Goodness of Fit Indices for Hypothesized Path Models*

Outcome	$\chi^2$	df	<i>p</i>	CFI	SRMSR	RMSEA
Life Satisfaction	2.15	2	.34	.999	.017	.012
Internalizing Problems <sup>1</sup>	2.15	2	.34	.999	.013	.012
Internalizing Problems <sup>2</sup>	1.79	2	.41	1.00	.003	0.00
GPA	6.01	7	.54	1.00	.021	0.00
Acad. Self-Perceptions <sup>3</sup>	N/A	N/A	N/A	N/A	N/A	N/A

<sup>1</sup>This model did not include the moderating effect of gender.

<sup>2</sup>This model included the moderating effect of gender by including the genderXgratitude interaction

<sup>3</sup>Not enough degrees of freedom available to calculate fit indices for this variable.

Next, the size and significance of the path coefficients between predictor and outcome variables were analyzed (see Figure 3). An alpha level of .01 was used to determine statistical significance of path coefficients and significant effects are indicated with an (\*) in the figure. Overall, the model accounted for 55% of the variance in life satisfaction. All path coefficients were significant except for the direct effects of teacher support ( $\beta=.00$ ,  $p=.95$ ) and classmate support ( $\beta=.02$ ,  $p=.67$ ) on life satisfaction. The direct effect of gratitude on life satisfaction was significant ( $\beta=.43$ ,  $p<.0001$ ) as was the indirect effect of gratitude through the social support variables ( $\beta=.20$ ,  $p<.0001$ ). Given that social support from parents was the only source of social support that significantly predicted life satisfaction ( $\beta=.40$ ,  $p<.0001$ ), parent social support accounts for this indirect effect. The model thus suggests that perceived support from parents (but not teachers or peers) partially mediates the relationship between gratitude and life satisfaction. Finally, higher SES predicted higher levels of parent support ( $\beta=.14$ ,  $p<.001$ ) and life satisfaction ( $\beta=.09$ ,  $p=.002$ ), exhibiting both a direct ( $\beta=.05$ ,  $p<.001$ ) effect on life satisfaction.

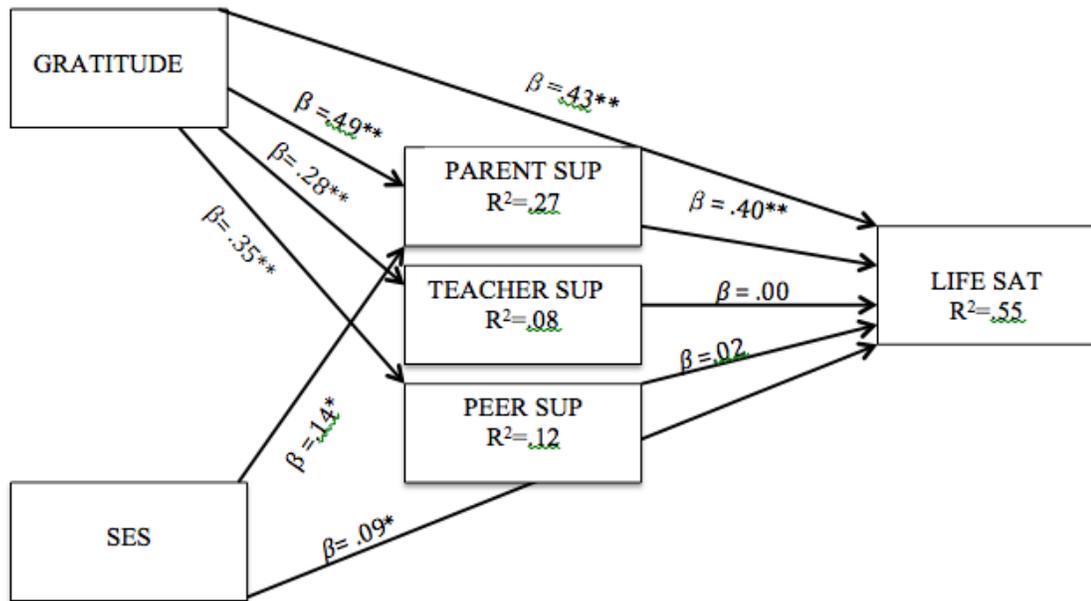


Figure 3. Path model representing direct and indirect effects of gratitude on life satisfaction with SES as a covariate

### Internalizing Symptoms

A similar model was evaluated for internalizing symptoms. Gratitude and gender were entered into the model as exogenous variables while parent support, teacher support, classmate support, and life satisfaction were entered as endogenous variables. Gender was dummy coded such that boys were the reference group (given a value of 0) and girls were assigned a value of 1. The residual terms for the three social support variables were allowed to covary in order to reflect that these variables were not expected to be independent from one another. This analysis used the maximum likelihood method of parameter estimation and was performed on the variance-covariance matrix. The model was overidentified, allowing enough degrees of freedom to analyze goodness of fit indices, which are presented in Table 14. The chi-square statistic was insignificant,  $\chi^2(2, N=499) = 2.15, p=.34$ . In addition, the CFI, SRMSR, and the RMSEA fit indices all suggested a good fit.

Figure 4 shows the standardized path coefficients between all of the predictor and outcome variables. The model accounted for 40% of the variance in students' internalizing symptoms. Gratitude exhibited significant direct ( $\beta = -.19, p < .0001$ ) and indirect ( $\beta = -.25, p < .0001$ ) effects on internalizing symptoms. Similar to life satisfaction, parent support was the only social support variable with a significant effect on internalizing problems ( $\beta = -.39, p < .0001$ ) and therefore the only source of social support that served as a partial mediator in the relationship between gratitude and internalizing symptoms. Gender also exhibited a significant direct effect on internalizing problems ( $\beta = .22, p < .0001$ ).

Because gender emerged as a moderator in the relationship between gratitude and internalizing symptoms (see results for research question four), the gender\*gratitude interaction term was added to the path model to determine if gender moderates the direct and/or indirect effects of gratitude when the mediators are also included in the equations.

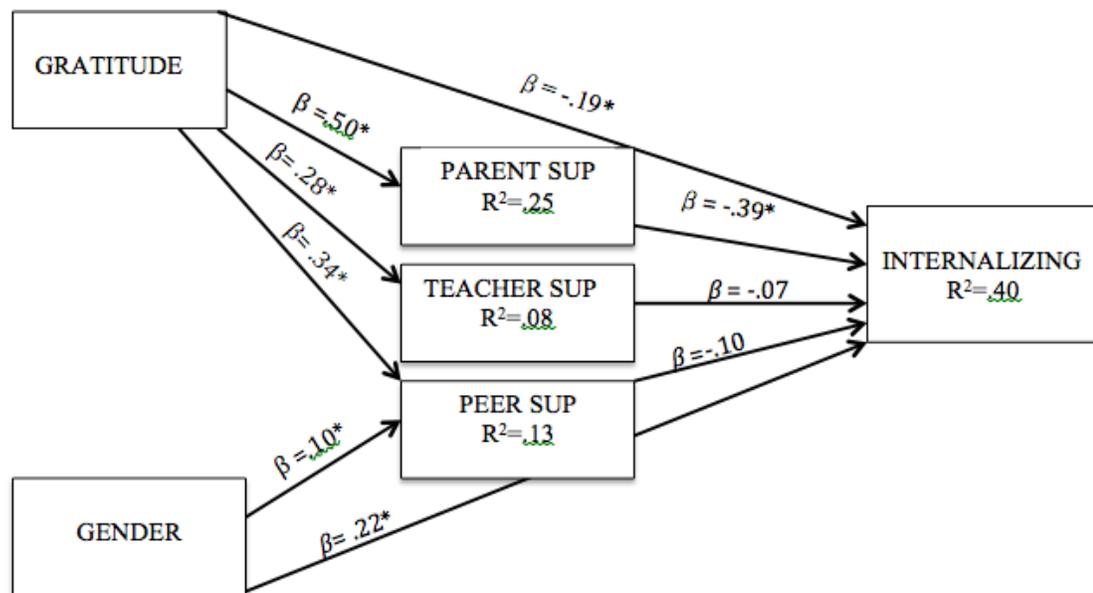


Figure 4. Path model representing direct and indirect effects of gratitude on internalizing symptoms with gender as a covariate

Figure 5 shows the new model as well as the new path coefficients. This revised model continued to demonstrate good fit (see Table 14). As can be seen in Figure 5, the gender\*gratitude interaction term had a significant direct effect on internalizing problems ( $\beta = -.64, p < .0001$ ) and the direct effect of gratitude was no longer significant ( $\beta = -.04, p = .53$ ). However, the indirect effect of gratitude on internalizing problems remained significant ( $\beta = -.26, p < .0001$ ) as did the paths from gratitude to the social support variables and from parent support to internalizing problems ( $\beta = -.39, p < .0001$ ). The paths between teacher support and internalizing problems and peer support and internalizing problems remained non-significant. Results also indicated there was not a significant indirect effect of the gender\*gratitude interaction term ( $\beta = .02, p = .57$ ). These results, like those of research question four, suggest that the direct effect of gratitude on internalizing symptoms depends upon gender; however, the indirect (i.e., mediated) pathway does not differ as a function of gender.

In order to determine how the direct effect of gratitude on internalizing symptoms differed by gender, path models were analyzed separately for boys and girls as recommended by Wegener and Fabrigar (2000). Gratitude was entered as the only exogenous variable and internalizing problems, parent support, teacher support, and classmate support were entered as endogenous variables. For boys (see Figure 6), gratitude did not have a significant direct effect on internalizing symptoms ( $\beta = -.11, p = .13$ ) but did demonstrate a significant indirect effect ( $\beta = -.22, p < .0001$ ). Parent support fully mediated the relationship between gratitude and internalizing symptoms ( $\beta = -.38, p < .0001$ ). For girls (see Figure 7), gratitude did have a significant direct effect on

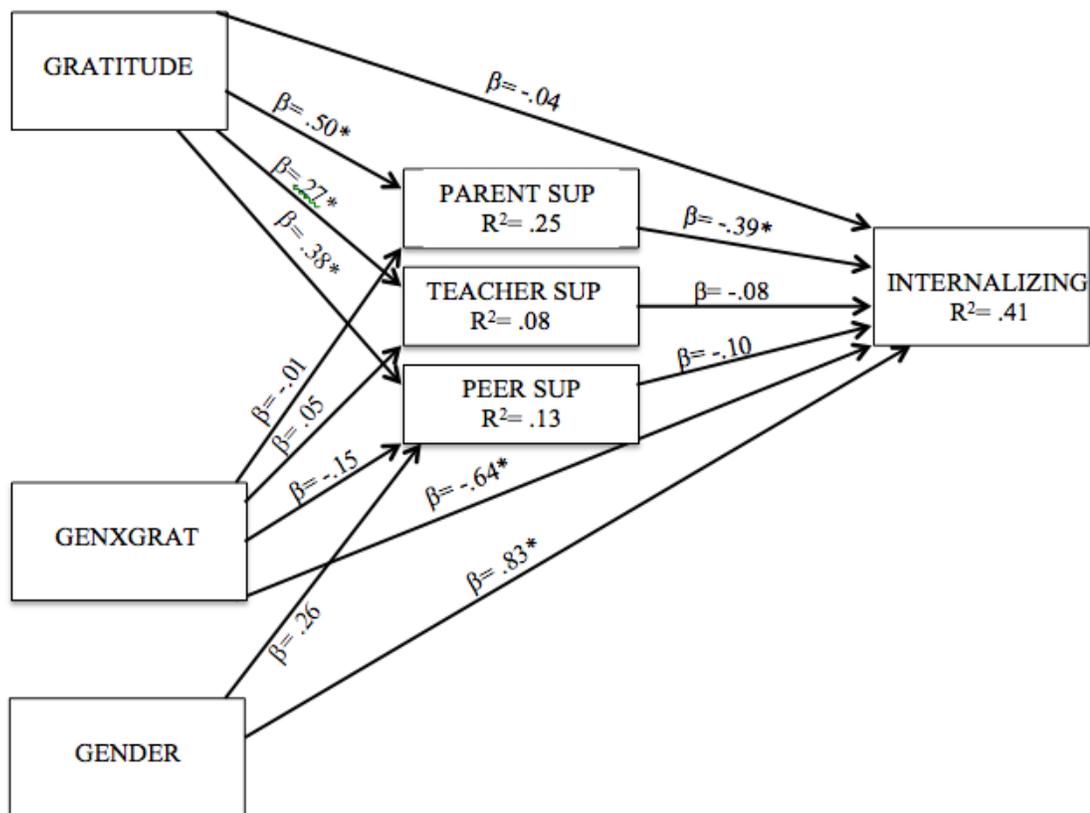


Figure 5. Path model representing direct and indirect effects of gratitude on internalizing symptoms with gender as a moderator

internalizing symptoms ( $\beta = -.23, p < .0001$ ) as well as a significant indirect effect ( $\beta = -.28, p < .0001$ ), indicating that parent support only partially mediated the relationship between gratitude and internalizing problems for girls ( $\beta = -.41, p < .0001$ ). These results are similar to the results reported for research question 4 in which the relationship between gratitude and internalizing problems was stronger for girls than for boys. The path between classmate support and internalizing symptoms was also statistically significant ( $\beta = -.14, p < .01$ ), suggesting that peer support also partially mediates the relationship between gratitude and internalizing problems for girls. However, because the gender\*gratitude interaction effect on classmate support failed to reach statistical significance in the

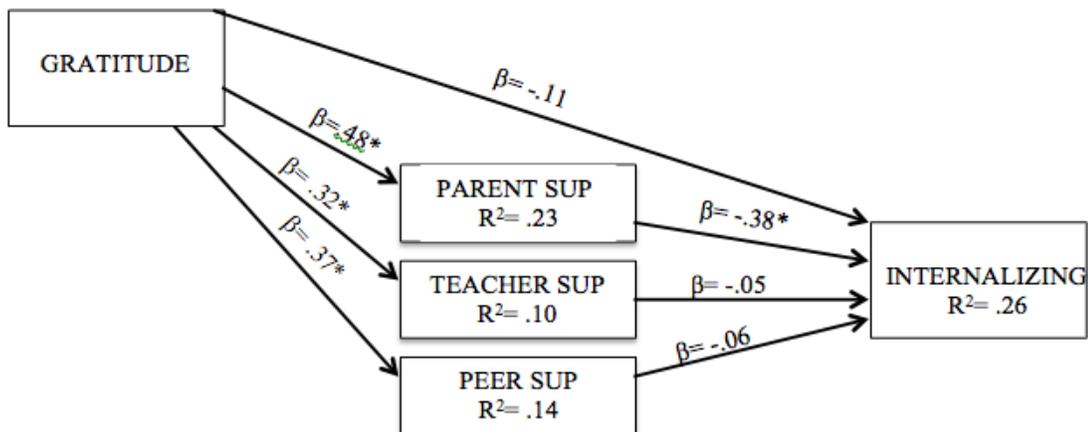


Figure 6. Path model demonstrating an indirect-only effect of gratitude on internalizing symptoms for boys ( $N=203$ ).

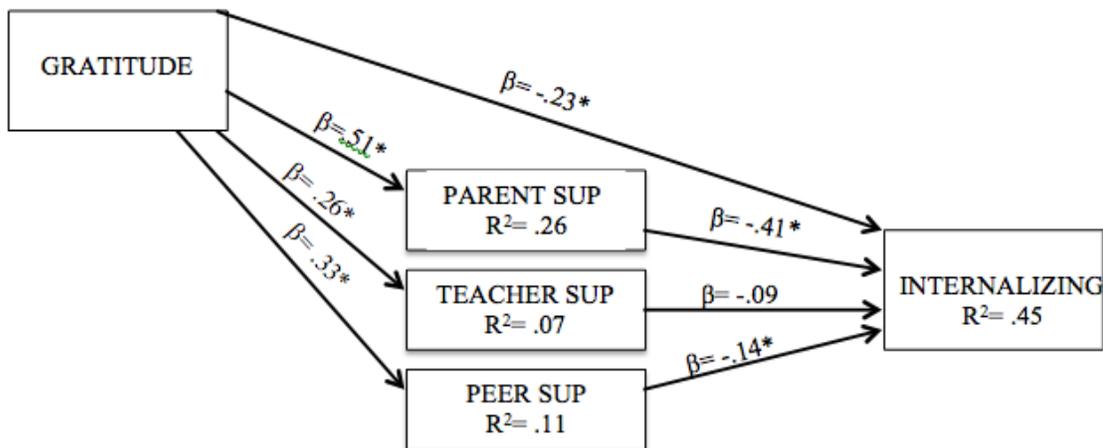


Figure 7. Path model demonstrating both direct and indirect effects of gratitude on internalizing symptoms for girls ( $N=296$ ).

overall model ( $\beta = -.01, p = .73$ ), it cannot be concluded that this mediated pathway is different for boys and girls.

### Sensitivity Analyses

To determine whether or not the presence of observations previously identified as multivariate outliers impacted these findings, the three path models previously described

were analyzed using a dataset in which multivariate outliers were removed ( $N= 490$ ). No significant changes were observed for the life satisfaction model, the internalizing model without the gender\*gratitude interaction term, or the internalizing model with the gender\*gratitude interaction term. All models retained acceptable goodness of fit indices and all path coefficients remained significant/non-significant with only negligible differences in absolute value that did not change conclusions or interpretations.

### **Research Question 6**

It was also hypothesized that students' perceived social support from their parents, teachers, and classmates would, at least partially, mediate the relationships between gratitude and academic functioning outcomes. Path analyses with manifest variables were conducted in order to test this hypothesis and determine direct and indirect effects of gratitude for both GPA and academic self-perceptions. Attendance and standardized reading scores were not analyzed because gratitude failed to demonstrate significant associations with these outcomes for either gender. Relevant covariates were also included in the models as predictors and all categorical variables were dummy coded.

#### **GPA**

Gratitude, SES, gender, and ethnicity were entered into the model as exogenous variables while parent support, teacher support, classmate support, and life satisfaction were entered as endogenous variables. SES was dummy coded such that students from lower SES backgrounds were the reference group (given a value of 0) and students from higher SES backgrounds were assigned a value of 1. Gender was dummy coded such that boys were the reference group (given a value of 0) and girls were assigned a value of 1.

Ethnicity was dummy coded such that students who self-identified Caucasian or Asian were given a value of 1 and students who self-identified as any other race or ethnicity (e.g., Hispanic, African American, multi-racial) were assigned a value of 0 and served as the reference group. This comparison of Asian and Caucasian students to a combined group of all other ethnic minority students was done to keep the model as simple as possible, and partly justified by the findings in the current study (i.e., MANOVA results) and larger literature that indicate that achievement gaps are usually between Asian and Caucasian students in relation to the other minority groups. In any event, models were also ran that included five dummy-coded race/ethnicity variables (one for each minority group, in which Caucasian students were the reference group) as predictor/exogenous variables. No findings changed from models that contained the aforementioned dichotomous ethnicity variable; specifically, all of the pathways maintained the same significance or non-significance as well as the same size of standardized regression coefficients. Notably, none of the ethnicity variables reached statistical significance at set alpha ( $p < .01$ ) though African American ( $\beta = -.11, p = .018$ ) and Asian ( $\beta = .11, p = .011$ ) variables were very close, paralleling results obtained in the MANOVA analysis reported next. In the simplified model, the dichotomous ethnic variable was also very close to achieving statistical significance ( $\beta = .11, p = .015$ ) in the expected direction (Caucasian and Asian students were dummy coded as 1, so a positive path coefficient reflects these students had higher grades). Given that conclusions were the same no matter the model used, only results from the simplified model (that included the dichotomized race/ethnicity variable) are provided next.

The residual terms for the three social support variables were allowed to covary in order to reflect that these variables were not expected to be independent from one another. This analysis used the maximum likelihood method of parameter estimation and was performed on the variance-covariance matrix. The model was overidentified, allowing enough degrees of freedom to analyze goodness of fit indices, which are presented in Table 14. The chi-square statistic was insignificant,  $\chi^2(7, N=493) = 6.01$ ,  $p=.54$ . Furthermore, the CFI, SRMSR, and the RMSEA fit indices all suggested a good fit.

Next, the size and significance of the path coefficients between predictor and outcome variables were analyzed (see Figure 8). An alpha level of .01 was used to determine statistical significance of path coefficients and significant effects are indicated with an (\*) in the figure. Overall, the model accounted for 13% of the variance in GPA. In this model, gratitude did not demonstrate a significant direct ( $\beta=.07$ ,  $p=.13$ ) effect on GPA. Although gratitude significantly predicted teacher support ( $\beta=.28$ ,  $p<.0001$ ) and teacher support in turn predicted GPA ( $\beta=.21$ ,  $p<.0001$ ), the path model did not find evidence for a significant indirect effect of gratitude on GPA ( $\beta=.05$ ,  $p=.08$ ), which means that social support from teachers did not serve as a statistically significant mediator between gratitude and GPA. However, the analysis indicated a significant total effect of gratitude on GPA ( $\beta=.12$ ,  $p<.01$ ), indicating that gratitude likely impacts GPA but perhaps not in a way that was tested by the current model (i.e., neither directly nor through social support from parents, teachers, or peers). Social support from teachers and

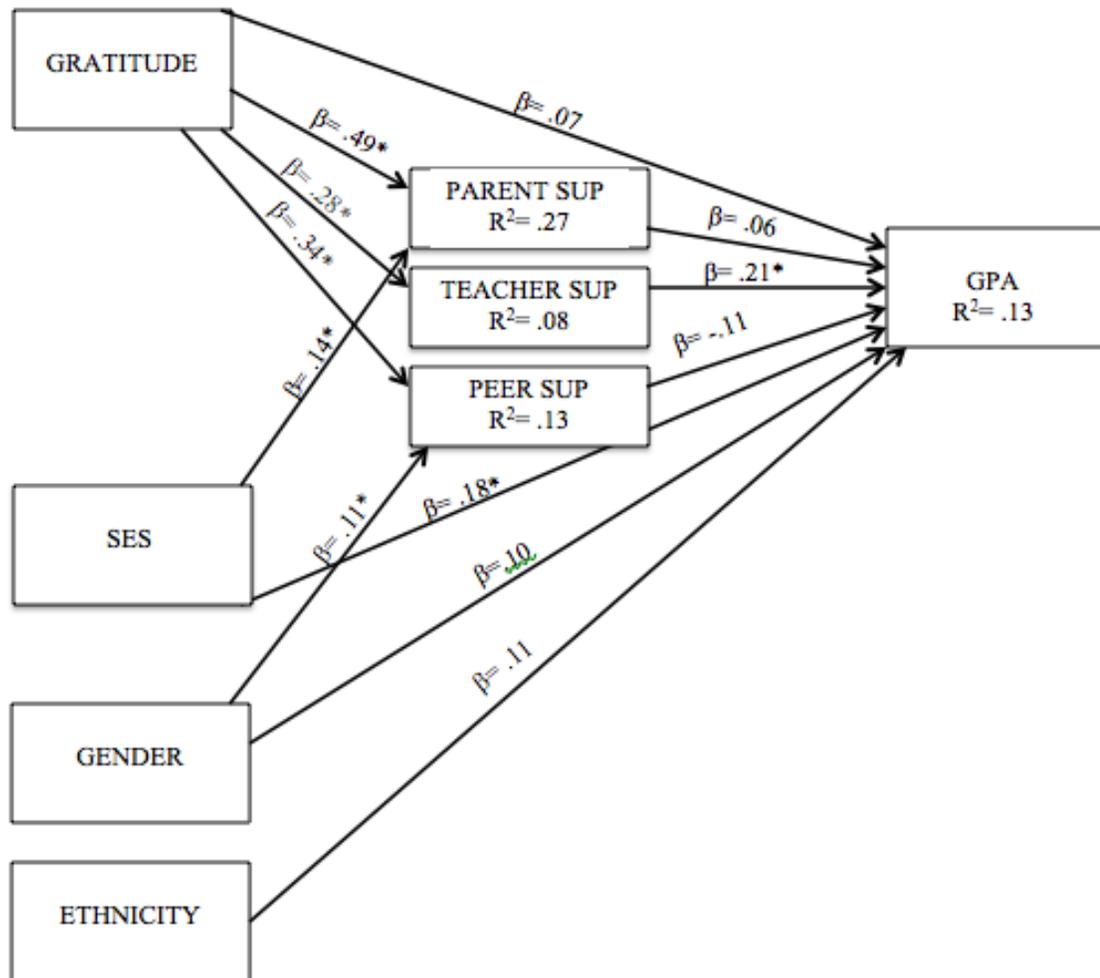


Figure 8. Path model examining direct and indirect effects of gratitude on GPA with gender, SES, and ethnicity as covariates.

socioeconomic status ( $\beta = .18, p < .001$ ) emerged as significant predictors of GPA when controlling for all of the other variables, with students who perceived more social support from their teachers and those from higher SES backgrounds earning higher GPAs. Ethnicity was not a significant predictor of GPA when controlling for the other variables in the model ( $\beta = .11, p = .015$ ).

### Academic Self-Perceptions

A path model was also constructed and analyzed for academic self-perceptions. Gratitude was the only exogenous variable entered into the model because preliminary

analyses did not identify any demographic variables that should be entered as covariates. Parent support, teacher support, and classmate support were all entered as endogenous variables and the residual terms for the three social support variables were allowed to covary in order to reflect that these variables were not expected to be independent from one another. This analysis used the maximum likelihood method of parameter estimation and was performed on the variance-covariance matrix. The model was just identified, meaning that path coefficients were estimated in a way that fit the data exactly and there were no available degrees of freedom to assess the overall fit of the model (Hatcher, 1994). As such, there are no values for the fit indices reported in Table 14. Path coefficients were still calculated and analyzed to determine direct and indirect effects of gratitude on academic self-perceptions.

Figure 9 shows the standardized path coefficients between all of the predictor and outcome variables. An alpha level of .01 was used to determine statistical significance of path coefficients and significant effects are indicated with an (\*) in the figure. The model

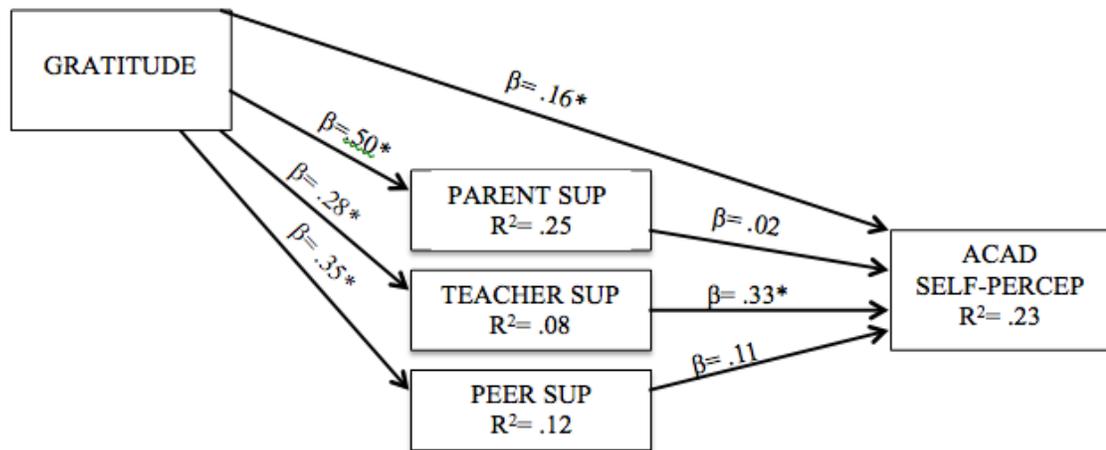


Figure 9. Path model representing direct and indirect effects of gratitude on academic self-perceptions.

accounted for 23% of the variance in students' academic self-perceptions. All path coefficients were significant except for the direct effects of parent ( $\beta=.02, p=.74$ ) and classmate ( $\beta=.11, p=.018$ ) support on academic self-perceptions. The direct effect of gratitude on academic self-perceptions was significant ( $\beta=.16, p<.001$ ) as was the indirect effect ( $\beta=.14, p<.0001$ ). Given that social support from teachers was the only source of social support that significantly predicted academic self-perceptions ( $\beta=.33, p<.0001$ ), teacher social support accounts for this indirect effect. In other words, the model suggests that perceived support from teachers (but not parents or peers) partially mediates the relationship between gratitude and academic self-perceptions.

### **Sensitivity Analyses**

To determine whether or not the presence of observations previously identified as multivariate outliers impacted these findings, the path models for GPA and academic self-perceptions were re-analyzed using a dataset in which multivariate outliers were removed ( $N=490$ ). The GPA model retained acceptable goodness of fit indices and all path coefficients remained significant/non-significant with only negligible differences in absolute value that did not change conclusions or interpretations. For the academic self-perceptions model, when multivariate outliers were removed, the path coefficient from peer support to academic self-perceptions emerged as statistically significant ( $\beta=.13, p=.009$ ), suggesting that the effect of gratitude on academic self-perceptions is partially mediated by both teacher and peer social support. No other changes in the results were observed.

## CHAPTER 5: DISCUSSION

The current study examined the relationships between gratitude and the psychological, social, and academic functioning of middle adolescents. Specifically, this study evaluated the associations between gratitude and students' life satisfaction, internalizing and externalizing symptoms, perceived social support (from parents, teachers, and peers), and multiple aspects of school functioning (GPA, standardized reading scores, attendance, and academic self-perceptions). The study also examined whether gender moderated the relationships between gratitude and any of the aforementioned psychological, social, or academic variables. Finally, this study explored whether social support from parents, teachers, and peers mediated the relationship between gratitude and outcome variables within the psychological and academic domains. The following discussion summarizes the findings that pertain to the research questions of interest, as well as places the results in the context of findings from previous research. Implications of the findings for practice are discussed and limitations of the study are reviewed. Last, areas that could be expanded in future research are suggested.

### **Relationships between Gratitude and Psychological Functioning**

The current study examined the extent to which gratitude was associated with both positive (i.e., life satisfaction) and negative (i.e., internalizing and externalizing symptoms) indicators of adolescents' mental health. In line with the hypotheses of this study, results revealed that higher levels of gratitude were strongly correlated with higher levels of life satisfaction. This finding is similar to what previous researchers have found

with adults (McCullough et al., 2002; Watkins et al., 2003). Moreover, the magnitude of the association between gratitude and life satisfaction was stronger in the current study than what Chen and Kee (2008) and Froh, Yurkewicz, and Kashdan (2009) found in their investigations with Taiwanese high school students and American middle school students, respectively. In addition to a significant bivariate relationship with life satisfaction, the current investigation found that gratitude accounted for nearly 40% of the variance in students' life satisfaction. This finding was similar to what Froh, Emmons, and colleagues (2011) found in their study of 1,035 primarily Caucasian high school students from an affluent population, extending their findings to more diverse groups of middle adolescents. Furthermore, in the current study, gratitude continued to predict life satisfaction even after controlling for socioeconomic status, which was shown to effect levels of life satisfaction in preliminary analyses. In sum, gratitude was identified as a robust predictor of a positive indicator of psychological well-being.

In regards to psychopathology, gratitude demonstrated a moderately strong inverse relationship with internalizing symptoms. In other words, students who reported being more grateful also reported fewer symptoms of depression, anxiety, low self-esteem, somatization, and paranoia. This finding supported the hypotheses of the study and is similar to previous research findings with adults (McCullough et al., 2002; Watkins et al., 2003). The one previous study that has investigated gratitude in relation to internalizing problems in youth found that higher levels of gratitude predicted lower levels of depression (Froh, Emmons et al., 2009). The current study found similar results: gratitude predicted lower levels of internalizing problems including, and extending beyond, symptoms of depression. Moreover, gratitude accounted for nearly 25% of the

variance in students' self-reported experiences of internalizing problems. Furthermore, the relationship between gratitude and internalizing symptoms held true even after taking into account the effect of gender, which was also found to significantly predict internalizing psychopathology.

This was the first published study of gratitude in youth to include a measure of externalizing psychopathology. A very small body of research with adults has suggested that gratitude is negatively related to externalizing problem behaviors such as aggression and hostility (Watkins et al., 2003). Therefore, it was anticipated that an inverse relationship between gratitude and externalizing problems in youth would be found in the current study. However, the current investigation did not find support for this claim amongst high school students. Specifically, gratitude was not significantly correlated with levels of hyperactivity, aggressiveness and misconduct in the current sample of adolescents when these types of behavior were measured as a set. Such findings may be due to a rater effect, as teachers served as the only reporters of students' manifestations of externalizing forms of mental health problems. Future researchers may consider using multiple raters to assess this variable, including more than one teacher, parents, and/or students themselves.

In sum, gratitude emerged as a significant predictor of students' overall satisfaction with their lives and their experience of internalizing psychopathology. More grateful youth tended to be more satisfied with their lives and experience less depression, anxiety, and other negative thoughts, feelings, and emotions. On the other hand, gratitude did not significantly relate to externalizing psychopathology; that is, the amount of

conduct-related and under-controlled behavior problems students manifested (and teachers observed) was not related to how grateful they were.

### **Relationships between Gratitude and Social Functioning**

The current study investigated the extent to which gratitude was related to the amount of social support students perceived they receive from parents, teachers, and peers. The amount of social support perceived from a relationship partner greatly determines the overall quality of, and one's satisfaction with, the relationship (Kasprzak, 2010). Moreover, gratitude is thought to serve as a reinforcer for benevolent and supportive actions, making such behaviors more likely to occur again in the future (McCullough et al., 2001). Therefore, it was hypothesized that more grateful youth would report receiving more social support from significant people in their lives.

This hypothesis was supported in the current investigation, as gratitude demonstrated a large positive correlation with perceived social support from parents and moderately strong positive associations with perceived social support from teachers and peers. The links between gratitude and parental and peer support were stronger in the current study than what was previously found by Froh and colleagues (2009) in a sample of middle school students. Furthermore, gratitude significantly predicted social support from parents even after controlling for the effects of socioeconomic status (preliminary analyses showed that students from higher SES backgrounds reported more support from their parents than students with lower SES). Similarly, gratitude significantly predicted peer social support while controlling for the effects of gender (preliminary analyses showed that girls perceived more social support from their classmates than boys). Notably, this was the first investigation to establish a link between gratitude and

perceived social support from teachers. Establishing these links between gratitude and social functioning was key to the current study's mediational hypotheses, as discussed later, and is important because it suggests a possible mechanism for increasing social support, which is a source of resilience in youth.

### **Relationships between Gratitude and Academic Functioning**

In addition to psychological and social functioning, the current study explored whether or not gratitude was related to another important domain of adolescent functioning, namely, educational functioning. Specifically, the study examined relationships between gratitude and academic performance (measured by GPA and standardized test scores), school attendance, and beliefs about academic competence (i.e., academic self-perceptions). Findings include that gratitude demonstrated a small positive correlation with GPA and a medium positive correlation with academic self-perceptions, but was not significantly related to attendance or standardized reading scores. Furthermore, gratitude predicted GPA above and beyond the effects of gender, SES, and ethnicity. The association between gratitude and GPA in the current study was similar to previous findings with youth (Froh, Emmons, et al., 2011; Park & Peterson, 2006a), but the regression analyses in the current study that isolated the effect of gratitude (i.e., controlled for the influence of the demographic variables) adds confidence to the statement that more grateful students earn better grades. No previous studies were found that examined relationships between gratitude and the other academic variables investigated in the current study.

In sum, the current study found some support for the hypothesis that higher trait gratitude is related to better academic outcomes, particularly students' confidence in their

ability to achieve at school. In terms of academic performance, gratitude was significantly related to students' GPA but not standardized test scores. This difference could be due to the fact that course grades depend on other factors besides strict academic knowledge or mastery, such as class participation, completion of assignments, group work, and teacher grading, which tends to be more subjective than standardized assessments. As such, an interpersonal character strength, like gratitude, is likely to be more apparent in course grades than a one-time test performance.

### **The Moderating Role of Gender**

Researchers have posited that women may derive more benefit from the expression of gratitude than men (Kashdan et al., 2009). Therefore, the current study explored whether or not gratitude was differentially related to aspects of psychological, social, and academic functioning for girls and boys. The results showed that gender did not significantly moderate the relationship between gratitude and life satisfaction. That is, greater gratitude was equally related to higher life satisfaction for boys and girls. This finding was consistent with outcomes reported by Froh and colleagues (2009), who found that gender did not moderate relationships between gratitude and measures of psychological wellness. On the other hand, gender significantly moderated the relationship between gratitude and internalizing psychopathology in the current study. Although a relationship between higher levels of gratitude and lower levels of internalizing problems existed for both genders, this relationship was stronger for girls than it was for boys, suggesting that girls may indeed reap more psychological benefits from being grateful than boys.

In regards to social functioning, gender did not significantly moderate the relationship between gratitude and social support from parents. This is inconsistent with previous research that found that gratitude was positively associated with family support for middle school boys but not for girls (Froh et al., 2009). In the current study, girls and boys both reported more parental support as their own levels of gratitude increased. Similarly, gender did not significantly moderate the relationships between gratitude and perceived social support from teachers or peers. Both girls and boys equivalently reported more social support from these sources as their own levels of gratitude increased.

Finally, the current investigation also failed to find statistical support for the hypothesis that gender would moderate the relationship between gratitude and academic functioning. More gratitude was consistently linked with better GPAs and academic self-perceptions regardless of gender.

In sum, support for the hypothesis that relationships between gratitude and psychological, social, and academic outcomes would be stronger for girls than for boys was only partially supported for the psychological domain (with regard to internalizing symptoms of psychopathology) but not the social or academic domains. Stated differently, the positive associations between gratitude and student outcomes identified in the current study seem to apply to both boys and girls in high school.

### **The Mediating Role of Social Support**

Frederickson (2004) posited that gratitude builds and strengthens social bonds and leads to the formation of a stronger social network, which in turn enhances other areas of one's life. Using this theory as a guide, the current study hypothesized that increased social support would at least partially explain why more gratitude predicts better

psychological and academic functioning. Results provided some support for this hypothesis. Specifically, perceived social support from one's parents partially mediated the aforementioned relationship between gratitude and life satisfaction. That is, more gratitude predicted more social support from parents, which in turn predicted greater life satisfaction. Social support from teachers and peers did not significantly mediate the relationship between gratitude and life satisfaction. Notably, gratitude continued to have a significant direct impact on life satisfaction, which suggests that being grateful, in and of itself, leads to more global life satisfaction in adolescents.

The mediating role of social support in the link between gratitude and internalizing psychopathology was different for boys and girls. For boys, the impact of gratitude on internalizing symptoms was completely explained through the amount of social support students perceived from their parents. In other words, more gratitude predicted more social support from parents, which in turn predicted fewer internalizing problems. Gratitude did not have a direct impact on internalizing symptoms for boys. On the other hand, for girls, social support from parents partially explained the strong relationship between higher gratitude and lower internalizing psychopathology, but gratitude continued to have a direct impact on internalizing symptoms. This means that being more grateful, in and of itself, predicted lower levels of internalizing problems for girls. At the same time, being more grateful predicted more social support from family, which also led to fewer internalizing symptoms. This analysis helped to clarify the moderating affect of gender with regard to internalizing problems discovered in research question four, in which boys demonstrated a weaker association between gratitude and internalizing problems than girls.

In regards to academic functioning, results from the current investigation did not find support for the hypothesis that social support from parents, teachers, or peers accounted for the impact of gratitude on GPA (i.e., there was not support for an indirect effect). Furthermore, there was no longer support for a direct effect of gratitude on GPA once social support variables were considered. However, results did indicate the presence of a significant overall effect of gratitude on GPA. These results suggest that higher levels of gratitude indeed predict higher GPAs, but that the nature of the effect (i.e. direct or indirect) could not be detected in the current investigation. It is possible that the hypothesized pathways do indeed explain the relationship between gratitude and GPA but the current investigation did not have enough statistical power to confirm either a direct or indirect effect. As such, future researchers should use a larger sample size that yields more statistical power. Another possible explanation is that social support is truly not a mediator of the relationship between gratitude and GPA and perhaps some other variable (such as better psychological functioning) serves this role.

More perceived social support from teachers again predicted better GPAs for students, which is in line with results of previous research studies that have explored relationships between social support and academic outcomes. However, social support from parents and peers did not emerge as significant mediators of GPA, after controlling for teacher support, in the current study. This was somewhat surprising given that several studies have shown even stronger links between parent support and academic achievement than between teacher support and academic achievement (Chambers et al., 2006; Rueger et al., 2010; Stewart & Suldo, 2011). However, recent meta-analytic work

has advanced positive teacher-student relationships as particularly tied to achievement among secondary students (Roorda, Koomen, Spilt, & Oort, 2011).

For academic self-perceptions, social support from teachers again served as a mediating variable in the model, although its mediation effect was only partial. In other words, some of the impact of gratitude on academic self-perceptions was explained by gratitude's influence on the level of support students received from their teachers. At the same time, gratitude continued to exert a direct influence on academic self-perceptions as well. Thus, simply being a grateful person is related to being more confident in one's academic abilities, but gratitude also facilitates academic self-perceptions through more desirable teacher-student relationships.

In sum, the current study found that social support from parents partially mediated the relationship between gratitude and life satisfaction, fully mediated the relationship between gratitude and internalizing symptoms for boys, and partially mediated the relationship between gratitude and internalizing symptoms for girls. Teacher support partially mediated the relationship between gratitude and students' academic self-perceptions. Finally, gratitude itself had a residual impact on students' life satisfaction, academic self-perceptions, and girl's internalizing problems that was not accounted for by social support.

While no previous studies could be found that examined such path models between gratitude, social support, and psychological and academic outcomes, the significant findings of this study are consistent with theoretical explanations of gratitude's impact on an individual's functioning, such as Frederickson's (2001) broaden-and-build theory of positive emotions, as well as previous research studies that link

gratitude to social support (Spangler, 2010), social support to psychological functioning (Suldo et al., 2009; Suldo & Shaffer, 2008), and social support to academic functioning (Ahmed et al., 2010; Malecki & Demaray, 2006; Rueger et al., 2010).

### **Contributions to the Literature**

The importance of studying positive psychological traits, emotions, and character strengths has gained increasing attention over the past decade since Seligman and Csikszentmihalyi's seminal publication in *American Psychologist* (2000). Nevertheless, researchers in the field have continued to call for more studies that extend positive psychology research to youth populations and school settings. For example, Lopez (2009) highlighted the expansion of positive psychology into the schools as one of the three primary goals for the positive psychology movement that have yet to be realized. Huebner and colleagues (2009) also agreed that there was a need for more research into the outcomes associated with positive psychology indicators in youth populations. In addition, Seligman (2005) asserted that one area in need of further investigation was how positive characteristics predict good outcomes and/or the absence of unwanted outcomes in youth. The present research study added to the available body of literature that is available to answer such questions by exploring the extent to which one positive psychology trait, gratitude, predicted important aspects of adolescents' mental health, social adjustment, and academic functioning.

There were already a handful of studies showing that gratitude was related to desirable outcomes in youth, the majority of which were conducted by Dr. Jeffrey Froh and his colleagues at Hofstra University (Froh, Emmons, Card, Bono, & Wilson, 2011; Froh, Kashdan, Yurkewicz, Allen, & Glowacki, 2010; Froh, Sefick, & Emmons, 2008;

Froh, Yurkewics, & Kashdan, 2009). These studies had shown that, amongst middle and high school students from highly affluent suburban populations, more gratitude was related to more life satisfaction, less depression, more social support from family and friends, and better grades. The current study replicated these findings by an independent research group and extended the conclusions to an ethnically and economically diverse sample of adolescents from rural and suburban settings.

The current study also expanded upon these earlier studies by showing that gratitude predicted the amount of social support students reported they received from their teachers as well as how confident students were about their own academic abilities. Thus, the current study examined gratitude in relation to key indicators of functioning that previous researchers had not included. Furthermore, previous research findings were equivocal as to whether or not gender served as a condition under which gratitude was related to better outcomes (Froh et al., 2009; Kashdan et al., 2009). The current investigation found that, in general, boys and girls both experience the same benefits from increased levels of gratitude (i.e., more life satisfaction, less internalizing psychopathology, more social support from parents, teachers, and peers, and better grades and academic self-perceptions). However, gratitude was more strongly related to internalizing problems for girls than for boys in the current study and girls were particularly vulnerable to experiencing higher levels of internalizing problems as gratitude diminished. Thus, while gratitude was psychologically beneficial to both genders, it was more so for girls.

Another way in which the current investigation contributed to the literature was that it tested, and found some support for, models of hypothesized causal pathways

between gratitude and outcomes that were grounded in Frederickson's broaden-and-build theory of positive emotions (Frederickson 2001; 2004). Specifically, this study showed that more gratitude predicted more social support from students' parents, which in turn led to higher levels of life satisfaction and lower levels of internalizing problems. In addition, higher levels of gratitude predicted more social support from students' teachers, which in turn led to students feeling more confident in their academic skills and abilities. These findings are supported by Frederickson's theory that being grateful builds and strengthens one's social bonds and connections with others, leading to the formation of a supportive social network that has several benefits for one's life.

Lastly, the current study provided further evaluation of the utility of the Gratitude Questionnaire-6 (GQ-6; McCullough et al., 2002) with youth populations. The current study found that the sixth item of the GQ-6 did not satisfactorily load onto the scale. This finding is consistent with previous research conducted with youth (Froh, Fan et al., 2011) and adds support to Froh and colleagues' suggestion that future researchers use this item cautiously with youth populations. The current study indicated support for a 5-item composite score that evidenced high levels of internal consistency reliability ( $\alpha = .84$ ) and convergent validity with another measure of gratitude, the Gratitude Adjective Checklist ( $r = .65$ ).

### **Implications for Practice**

According to the National Association of School Psychology (NASP) Practice Model (2010), school psychologists are equipped and expected to have knowledge of research related to resilience and risk factors in learning and mental health (Domain 6). School psychologists are also expected to understand behavioral and emotional impacts

on learning and life skills and be able to provide or suggest evidence-based strategies to promote social–emotional functioning and mental health (Domain 4). The current study is directly related to these roles and responsibilities of a school psychologist in that it shows that gratefulness is scientifically linked to better academic, social, and emotional functioning in adolescents. As such, it serves as a source of resiliency in students’ lives. In fact, the Penn Resiliency Project, which is a research supported school-based prevention program designed to enhance resilience, prevent depression, and improve the overall well-being of youth, recognizes gratitude as a key protective factor in youth’s lives and incorporates activities to foster and promote gratitude in its curriculum (Reivich, 2009; Reivich & Gillham, 2010).

There are two major areas of school psychology practice that can be informed by the research on gratitude. The first is that research on gratitude and its link to both positive psychological outcomes and diminished mental health problems has implications for the early detection of students at risk for developing psychopathology. In a special issue of the *Journal of School Psychology*, experts in the field emphasized the importance of universal screening in the early identification of students in need of intervention to enhance their mental health functioning (Albers, Glover, & Kratchowill, 2007). Levitt, Saka, Romanelli, and Hoagwood (2007) pointed out some shortcomings and barriers to effectively carrying out universal screening for mental health problems in schools. One obstacle is that students who are asymptomatic, but certainly at risk, might be missed with traditional screening procedures. Other concerns include that screening may unnecessarily label students with diagnoses and mental health stigmas (which may cause them and their parents to be resistant to treatment), that schools will not be able to

provide services or treatment to identified students, and that the identification of mental health problems may lead to recommendations for medication, which may have adverse side effects for youth.

Using a strength-based approach to screening addresses these limitations with traditional universal screening procedures and has several other advantages (see Beaver, 2008 and Jimerson, Sharkey, Nyborg, & Furlong, 2004 for a full discussion). Strength-based assessment refers to “the measurement of those emotional and behavioral skills, competencies, and characteristics that create a sense of personal accomplishment; contribute to satisfying relationships with family members, peers, and adults; enhance one’s ability to deal with adversity and stress; and promote one’s personal, social, and academic development” (Epstein & Sharma, 1998, p.3). The current study showed that gratitude both contributes to better relationships with families, peers, and teachers and contributes to psychological, social, and academic development, thus making gratitude an asset worthy to include as part of strength-based evaluation and screening to identify students in need of social-emotional interventions and supports.

One measure of strength-based assessment, the Values In Action Inventory of Strengths for Youth (VIA-Youth; Park & Peterson, 2006a), already includes gratitude as one of the character strengths it assesses. Another option is to supplement other screening tools with a short and quick measure of gratitude such as the GAC or GQ-6 (McCullough et al., 2002), both of which were used successfully in the current study of adolescents. Including gratitude as part of an early screening for social and emotional health would likely be viewed as feasible and acceptable to students, parents, and teachers because it

has less of a negative stigma or connotation than screening for the presence of mental health “problems.”

The second area of practice that research on gratitude informs is social-emotional intervention, which is the logical next step after assessment and identification of students in need of intervention. For students who already possess the character strength of gratitude but continue to struggle with their overall social and emotional well-being, practitioners can help and encourage these students to identify new and different ways they can use and express gratitude. Research has shown that using signature character strengths in novel ways boosts happiness and reduces depressive symptoms (Seligman, Steen, Park & Peterson, 2005). For students who are relatively low in gratitude, practitioners can implement a variety of interventions to help cultivate and increase their levels of grateful thinking.

Research has shown that “counting blessings,” also referred to as gratitude journaling, increases individuals’ levels of gratitude and leads to better emotional and physical health (Emmons & Crumpler, 2000; Emmons & McCullough, 2003; Froh, Sefick, & Emmons, 2008; Seligman et al., 2005). Gratitude journaling simply involves reflecting upon and writing down good things that have happened in one’s life for which they are grateful and can be done on a daily or weekly basis. This intervention has been successfully carried out in a school setting (Froh et al., 2008; Reivich et al., 2003). Another gratitude intervention with empirical support entails writing gratitude letters (i.e., writing to someone who was kind or did something nice for the person and was never formally thanked) and delivering them either via mail or in person (Froh, Kashdan,

Ozimkowski, & Miller, 2009; Reivich et al., 2003; Seligman et al., 2005; Watkins et al., 2003).

Moreover, research has shown that students can learn to be more grateful by receiving structured lessons on the social-cognitive determinants of gratitude (Froh, Bono et al., 2011 as cited in Froh & Bono, 2011). In other words, students can be taught how to become more aware of the social and cognitive appraisals that are involved in receiving favors from others (such as recognizing others' intent and recognizing costs to the benefactors). This knowledge, in turn, leads to students experiencing more gratitude.

Gratitude interventions can stand alone, or take place as part of a larger intervention designed to improve the social-emotional health of students. Indeed, a recent school-based intervention that targeted the development of gratitude as one of its main components via gratitude journaling and gratitude visits yielded promising short-term effects on adolescents' life satisfaction (Suldo, Savage, & Mercer, in press). Additional research is needed to determine how to ensure such positive effects are maintained over time. Reivich and colleagues (2003) also describe overall positive psychology interventions with gratitude components. There are also several other ideas that school psychology practitioners can implement to help promote gratitude at their schools and in classrooms, such as adopting a gratitude month (usually November since it includes the holiday of Thanksgiving) where staff and students engage in a variety of gratitude projects and activities; creating class-wide gratitude journals or bulletin boards; reading books about gratitude; starting a gratitude club; and talking to parents about the importance of gratitude in their own lives.

Molony and Henwood (2010) and Seligman, Ernst, Gillham, Reivich, and Linkins (2009) provide comprehensive reviews on ideas and strategies for incorporating gratitude into various academic content areas, classrooms, and school settings. Furthermore, the NASP ([www.nasponline.org/communications/spawareness/2009\\_gratitudeworks.asp](http://www.nasponline.org/communications/spawareness/2009_gratitudeworks.asp)) and Fishful Thinking ([www.fishfulthikning.com](http://www.fishfulthikning.com)) websites have several resources for practitioners who want to implement gratitude interventions in their schools. One caveat to this recommendation to provide gratitude interventions in schools is that more direct, experimental research is needed to determine the effectiveness of such programs on preventing mental health problems and increasing positive psychological, social, and academic functioning.

### **Limitations and Future Directions for Research**

One limitation of the current study is the extent to which results are generalizable to the larger population of middle adolescents. While the current study attempted to use an ethnically, culturally, and economically diverse sample of students, neither of the schools from which students were recruited nor the participants themselves were randomly selected but rather volunteered for participation. Therefore, it is possible that the schools and students in this study may be uniquely different in some ways from schools and students who did not volunteer to take part in this research. Furthermore, certain groups of students, such as those in 12<sup>th</sup> grade, special education, or English-language learner classes were not represented in this study. Consequently, precautions should be taken when attempting to generalize the results of this study to other populations of adolescents.

A second limitation of the study is that its correlational nature precludes conclusions about causality. In other words, it cannot be stated that lower levels of gratitude *cause* lower levels of social support, less life satisfaction, lower grades or higher levels of psychopathology. Only true experimental designs, where participants are randomly assigned to groups and the effects of the independent variable (i.e., gratitude) on outcome variables can be isolated, manipulated, and measured, allow for interpretations about causality. These types of studies are rare in gratitude research and should be considered as a future direction for gratitude research with youth.

Another potential limitation of the current investigation was the use of self-report data. The limitations of self-report data were, to an extent, minimized in the current study by incorporating a scale to detect haphazard responding and by using teacher-reports to measure externalizing problems, which research has shown are less reliably measured via self-report (Loeber et al., 1991). Furthermore, the use of self-report measures was very appropriate for some of the variables assessed, such as students' experiences of internalizing symptoms (Logan & King, 2002). However, having students self-report on their own levels of gratitude may be subject to effects of social desirability, that is, wanting to present or project oneself in an overly positive way. Thus, future studies may want to supplement students' self-report of their gratitude with data from other informants, such as parents, teachers, and peers. Additionally, future researchers may want to measure externalizing problems from a variety of sources, including teachers, parents, and students themselves.

In addition, parent, teacher, and peer support was assessed through students' perceptions of the extent to which they received social support from these sources. One

could argue that perceived social support is not guaranteed to reliably represent the amount of support that students' actually receive from parents, teachers, and peers. Other within-person variables may affect the perception and evaluation of supportive acts (Cutrona, 1986). On the other hand, it can be argued that perceptions of students' experiences matter more than the objective determinants of social support in terms of how well students function because support is not likely to be effective if students do not perceive it as so (Demaray & Malecki, 2003). Nevertheless, it is possible that such unidentified factors alluded to by Cutrona (1986) may be responsible for the positive association between perceived social support and gratitude found in the current study.

Similarly, the variable of academic self-perceptions as a measure of academic functioning may have its own limitations. While there is a large body of research showing moderate positive relationships between academic self-beliefs and actual academic achievement (see Hansford & Hattie, 1982), later studies have shown that this relationship is largely reciprocal in nature and that having higher self-perceptions of academic ability only minimally, if at all, predicts future academic performance (Stringer & Heath, 2008; Valentine, Dubois, & Cooper, 2004). Moreover, studies have shown that some students, such as those with Attention Deficit/Hyperactivity Disorder tend to overestimate their academic competence compared to their actual performance (Hoza et al., 1993; 2002). Therefore, the extent to which self-reported academic abilities is a significant aspect of academic achievement is a question of debate in the field of education (Valentine et al., 2004). Even though academic self-perceptions was not the only measure of academic performance included in the current study, it was the one with the strongest link to gratitude in bivariate, regression, and path model analyses.

Therefore, overall conclusions about the relationship between gratitude and academic functioning should be made in light of the larger body of research on self-perceived academic ability.

One additional limitation involves a basic assumption of path analysis that the model be self-contained, that is, that all known non-trivial causes of a model's endogenous variables be included in the model as predictor variables (Hatcher, 1994). However, largely due to use of an archived data set, the current investigation did not include all variables that have been shown or have been theorized to contribute to students' life satisfaction, internalizing problems, or academic achievement. This reality was evident in the fact that the models proposed in the study accounted for no more than half of the overall variance in any single outcome variable, suggesting that a significant amount of variance in these outcomes could be attributed to other variables that were not accounted for in the models. It is possible that had these other variables been included, results relative to gratitude's effect on outcomes may have changed. Therefore, future studies should plan to measure and include all variables known to be associated with the outcomes.

Along these same lines, the path model predicting a mediating effect of social support in the link between gratitude and GPA was not supported by the data. There was not a significant direct effect in the model, yet an overall effect of gratitude on GPA was detected. It serves to reason then that some other variable is responsible for the relationship between gratitude and GPA. One potential hypothesis is that psychological factors may be involved. That is, perhaps gratitude predicts more life satisfaction and fewer internalizing problems, which in turn predicts better GPAs. This is a plausible

explanation given that extant literature shows that better mental health co-occurs with better academic functioning (Antaramian, Huebner, Hills, & Valois, 2010; Roeser, Eccles, & Strobel, 1998; Suldo & Shaffer, 2008). Such hypotheses could be tested in future research.

Finally, while the current investigation added to the growing body of research supporting the notion that gratitude is linked to better psychological, academic, and social functioning in youth, more research is needed to show that gratitude interventions, particularly in the school setting, can increase students' levels of gratitude and enhance their social-emotional and academic well-being. Future gratitude researchers should also consider developing and evaluating measures of strength-based assessment that include gratitude as an important indicator of social-emotional functioning. Another direction for future research would be to extend correlational designs similar to this one to examining the effects of gratitude on psychological, social, and academic functioning over time.

### **Summary**

In conclusion, the current study has expanded the literature by providing corroborating support for previous research that has identified links between gratitude and psychological, social, and academic outcomes in youth. This study found that gratitude is particularly tied to girls' psychological distress. Furthermore, this study also identified social mediating variables that help to explain the nature of the relationship between gratitude and enhanced functioning. This research has important implications for school psychologists regarding how to best identify and support students at risk for poor social-emotional and academic functioning. In addition this study has highlighted areas in need of further investigation and has suggested ways to improve future research studies.

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## APPENDICES

### Appendix A: Demographic Questionnaire

Fall 2010

School: \_\_\_\_\_

Code #: \_\_\_\_\_

---

Birthdate: \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_  
(month) (day) (year)

PLEASE READ EACH QUESTION AND CIRCLE ONE ANSWER PER QUESTION:

1. I am in grade:                      9      10      11
2. My gender is:                      Male              Female
3. Do you receive free or reduced-price school lunch?      Yes              No
4. Are you of Hispanic, Latino, or Spanish origin?
  - a. **No**, not of Hispanic, Latino, or Spanish origin
  - b. Yes, Mexican, Mexican American, Chicano
  - c. Yes, Puerto Rican
  - d. Yes, Cuban
  - e. Yes, another Hispanic, Latino, or Spanish origin (*please specify*): \_\_\_\_\_
5. What is your race? (*circle all that apply*)
  - a. White
  - b. Black or African American
  - c. American Indian or Alaska Native
  - d. Asian
  - e. Native Hawaiian /Other Pacific Islander
  - f. Other (*please specify*): \_\_\_\_\_
6. My biological parents are:
  - a. Married
  - b. Divorced
  - c. Separated
  - d. Never married
  - e. Never married but living together
  - f. Widowed
7. I live with my:
  - a. Mother and Father
  - b. Mother only
  - c. Father only
  - d. Mother and Step-father(or partner)
  - e. Father and Step-mother (or partner)
  - f. Grandparent(s)
  - g. Other relative (*please specify*): \_\_\_\_\_
  - h. Other (*please specify*): \_\_\_\_\_
8. My father's highest education level is:
  - a. 8<sup>th</sup> grade or less
  - e. College/university degree

- b. Some high school, did not complete
- c. High school diploma/GED
- d. Some college, did not complete
- f. Master's degree
- g. Doctoral level (Ph.D, M.D.) or other degree beyond Master's level

9. My mother's highest education level is:

- a. 8<sup>th</sup> grade or less
- b. Some high school, did not complete
- c. High school diploma/GED
- d. Some college, did not complete
- e. College/university degree
- f. Master's degree
- g. Doctoral level (Ph.D, M.D.) or other degree beyond Master's level

Sample Questions:

	Never	Almost Never	Sometimes	Almost All of the Time	All of the Time
1. I go to the beach	1	2	3	4	5

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
2. Going to the beach is fun	1	2	3	4	5	6

## Appendix B: Gratitude Questionnaire-6

Circle a number from (1) to (7) where (1) indicates you **strongly disagree** with the statement and (7) indicates you **strongly agree** with the statement. 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.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
1. I have so much in life to be thankful for	1	2	3	4	5	6	7
2. If I had to list everything that I felt thankful for, it would be a very long list	1	2	3	4	5	6	7
3. When I look at the world, I don't see much to be thankful for	1	2	3	4	5	6	7
4. I am thankful to a wide variety of people	1	2	3	4	5	6	7
5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history	1	2	3	4	5	6	7
6. Long amounts of time can go by before I feel thankful to something or someone	1	2	3	4	5	6	7

### Appendix C: Student Life Satisfaction Scale

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. For 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

## Appendix D: BASC-2 SRP-A (Adapted)

**DIRECTIONS:** The next two pages contain sentences that young people may use to describe how they think or feel or act. Read each sentence carefully. For the first group of sentences, you will have two answer choices: T or F. Circle T for True if you agree with a sentence. Circle F for False if you do not agree with a sentence. For the second group of sentences, you will have four answer choices: N, S, O, and A. Circle N if the sentence **never** describes you or how you feel. Circle S if the sentence **sometimes** describes you or how you feel. Circle O if the sentence **often** describes you or how you feel. Circle A if the sentence **almost always** describes you or how you feel.

Give the best response for you for each sentence, even if it is hard to make up your mind. There are no right or wrong answers. Please do your best, tell the truth, and respond to every sentence.

**REMEMBER: Mark T for TRUE or F for FALSE**

- |   |  |
|---|--|
| <p>1. I like who I am. .... T F</p> <p>2. Nothing goes my way. .... T F</p> <p>3. My muscles get sore a lot. .... T F</p> <p>4. Things go wrong for me, even when I try hard. .... T F</p> <p>5. I used to be happier. .... T F</p> <p>6. I often have headaches. .... T F</p> <p>7. I can never seem to relax. .... T F</p> <p>8. My classmates don't like me. .... T F</p> <p>9. I have not seen a car in at least six months. .... T F</p> <p>10. What I want never seems to matter. .... T F</p> <p>11. I worry about little things. .... T F</p> <p>12. Nothing is fun anymore. .... T F</p> <p>13. I never seem to get anything right. .... T F</p> <p>14. My friends have more fun than I do. .... T F</p> <p>15. I cover up my work when the teacher walks by. .... T F</p> <p>16. I wish I were different. .... T F</p> <p>17. I have just returned from a 9-month trip on an ocean liner. .... T F</p> <p>18. Nobody ever listens to me. .... T F</p> <p>19. Often I feel sick in my stomach. .... T F</p> <p>20. My parents have too much control over my life. .... T F</p> <p>21. My teacher understands me. .... T F</p> <p>22. I just don't care anymore. .... T F</p> | <p>23. Sometimes my ears hurt for no reason. .... T F</p> <p>24. I worry a lot of the time. .... T F</p> <p>25. I get along well with my parents. .... T F</p> <p>26. Other children don't like to be with me. .... T F</p> <p>27. I wish I were someone else. .... T F</p> <p>28. My parents are always telling me what to do. .... T F</p> <p>29. I often worry about something bad happening to me. .... T F</p> <p>30. I don't seem to do anything right. .... T F</p> <p>31. Most things are harder for me than for others. .... T F</p> <p>32. Other children are happier than I am. .... T F</p> <p>33. I take a plane trip from New York to Chicago at least twice a week. .... T F</p> <p>34. I never quite reach my goal. .... T F</p> <p>35. I feel good about myself. .... T F</p> <p>36. Sometimes, when alone, I hear my name. .... T F</p> <p>37. Nothing ever goes right for me. .... T F</p> <p>38. I get sick more than others. .... T F</p> <p>39. My parents blame too many of their problems on me. .... T F</p> <p>40. My teacher cares about me. .... T F</p> <p>41. Nothing about me is right. .... T F</p> <p>42. My stomach gets upset more than most people's. .... T F</p> |
|---|--|

Continued on next page

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### BASC-2 SRP-A (cont'd)

REMEMBER:	N—Never	S—Sometimes	O—Often	A—Almost Always
43. I get so nervous I can't breathe. ....	N	S	O	A
44. I am proud of my parents. ....	N	S	O	A
45. Other kids hate to be with me. ....	N	S	O	A
46. I like the way I look. ....	N	S	O	A
47. People say bad things to me. ....	N	S	O	A
48. I get blamed for things I can't help. ....	N	S	O	A
49. I worry when I go to bed at night. ....	N	S	O	A
50. I feel like my life is getting worse and worse. ....	N	S	O	A
51. Even when I try hard, I fail. ....	N	S	O	A
52. My teacher trusts me. ....	N	S	O	A
53. People act as if they don't hear me. ....	N	S	O	A
54. I am disappointed with my grades. ....	N	S	O	A
55. I get upset about my looks. ....	N	S	O	A
56. I feel like people are out to get me. ....	N	S	O	A
57. I feel depressed. ....	N	S	O	A
58. I sleep with my schoolbooks. ....	N	S	O	A
59. Teachers make me feel stupid. ....	N	S	O	A
60. No one understands me. ....	N	S	O	A
61. I feel dizzy. ....	N	S	O	A
62. Someone wants to hurt me. ....	N	S	O	A
63. I feel guilty about things. ....	N	S	O	A
64. I like going places with my parents. ....	N	S	O	A
65. I feel that nobody likes me. ....	N	S	O	A
66. I am good at things. ....	N	S	O	A
67. I am lonely. ....	N	S	O	A
68. I get nervous. ....	N	S	O	A
69. My parents expect too much from me. ....	N	S	O	A
70. I worry but I don't know why. ....	N	S	O	A
71. I feel sad. ....	N	S	O	A
72. When I take tests, I can't think. ....	N	S	O	A
73. Teachers look for the bad things that you do. ....	N	S	O	A
74. I am left out of things. ....	N	S	O	A
75. Even when alone, I feel like someone is watching me. ....	N	S	O	A
76. I want to do better, but I can't. ....	N	S	O	A
77. My looks bother me. ....	N	S	O	A
78. I hear voices in my head that no one else can hear. ....	N	S	O	A
79. My parents are easy to talk to. ....	N	S	O	A
80. Teachers are unfair. ....	N	S	O	A
81. I see weird things. ....	N	S	O	A
82. I get nervous when things do not go the right way for me. ....	N	S	O	A
83. My mother and father like my friends. ....	N	S	O	A
84. People think I am fun to be with. ....	N	S	O	A
85. Other people find things wrong with me. ....	N	S	O	A
86. Little things bother me. ....	N	S	O	A
87. I am blamed for things I don't do. ....	N	S	O	A
88. I worry about what is going to happen. ....	N	S	O	A
89. My mother and father help me if I ask them to. ....	N	S	O	A
90. I fail at things. ....	N	S	O	A
91. My teacher is proud of me. ....	N	S	O	A
92. I feel out of place around people. ....	N	S	O	A
93. Someone else controls my thoughts. ....	N	S	O	A
94. I quit easily. ....	N	S	O	A
95. I am slow to make new friends. ....	N	S	O	A
96. I do things over and over and can't stop. ....	N	S	O	A
97. My parents listen to what I say. ....	N	S	O	A
98. I like to be close to my parents. ....	N	S	O	A
99. My teachers want too much. ....	N	S	O	A
100. I get phone calls from popular movie actors. ....	N	S	O	A
101. I hear things that others cannot hear. ....	N	S	O	A
102. I am liked by others. ....	N	S	O	A
103. I feel that others do not like the way I do things. ....	N	S	O	A
104. People get mad at me, even when I don't do anything wrong. ....	N	S	O	A
105. I am afraid of a lot of things. ....	N	S	O	A
106. My parents trust me. ....	N	S	O	A
107. My parents are proud of me. ....	N	S	O	A
108. My teacher gets mad at me for no good reason. ....	N	S	O	A
109. Other people are against me. ....	N	S	O	A

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## Appendix E: Children and Adolescents' Social Support Scale (CASSS)

**DIRECTIONS:** 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. **Rate how often you receive the support described.**

My Parent(s)	Never	Almost Never	Some of the Time	Most of the Time	Almost Always	Always
1 ... show they are proud of me.	1	2	3	4	5	6
2 ... understand me.	1	2	3	4	5	6
3 ... listen to me when I need to talk.	1	2	3	4	5	6
4 ... make suggestions when I don't know what to do.	1	2	3	4	5	6
5 ... give me good advice.	1	2	3	4	5	6
6 ... help me solve problems by giving me information.	1	2	3	4	5	6
7 ... tell me I did a good job when I do something well.	1	2	3	4	5	6
8 ... nicely tell me when I make mistakes.	1	2	3	4	5	6
9 ... reward me when I've done something well.	1	2	3	4	5	6
10 ... help me practice my activities.	1	2	3	4	5	6
11 ... take time to help me decide things.	1	2	3	4	5	6
12 ... get me many of the things I need.	1	2	3	4	5	6
My Teacher(s)	Never	Almost Never	Some of the Time	Most of the Time	Almost Always	Always
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
	My Classmates	Never	Almost Never	Some of the Time	Most of the Time	Almost Always	Always
25	... treat me nicely.	1	2	3	4	5	6
26	... like most of my ideas and opinions.	1	2	3	4	5	6
27	... pay attention to me.	1	2	3	4	5	6
28	... give me ideas when I don't know what to do.	1	2	3	4	5	6
29	... give me information so I can learn new things.	1	2	3	4	5	6
30	... give me good advice.	1	2	3	4	5	6
31	... tell me I did a good job when I've done something well.	1	2	3	4	5	6
32	... nicely tell me when I make mistakes.	1	2	3	4	5	6
33	... notice when I have worked hard.	1	2	3	4	5	6
34	... ask me to join activities.	1	2	3	4	5	6
35	... spend time doing things with me.	1	2	3	4	5	6
36	... help me with projects in class.	1	2	3	4	5	6

### Appendix F: School Attitude Assessment Survey-Revised (SAAS-R)

Please rate how strongly you agree or disagree with the following statements. In answering each question, use a range from (1) to (7) where (1) stands for **strongly disagree** and (7) stands for **strongly agree**. Please circle only one response choice per question.

Statement:	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
1. I am intelligent	1	2	3	4	5	6	7
2. I can learn new ideas quickly in school	1	2	3	4	5	6	7
3. I am smart in school	1	2	3	4	5	6	7
4. I am glad that I go to this school	1	2	3	4	5	6	7
5. This is a good school	1	2	3	4	5	6	7
6. I am good at learning new things in school	1	2	3	4	5	6	7
7. This school is a good match for me	1	2	3	4	5	6	7
8. School is easy for me	1	2	3	4	5	6	7
9. I want to get good grades in school	1	2	3	4	5	6	7
10. Doing well in school is important for my future career goals	1	2	3	4	5	6	7
11. I like this school	1	2	3	4	5	6	7
12. I can grasp complex concepts in school	1	2	3	4	5	6	7
13. Doing well in school is one of my goals	1	2	3	4	5	6	7
14. I am capable of getting straight A's	1	2	3	4	5	6	7
15. I am proud of this school	1	2	3	4	5	6	7
16. It's important to get good grades in school	1	2	3	4	5	6	7
17. I want to do my best in school	1	2	3	4	5	6	7
18. It is important for me to do well in school	1	2	3	4	5	6	7

## Appendix G: Parent Consent Form

Dear Parent or Caregiver:

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

- ✓ **Who We Are:** The research team is led by Shannon Suldo, Ph.D., a professor in the School Psychology Program at the University of South Florida (USF). Several graduate students in the USF College of Education are also on the team. We are planning the study in cooperation with the administration of your child's school to make sure that the study provides information that will be useful to the school.
- ✓ **Why We are Requesting Your Child's Participation:** This study is being conducted as part of a project entitled, "Subjective Well-Being of High School Students." Your child is being asked to participate because he or she is a student at a high school within Hillsborough County Public Schools (HCPS).
- ✓ **Why Your Child Should Participate:** We need to learn more about what leads to happiness and health during the teenage years! The information that we collect from students may help increase our overall awareness of the importance of monitoring students' happiness during adolescence. In addition, group-level results of the study will be shared with the teachers and administrators at your high school in order to increase their knowledge of the relationship between specific school experiences and psychological wellness in students. Please note neither you nor your child will be paid for your child's participation in the study. However, all students who participate in the study will be entered into a drawing for one of several gift certificates.
- ✓ **What Participation Requires:** If your child is given permission to participate in the study, he or she will be asked to complete several paper-and-pencil questionnaires. These surveys will ask about your child's thoughts, behaviors, and attitudes towards him/herself, school, teachers, classmates, family, and life in general. The surveys will also ask about your child's physical health and involvement in after-school activities. Completion is expected to take your child between 45 and 60 minutes. We will administer the questionnaires during regular school hours, to large groups of students who have parent permission to participate. Participation will occur during one class period this school year. If your child is enrolled in a HCPS high school next year, he or she will be asked to complete the same surveys again so that we can examine change over time. In addition to completing surveys, a small number of students selected due to their specific mental health profile will be asked to participate in one brief (30 minutes or less) interview. The interview will occur during regular school hours and consist of us asking students additional questions about the thoughts and behaviors that affect their happiness. In total, participation will take about 60 to 90 minutes of your child's time each year for the next two years. Another part of participation involves a review of your child's school records. Under the supervision of school administrators, we will retrieve the following information about your child: grade point average, FCAT scores, attendance, and discipline referrals. Finally, one of your child's teachers will be asked to complete a rating scale about your child's behavior at school.
- ✓ **Please Note:** Your decision to allow your child to participate in this research study must be completely voluntary. You are free to allow your child to participate in this research study or to withdraw him or her at any time. Your decision to participate, not to participate, or to withdraw participation at any point during the study will in no way affect your child's student status, his or her grades, or your relationship with HCPS, USF, or any other party.

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- ✓ **Confidentiality of Your Child's Responses:** There is minimal risk to your child for participating in this research. We will be present during administration of the questionnaires in order to provide assistance to your child if he or she has any questions or concerns. Additionally, school guidance counselors will be available to students in the unlikely event that your child becomes emotionally distressed while completing the measures. Your child's privacy and research records will be kept confidential to the extent of the law. Authorized research personnel, employees of the Department of Health and Human Services, the USF Institutional Review Board and its staff, and other individuals acting on behalf of USF may inspect the records from this research project, but your child's individual responses will not be shared with school system personnel or anyone other than us and our research assistants. Your child's completed questionnaires will be assigned a code number to protect the confidentiality of his or her responses. Only we will have access to the locked file cabinet stored at USF that will contain: (1) all records linking code numbers to participants' names, and (2) all information gathered from school records. All records from the study (completed surveys, information from school records) will be destroyed in four years. Please note that although your child's specific responses on the questionnaires will not be shared with school staff, if your child indicates that he or she intends to harm him or herself, we will contact district mental health counselors to ensure your child's safety.
- ✓ **What We'll Do With Your Child's Responses:** We plan to use the information from this study to inform educators and psychologists about the relationships between students' psychological wellness (particularly their subjective well-being, also referred to as happiness) and optimal development with respect to academic achievement, physical health, social relations, identity formation, and engagement in meaningful activities. The results of this study may be published. However, the data obtained from your child will be combined with data from other people in the publication. The published results will not include your child's name or any other information that would in any way personally identify your child.
- ✓ **Questions?** If you have any questions about this research study, please contact Dr. Suldo at (813) 974-2223. If you have questions about your child's rights as a person who is taking part in a research study, you may contact a member of the Division of Research Compliance of the USF at (813) 974-9343, and refer to eIRB # 1693.
- ✓ **Want Your Child to Participate?** To permit your child to participate in this study, please complete the attached consent form and have your child turn it in to his or her designated teacher.

Sincerely,

Shannon Suldo, Ph.D.  
Associate Professor of School Psychology

**Consent for Child to Take Part in this Research Study**

I freely give my permission to let my child take part in this study. I understand that this is research. I have received a copy of this letter and consent form for my records.

Printed name of child	Grade level of child
Signature of parent of child taking part in the study	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
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## Appendix H: Student Assent Form

Hello!

Today you will be asked to take part in a research study by filling out several surveys. Our goal in conducting the study is to determine the links between students' psychological wellness and their school performance, physical health, social relationships, and sense of self.

- ✓ **Who We Are:** The research team is led by Shannon Suldo, Ph.D., a professor in the School Psychology Program at the University of South Florida (USF). Several graduate students in the USF College of Education are also on the team. We are working with your school administrators to make sure this study will be helpful to your school.
- ✓ **Why We Are Asking You to Take Part in the Study:** This study is part of a project called, "Subjective Well-Being of High School Students." You are being asked to take part because you are a student at a high school within Hillsborough County Public Schools (HCPS).
- ✓ **Why You Should Take Part in the Study:** We need to learn more about what leads to happiness and health during the teenage years! The information that we collect may help us better understand why we should monitor students' happiness. In addition, results from the study will be shared with your high school to show them how happiness is related to school grades and behavior, physical health, social relationships, and identity. You will not be paid for taking part in the study.
- ✓ **Filling Out the Surveys:** These surveys will ask you about your thoughts, behaviors, and attitudes towards school, family, and life in general. The surveys will also ask about your physical health and after-school activities. It will probably take between 45 and 60 minutes to fill out the surveys. We will also ask you to complete these surveys again one year from now. A few months later, some students will be asked to participate in one brief (30 minutes or less) interview. If you take part in the interview, we will ask you additional questions about thoughts and behaviors that influence your happiness.
- ✓ **What Else Will Happen if You Are in the Study:** If you choose to take part in the study, we will look at some of your school records- grades, discipline record, attendance, and FCAT scores. We will gather this information under the guidance of school administrators.
- ✓ **Please Note:** Your involvement in this study is voluntary (your choice). By signing this form, you are agreeing to take part in this study. Your decision to take part, not to take part, or to stop taking part in the study at any time will *not* affect your student status or your grades; you will not be punished in any way. If you choose not to take part, it will not affect your relationship with HCPS, USF, or anyone else.
- ✓ **Privacy of Your Responses:** Your school guidance counselors are also on hand in case you become upset. Your privacy and research records will be kept confidential (private, secret) to the extent of the law. People approved to do research at USF, people who work for the Department of Health and Human Services, the USF Institutional Review Board, and its staff, and other individuals acting on behalf of USF may look at the records from this research project. However, your individual responses will not be shared with people in the school system or anyone other than us and our research assistants. Your completed surveys will be given a code number to protect the privacy of your responses. Only we will have the ability to open the locked file cabinet stored at USF that will contain: (1) all records linking code numbers to names, and (2) all information gathered from school records. All records from the study (completed surveys, information from school records) will be destroyed four years after the study is done. Again, your specific responses will not be shared with school staff. However, if you respond on the surveys that you plan to harm yourself, we will let district counselors know in order to make sure you are safe.

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- ✓ **What We'll Do With Your Responses:** We plan to use the information from this study to let others know about how students' happiness is related to school grades, physical health, social relationships, identity development, and engagement in meaningful activities. The results of this study may be published. However, your responses will be combined with other students' responses in the publication. The published results will not include your name or any other information that would identify you.
- ✓ **Questions?** If you have any questions about this research study, please raise your hand now or at any point during the study. Also, you may contact us later at (813) 974-2223 (Dr. Suldo). If you have questions about your rights as a person who is taking part in a research study, contact a member of the Division of Research Compliance of the USF at (813) 974-9343, and refer to eIRB # 1693.

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

Sincerely,

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

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

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

\_\_\_\_\_  
Signature of child taking  
part in the study

\_\_\_\_\_  
Printed name of child

\_\_\_\_\_  
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 I: Teacher Consent Form

Dear Teacher:

This letter provides information about a research study that will be conducted in your high school by investigators from the University of South Florida. We are conducting the study to determine the links between students' psychological wellness and their school performance, physical health, social relationships, and sense of self.

- ✓ **Who We Are:** The research team consists of Shannon Suldo, Ph.D., a professor in the School Psychology Program at the University of South Florida (USF), and several doctoral students in the USF College of Education. We are planning the study in cooperation with the administration at your school to make sure that the study provides information that will be useful to the school.
- ✓ **Why We are Requesting Your Participation:** This study is being conducted as part of a project entitled, "Subjective Well-Being of High School Students." You are being asked to participate because you are a teacher of at least one student who is a participant in the project.
- ✓ **Why You Should Participate:** We need to learn more about what leads to happiness and health during the teenage years! The information that we collect from teachers may help increase our overall awareness of the importance of monitoring students' happiness. In addition, information from the study will be shared with you and other staff at your school in order to increase your knowledge of the relationship between students' mental health and their educational performance, physical health, social relationships, etc. Please note that you will be compensated \$5 for each student that you rate.
- ✓ **What Participation Requires:** You will be asked to complete a questionnaire(s) about the behavior of each of your students who is a participant in the study. Completion of the questionnaire(s) is expected to take between 10 and 15 minutes.
- ✓ **Please Note:** Your decision to participate in this research study must be completely voluntary. You are free to participate in this research study or to withdraw from participation at any time. If you choose not to participate, or if you withdraw at any point during the study, this will in no way affect your relationship with HCPS, USF, or any other party.
- ✓ **Confidentiality of Your Responses:** There is minimal risk for participating in this research. Your privacy and research records will be kept confidential to the extent of the law. Authorized research personnel, employees of the Department of Health and Human Services, the USF Institutional Review Board and its staff, and other individuals acting on behalf of USF may inspect the records from this research project, but your individual responses will not be shared with school system personnel or anyone other than the USF research team. Your completed questionnaire(s) will be assigned a code number to protect the confidentiality of your responses. Only the USF research team will have access to the locked file cabinet stored at USF that will contain all records linking code numbers to participants' names.

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## Appendix J: IRB Approval Notice

7/22/13

University of South Florida Mail - eIRB: Amendment Approved



Michelle Frey <mfrey2@mail.usf.edu>

---

### eIRB: Amendment Approved

1 message

eirb@research.usf.edu <eirb@research.usf.edu>

Sun, Nov 18, 2012 at 11:54 AM

Reply-To: eirb@research.usf.edu

To: mfrey2@mail.usf.edu



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#### IRB Amendment Approved

**To:** Michelle Frey  
**RE:** Amendment 8 for IRB Study #Pro00001693  
Subjective Well-Being of High School Students  
**PI:** Shannon Suldo  
**Link:** [Ame8\\_Pro00001693](#)

You are receiving this notification because the above listed amendment has received Approval by the IRB. To begin your review, navigate to the project workspace by clicking the Link above.

---

**WARNING: DO NOT REPLY.** To ensure a timely response, please do not reply to this email. Direct all correspondence to **Research Integrity & Compliance** either through your project's workspace or the contact information below.

University of South Florida  
Division of Research Integrity & Compliance - Office of Research and Innovation  
3702 Spectrum Blvd Suite 155 - Tampa, FL 33612

Template:\_000 - IRB Amendment: Approved