The Effects of a Violence Prevention Intervention on Prosocial Behavior and Perception of School Safety

Cheon Carlon Graham

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THE EFFECTS OF A VIOLENCE PREVENTION INTERVENTION ON PROSOCIAL BEHAVIOR AND PERCEPTION OF SCHOOL SAFETY

A Dissertation
Submitted to the School of Education
Department of Counseling, Psychology, and Special Education

Duquesne University

In partial fulfillment of the requirements for
the degree of Doctor of Philosophy

By
Cheon C. Graham

December 2012
Copyright By

Cheon C. Graham

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Department of Counseling, Psychology, and Special Education

Dissertation

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School Psychology Doctoral Program

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ABSTRACT

THE EFFECTS OF A VIOLENCE PREVENTION INTERVENTION ON PROSOCIAL BEHAVIOR AND PERCEPTION OF SCHOOL SAFETY

By
Cheon C. Graham

December 2012

Dissertation supervised by Dr. Tammy Hughes

In order for schools to be successful in providing students with developmentally appropriate instruction and social experiences, an atmosphere of safety and protection is required. The recent spike in school shootings over the past 15 years has created a sense of urgency to examine the dynamics of school violence in order to generate and implement effective security measures (Brooks, Schiraldi, & Ziedenberg, 2000). Unlike traditional problem-focused approaches, the positive approach to school violence is preventive, solution-driven, and systemic. The positive approach to violence prevention at school focuses on building a set of social and emotional strengths that are incompatible with antisocial behavior. Recently researchers have focused on determining the positive behaviors that could potentially stop aggressive situations from progressing. These helping behaviors are defined broadly as prosocial behaviors (Cashwell, Skinner, &
Smith, 2001; Goldstein, Carr, Davidson, & Wehr, 1981; Greener, 2000; Leffler & Snow, 2001). Research on child development suggests that one of the most effective ways for school to encourage prosocial behavior is through school-wide programs designed to teach and model social skills. The current study sought to evaluate the effectiveness of a comprehensive school wide prevention program intervention called Be a Safety Kid in kindergarten through third grade students. It also sought to assess the validity and stability over time of the corresponding pretest/post-test measure termed, the S.T.A.R. instrument. Results of a confirmatory factor analysis (CFA) suggested that the three factor structure of the S.T.A.R. instrument remained stable overtime and but inconsistently described the data for the first, second, and third grade instruments. CFA results from the kindergarten S.T.A.R. instrument indicated a poor fit based on the data collected. Repeated measure ANOVA results indicated students showed significant improvement in prosocial knowledge and anticipated ability to demonstrate prosocial behaviors after receiving the Be a Safety Kid curriculum; however, no significant improvement in perception of school safety was observed. Outcomes discussed add to the existing literature of evidence-based practices designed to reduce violence in the school environment.
DEDICATION

This dissertation is dedicated to my daughter, Briyana, for her love and support throughout this journey. From drawing big red circles in my assessment manual as a baby to making me coffee in the Keurig as a second grader while I worked on the final details of this project, her patience and understanding has been remarkable. I would also like to dedicate this document to my parents, Carolyn and Marcel, my sisters, Carla and Maria, and my aunt, Loretta. Their encouragement, love, and consistent support have brought me to where I am today and I am eternally grateful.
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>iv</td>
</tr>
<tr>
<td>Dedication</td>
<td>vi</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>vii</td>
</tr>
<tr>
<td>List of Tables</td>
<td>xv</td>
</tr>
<tr>
<td>CHAPTER 1: INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Definitions</td>
<td>4</td>
</tr>
<tr>
<td>Development of Prosocial Behaviors</td>
<td>5</td>
</tr>
<tr>
<td>Significance of the Problem</td>
<td>9</td>
</tr>
<tr>
<td>Research Questions and Hypotheses</td>
<td>12</td>
</tr>
<tr>
<td>CHAPTER 2: LITERATURE REVIEW</td>
<td>14</td>
</tr>
<tr>
<td>History of Prosocial Behavior</td>
<td>14</td>
</tr>
<tr>
<td>Definition of Prosocial Behavior</td>
<td>20</td>
</tr>
<tr>
<td>Development of Prosocial Behaviors in Children</td>
<td>25</td>
</tr>
<tr>
<td>Moral Processes of Prosocial Behaviors</td>
<td>29</td>
</tr>
<tr>
<td>Perspectives on the Demonstration of Prosocial Behavior</td>
<td>33</td>
</tr>
<tr>
<td>Prosocial Behavior and Reduction of Aggressive Behavior</td>
<td>38</td>
</tr>
<tr>
<td>Prosocial Behavior and School Violence</td>
<td>40</td>
</tr>
<tr>
<td>Assessment</td>
<td>41</td>
</tr>
<tr>
<td>Methods of Intervention</td>
<td>42</td>
</tr>
<tr>
<td>Be a Safety Kid</td>
<td>52</td>
</tr>
<tr>
<td>Conclusions</td>
<td>53</td>
</tr>
</tbody>
</table>
Conclusions .......................................................................................................................... 102
References .......................................................................................................................... 105
Appendix A .......................................................................................................................... 125
Appendix B .......................................................................................................................... 127
Appendix C .......................................................................................................................... 129
Appendix D .......................................................................................................................... 131
Appendix E .......................................................................................................................... 133
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1.</td>
<td>Demographic Data for Schools</td>
<td>70</td>
</tr>
<tr>
<td>Table 2.</td>
<td>Descriptive Statistics for Eliminated Data</td>
<td>76</td>
</tr>
<tr>
<td>Table 3.</td>
<td>Descriptive Statistics</td>
<td>77</td>
</tr>
<tr>
<td>Table 4.</td>
<td>CFA Assumption Statistics</td>
<td>80</td>
</tr>
<tr>
<td>Table 5.</td>
<td>Comparison of CFA Model Fit Indices</td>
<td>85</td>
</tr>
<tr>
<td>Table 6.</td>
<td>Squared Multiple Correlations (First/Second Grade)</td>
<td>86</td>
</tr>
<tr>
<td>Table 7.</td>
<td>Squared Multiple Correlations (Third Grade)</td>
<td>86</td>
</tr>
<tr>
<td>Table 8.</td>
<td>Repeated Measures ANOVA for Knowledge Questions</td>
<td>87</td>
</tr>
<tr>
<td>Table 9.</td>
<td>Repeated Measures ANOVA for Performance Questions</td>
<td>88</td>
</tr>
<tr>
<td>Table 10.</td>
<td>Repeated Measures ANOVA for Safety Questions</td>
<td>90</td>
</tr>
</tbody>
</table>
Chapter 1

Introduction

School violence is an epidemic that has slowly made its way into U.S. society and has generated an alarming wave of concerns about safety issues in the schools. In 2009, over 49 million children were enrolled in public schools nationwide, and an additional 6.35 million people were teachers or other professional administrative and support staff employed at these schools (National Center for Education Statistics, 2011). Research has suggested that school violence is rare (Astor, Benbenishty, Meyer, Marachi, & Rosemond, 2005); however, this rarity does not seem to be the case from the public’s perspective as school violence is often on the front page of the newspaper or broadcasted on multiple television news channels.

The spike in school shootings over the past 15 years has created a sense of urgency to examine the dynamics of school violence in order to generate and implement effective security measures (Brooks, Schiraldi, & Ziedenberg, 2000). Historically, school violence research has focused on student-perpetrated violence occurring on school grounds or at school-related events (Eisenbraun, 2007). Students, however, are not always the perpetrators. In rare instances, teachers, school employees, strangers, former students, gang members, and even parents have become violent during school-related functions (Crews, 2007). Students are also not the only potential victims when it comes to school violence. It has been reported that teachers may be three times more likely to be victims of violent crimes at school than are the students (Kondrasuk, Greene, Waggoner, Edwards, & Nayak-Rhodes, 2005).
Despite incidents of targeted school violence, schools continue to be one of the safest places for children and adolescents (Burns, Dean, & Jacob-Timm, 2001; Mulvey & Cauffman, 2001; National School Safety Center, 2010). The National School Safety Center (2010a) reported that school-aged children are 50 times more likely to be the victims of homicide outside of school than inside of school. Why then is it critical to study targeted school violence if schools are one of the safest places for children and adolescents? Targeted school violence warrants further attention and examination because recent lethal incidents in U.S. schools have contaminated the learning environment with fear (Langman, 2009). According to survey research conducted over the past 15 years, public perception of school dangerousness is disproportionately higher than crime statistics indicate (Hyman & Perone, 1998; National School Safety Center, 2010; Poland & McCormick, 1999). Researchers have suggested that people fear school shootings in particular, because no school is immune to such violent incidents (Palermo & Ross, 1999; Poland & McCormick, 1999).

In order for schools to be successful in providing students with developmentally appropriate instruction and social experiences, an atmosphere of safety and protection is required. Schools should be a safe place for teaching and learning, and are supposed to be free from crime and violence. Many schools have responded to public concern by implementing ineffective and often invasive security measures such as surveillance equipment, metal detectors, uniform codes, and random locker searches (Eisenbraun, 2007). Research has indicated, however, that such security remedies have negative effects on the school's atmosphere. Hyman and Perone (1998) suggested that these security measures lead to emotional damage, distrust of authority, and negative student morale.
This false sense of security has challenged advocates of school safety to identify and generate more effective strategies in preventing targeted school violence.

Unlike traditional problem-focused approaches, the positive approach to school violence is preventive, solution-driven, and systemic in its efforts. The positive approach to violence prevention at school focuses on building a set of social and emotional strengths that are incompatible with antisocial behavior. These include developing emotional literacy skills, such as empathy and respect for the rights of others; boosting resiliency factors, such as self-esteem and academic success; and establishing a high degree of “connectedness” between students and their families, peers, schools, and communities (Cowen, Wyman, Work, & Iker, 1995; Elias et al., 1994; Weissberg & Greenberg, 1998). Its goal is to enhance the overall well-being of students and others in the context of schooling. Through thoughtful planning and the establishment of effective school violence prevention programs that focus on the development of prosocial behavior, opportunities to avert crises are increased and schools are better prepared for when they do happen. Preliminary research has found intervention programs to be effective in increasing social skills knowledge, improving social behavior, and preventing declines in social behavior (Hudley & Graham, 1993; Reid, Eddy, Bank, & Fetrow, 1994; Slaby & Guerra, 1988).

While it may not be possible to prevent all violence from occurring, schools can work to reduce the likelihood of its occurrence. Research on child development suggests that one of the most effective ways for school to encourage prosocial behavior is through school-wide programs designed to teach and model social skills. For preventive and intervention purposes, it is important to identify and expand upon the subgroup of
children that display prosocial behavior in the school environment for two reasons: 1) schools can increase the number of reports regarding dangerous and potentially dangerous situations to find and address problems early and 2) children who hold these skills show greater adjustment (Barr & Higgins-D’Alessandro, 2007).

Definitions

Prosocial behavior has been defined as a series of voluntary actions that are intended to assist or benefit another, and indicate a concern for the well-being of another person (Findlay, Girardi, & Copelan, 2006; Hay, 1994; Eisenberg, Guthrie, Murphy, Shepard, Cumberland, & Carlo, 1999; Kidron & Fleischmann, 2006; Weir & Duveen, 1981). It includes behaviors such as assisting, sharing, comforting, and cooperating, as well as responding to signs of suffering, need, or danger in another person or animal, being kind and considerate, protecting someone from harm, rescuing someone from danger, and feeling empathy and sympathy (Radke-Yarrow & Zahn-Waxler, 1986). Prosocial behaviors are often performed even if there is no sacrifice or benefit to the individual. Often considered to be a sign of an altruistic personality, prosocial behaviors are also intrinsically motivated by concern for others or internalized goals (Hay & Pawlby, 2003; Hay, 1994). Aspects of temperament or personality are common predictors of individual differences in prosocial behaviors (Eisenberg, Fabes, Karbon, Murphy, Wosinski, Polazzi, Carlo, & Juhnke, 1996), which overlap and coincide with stabilized and inherent personality traits such as empathy, sympathy, perspective taking, and moral reasoning (Eisenberg, Guthrie, Cumberland, Murphy, Shepard, Zhou, & Carlo, 2002). Eisenberg & Mussen (1989) suggest that individual differences in children’s emotionality, regulation, and social competence are related to prosocial responding. This
is in contrast to the behavior that is based on the expectation of concrete or social rewards, or the desire to avoid punishment or sanctions (McKinley & Carlo, 2007; Eisenberg, Pasternack, Cameron, & Tryon, 1984). Thus, it is critical to study the development and intercorrelational personality traits of prosocial behaviors as they can serve as an aid in interrupting an aggressive or potentially aggressive situation.

Development of Prosocial Behaviors

The study of prosocial behavior and its relationship to child development reportedly began with William McDougall and Lois Murphy in the early 1900’s and has been subjected to public examination through accounts of the Genovese syndrome – otherwise known as the bystander effect. The bystander effect is the social phenomenon that refers to situations where individuals do not offer help to the victim in an emergency situation when other people are present. The mere presence of other bystanders greatly decreases intervention because as the number of bystanders increases, any given bystander is less likely to interpret the incident as a problem, and less likely to assume responsibility for taking action. Through extensive media coverage, prosocial behavior became a significant research topic; however, these behaviors were not matched with an underlying theory until Piaget and Kohlberg proposed the processes of developing moral judgments. Piaget, the advocate of a cognitive-developmental theory of moral judgment, reasoned that moral judgments advance in stages related to changes in the child’s general cognitive development (Piaget, 1965). His two-stage theory describes how children judge actions and results of those actions based on their perceptions of the actor’s intentions. Prosocial behaviors are rooted in a moral conflict, or emotional center, and also have a cognitive base that allows these emotions to be categorized into more specific behaviors.
Piaget recognized the role of cognition as the structure for development, and the role of emotion as the fuel for action (Eisenberg, Zhou, & Koller, 2001), noting that prosocial behaviors are exhibited after an interaction between thoughts and feelings and recognizing the importance of studying the interplay of these factors.

**Acquiring Knowledge and Judgment**

Piaget set the foundation for studying prosocial behaviors. He described prosocial actions as having a basis in emotional development and also theorized that prosocial actions involve the assessment of a situation through a moral judgment decision combined with emotional awareness. Based on this description, Kohlberg’s theory extended, modified, and refined Piaget’s theory. Kohlberg’s conceptualization preserved the nature of the relationship between moral development and prosocial behavior and subdivided Piaget’s two stages into six categories that were based upon whether the child chooses an act, as well as the reasons and justifications for those choices (Kohlberg, 1984). In this way, a child’s cognitive development provides a framework for defining prosocial behavior, and imposes a limit on antisocial behavior that is in line with, or explained by, their moral judgments (Eisenberg & Mussen, 1989). The perspectives of Piaget and Kohlberg have been used to confirm the existence of proactive and altruistic behaviors (Crick, 1996; Eisenberg & Fabes, 1998; Hay, 1994; Radke-Yarrow & Zahn-Waxler, 1986). Although proactive and altruistic behaviors do not define prosocial behavior on the basis of internal motives, they do support the conceptualization of the relationship between emotion and cognition on the development of observable behaviors (Eisenberg, 1982). Further, the beliefs of Piaget and Kohlberg not only emphasize the
development of emotion and cognition, but also the impact of socialization and external environment on the expression of prosocial behavior.

Socialization pressures and developmental maturation undermine the changes that take place in prosocial behavior throughout development. Individual characteristics of children that have been associated with physical aggression and prosocial behavior range from age and sex to physical, emotional, cognitive, and social dimensions (Tremblay & LeMarquand, 2001). It is likely that some factors influence prosocial development directly, whereas other factors influence the related aspects of early development that underlie overt prosocial behavior. As indicated by Yarrow & Waxler (1976), prosocial behavior begins to develop at an early age. In early childhood, children develop the prerequisite skills for prosocial behaviors by identifying and experiencing their own emotions and the emotions others. Then, during the later childhood period, children continue to alter and redefine their understanding of emotional competence and prosocial behavior. Children progress developmentally from a belief in basic empathy to having different emotions and valence toward the same object or person at around the age of 11 years old (Hay & Cook, 2007). Therefore, during the middle to late elementary school years, children become more comprehensive in their emotions and helping behaviors toward other individuals by incorporating more interpersonal, emotional, and cognitive processes to effectively interpret a situation. As children grow older, they are more adept to understanding the seriousness of a potentially violent situation and the positive impact that can come from a prosocial intervention, thus increasing the frequency of performing appropriate prosocial behaviors. However, the motive underlying children’s prosocial behaviors clearly change with age. Some of the potential reasons for these age-related
trends include the enrichment of role taking and empathic capabilities with greater maturity, higher levels of moral reasoning, increased skill in helping, and more frequent repeated exposures to socialization experiences that enhance prosocial responding (Eisenberg & Mussen, 1989). The prosocial behaviors of the very young thus attest to the early beginnings and consistency of the human capacities for affiliation, cooperation, altruism, enlightened self-interest, and understanding of social norms, all of which make prosocial behavior possible (Hay & Cook, 2007).

**Skill Knowledge**

The prosocial literature also identifies skill knowledge as an important aspect of engagement in prosocial behavior. Children who report higher levels of perceived value and comfort in their knowledge of prosocial skills are more willing to engage in prosocial behaviors and more likely to engage in a greater numbers of actual behaviors, when measured cross-sectionally or over time (Banyard, 2008; Barr & Higgins-D’Alessandro, 2007). Also, children are more likely to act if they know what to do and feel that they possess the necessary resources (Stueve et al., 2006; Kidron & Fleischman, 2006). Most importantly for the performing of these behaviors is the role of the wider social context factors in the development of prosocial behaviors across the lifespan as seen through the peer and gender implications on development (Carlo and Randall, 2001).

**Safety**

Incidents of violence not only affect those students directly involved, but also disrupt the school climate, bystanders, and the surrounding community (Henry, 2000). Previous literature on the topic has identified possible sources of students feeling unsafe in school, including bullying (Astor, Meyer, & Pitner, 2001; Berthold & Hoover, 2000;
Coloroso, 2004; Simanton, Burthwick, & Hoover, 2000; Slee, 1994; Stockdale et al., 2002), relational aggression (Raskauskas & Stoltz, 2004; Yoon, Barton, & Taiariol, 2004), drugs (Colvin, Kameenui, & Sugai, 1993; Kadel, Watkins, Follman, & Hammond, 1999), and gangs (Thompkins, 2000). Experiencing violent situations, either as a participant or bystander, decreases students’ learning and achievement and results in decreased feelings of safety (Williams & Cornell, 2006).

The need to ensure school safety was nationally recognized with the implementation of the Safe Schools Act of 1994 (P.L. 103-227). In response, a number of external security measures have been implemented in an effort to increase safety in the schools; however, in order to reduce the extent of violence in the schools and increase students’ sense of safety, a more comprehensive approach will be required. This type of approach will include not only security measures, but intervention programs that affect knowledge, attitudes, and behavior as well (de Anda, 1999).

**Significance of the Problem**

Research has shown that children who engage in aggression early in life are likely to continue their aggressive behavior throughout the life course (Hester, Baltodano, Gable, & Tonelson, 2003). Early aggression is strongly associated with later criminal behavior and deviant peer relations, poor school achievement, school dropout, unemployment (Loeber and Farrington, 1998; Stouthamer-Loeber et al., 2002). Also, children who are exposed to aggression at school are at risk for behavioral problems, mood disorders, peer rejection, and criminal behavior (Hay & Pawlby, 2003; Scourfield, John, Martin, & McGuffin, 2004; Haemaelaeinen & Pulkinnen, 1996). In contrast, prosocial tendencies buffer the negative impact of highly aggressive children against
long-term unemployment in adulthood (Kokko, Tremblay, Lacourse, Nagin, & Vitaro, 2006). Educators are charged with keeping our schools safe, and as with most challenges in education, there are no simple solutions. Improving school safety is a continuous, multifaceted effort that requires commitment and participation from all stakeholders.

School districts have recently begun to move towards implementing curriculums in order to target violence prevention. School-wide prevention programs complement the overall mission of schools and are designed to promote academic excellence, socialization, citizenship, and healthy lives for children. To create a positive learning environment for students, it is critical to develop and preserve prosocial behaviors in the youth, resulting in diminished violence in the school environment. Thus, it is imperative for all stakeholders involved to understand the prevalence of violence as well as a wide range of aggressive behaviors common for today’s schools in order to plan effective preventative methods and intervention programs designed to ensure a safe and productive learning environment.

The scarcity of well-researched and evaluated programs has made it difficult to truly assess the effectiveness of intervention programs on reducing violence in the school environment. Properly evaluated programs showing the effectiveness of curriculum based interventions will be essential for school systems as they create policy decisions around the selection and use of school violence prevention and prosocial promotion programs. The Be a Safety Kid curriculum is one recently developed violence prevention program designed to increase prosocial behaviors in children. This developmentally informed curriculum is tailored to meet the needs of children across Kindergarten through 8th grade with a focus on increased teacher-child communications. This school-wide curriculum is
based on the ideals of “Responsible Reporting” or appropriate telling of information when a dangerous situation is apparent or known to students. Because students often perform aggressive acts away from adults, peer reporting is often the best way to prevent aggressive acts from occurring (Cashwell, Skinner, & Smith, 2001). A pilot study was completed by Martin (2010) to determine the effectiveness of the Be a Safety Kid curriculum with 7th and 8th grade students from a suburban school district in Pennsylvania. Based on those results, the students who received the curriculum did not significantly produce improvement in knowledge or hypothetical ability to demonstrate prosocial behavior, warranting further research into its effectiveness with younger students.

The purpose of the current study is to examine the effectiveness and impact of the Be a Safety Kid curriculum with kindergarten through third grade students. The Be a Safety Kid curriculum provides direct instruction by local school personnel to children regarding appropriate and inappropriate behavioral conduct at school, how to use prosocial behaviors to resolve conflict, and age-appropriate methods for reporting safety concerns. The current study will contribute to the literature base by helping to clarify which prosocial behaviors can be taught or increased through the implementation of a school violence prevention curriculum and determining whether such curriculums increase the perception of school safety in students. A primary assumption of this curriculum is that suppressing incidental antisocial behavior alone is not enough for educators to be successful at preventing and remedying aggressive acts at school. Rather, educators must develop programs that encourage incidental prosocial behaviors within the natural school setting (Cashwell, Skinner, & Smith, 2001). The Be a Safety Kid
curriculum expands on these foundations by providing instruction to children (e.g., knowledge, skills and dispositions) about appropriate prosocial behaviors by including school personnel support in order to enhance students’ belief in their ability to engage in individual prosocial behaviors.

**Research Questions & Hypotheses**

The current study seeks to evaluate the effectiveness of a comprehensive school wide prevention program intervention called *Be a Safety Kid*. Incorporated with a pre-test/post-test measure termed, the S.T.A.R. instrument, the *Be a Safety Kid* curriculum instructs students in the knowledge, skill and dispositional characteristics needed to engage in prosocial behaviors and actions in order to prevent and report aggression in schools. Since these are the first data collected for elementary school students, this is considered a pilot test for kindergarten, first, second, and third grade students. Results will be used to inform the impact of a school-wide intervention, program feasibility, and effectiveness in a school environment. More specifically, the effects of the *Be a Safety Kid* curriculum on prosocial behaviors and the perception of school safety will be measured. A secondary aim of this study will be to identify decision-making and frequency of prosocial behaviors that may support or dissuade the use of violence prevention curriculums. The relationships among the outcomes for participants will also examined, specifically differences between districts.

**Research Question 1**

Is the younger version of the S.T.A.R. instrument a valid assessment tool for evaluating the knowledge and performance of prosocial behaviors, as well as perception of school safety?
**Hypothesis 1:** The S.T.A.R. instrument will align with the constructs of knowledge, production of behaviors, and perception of school safety as outlined in the creation of the instrument.

**Research Question 2**
Does the *Be a Safety Kid* curriculum influence knowledge of Kindergarten, 1\textsuperscript{st}, 2\textsuperscript{nd}, and 3\textsuperscript{rd} grade students in eight schools across the nation as defined as “Responsible Reporting” and the core concepts of the curriculum?

**Hypothesis 1.** It is expected that Kindergarten, 1\textsuperscript{st}, 2\textsuperscript{nd}, and 3\textsuperscript{rd} grade students who participated in the *Be a Safety Kid* curriculum will exhibit an increase in knowledge as measured by the S.T.A.R. instrument.

**Research Question 3**
Does the *Be a Safety Kid* curriculum influence anticipated performance of prosocial behaviors in Kindergarten, 1\textsuperscript{st}, 2\textsuperscript{nd}, and 3\textsuperscript{rd} grade students?

**Hypothesis 1.** It is expected that the Kindergarten, 1\textsuperscript{st}, 2\textsuperscript{nd}, and 3\textsuperscript{rd} grade students who participated in the *Be a Safety Kid* curriculum will exhibit an increase in performance of prosocial behaviors as measured by the S.T.A.R. instrument.

**Research Question 4**
Does the *Be a Safety Kid* curriculum influence the perception of school safety in Kindergarten, 1\textsuperscript{st}, 2\textsuperscript{nd}, and 3\textsuperscript{rd} grade students?

**Hypothesis 1.** It is expected that there will be an increase in the number of Kindergarten, 1\textsuperscript{st}, 2\textsuperscript{nd}, and 3\textsuperscript{rd} grade students who report feeling safe in their school environment as measured by the S.T.A.R. instrument after participating in the *Be a Safety Kid* curriculum.
CHAPTER II
LITERATURE REVIEW

In order to deal with problems in their personal and academic lives, children must learn strategies that can provide them with affective coping mechanisms. Specifically, children who use more prosocial means of solving peer conflicts give more effective and relationship-enhancing solutions to problems and tend to be persuasive rather than aggressive when dealing with others (Mayeux & Cillessen, 2003). Prosocial behaviors are those behaviors performed with the intention of benefiting others. These behaviors are often considered the basis of human relationships. The purpose of this chapter is to describe the research on prosocial behavior, starting with historical studies and concluding with modern research. Through this process, a variety of developmental processes along with underlying foundational theories will be discussed in regards to their relationship to future delinquent or prosocial behavior.

History of Prosocial Behavior

Attention to prosocial behavior in psychology originated with William McDougall (1908), who argued that prosocial behavior is the result of tender emotions created by parental instinct. It resurfaced again in 1932 when Lois Murphy began to study sympathy and positive social responses in children based on McDougall’s premises. Murphy’s work focused on the positive behaviors of children, specifically those that are proactive and helping in nature (Murphy, 1937). Additionally, the range of responses that now comprise the current prosocial rubric were originally included in Murphy’s definition. With this research began the exploration of helping behaviors and the study of proactive behaviors of individuals and the reasoning for these actions;
however, until the occurrence of a tragic event in the 1960’s, most of the research in this area was focused only on sympathy, a minor subset of behaviors in the prosocial range.

In the 1960s, the significance of helping behaviors and their psychological motivations became a major interest. After the brutal murder of Catherine “Kitty” Genovese in 1964, researchers began to examine reasons for individual’s prosocial behaviors in emergency situations (Penner, Dovidio, Piliavin, & Schroeder, 2005). During this tragic incident, a young New York woman was stabbed to death near her home with neighbors listening but completely unresponsive. This social psychology phenomenon, known as the bystander effect or Genovese syndrome, sparked worldwide media coverage and scientific examination of the events (Radke-Yarrow, Zahn-Waxler, Barrett, Darby, King, Pickett, & Smith, 1976). Because of the extensive coverage and intense reaction from the general public regarding the incident, research began to extend into similar fields of study including childhood helping behaviors and children’s inclinations to intervene on behalf of another person (Darley & Latané, 1968).

Through the 1960s and 1970s, researchers explored altruistic behaviors using the theoretical views of Kohlberg and Piaget regarding internal moral conflicts (Kohlberg, 1984; Piaget, 1965). Piaget introduced a cognitive-developmental theory of moral judgment suggesting that moral judgments advance in stages related to changes in the child’s general cognitive development. This theory proposed the existence of two broad stages of moral development, an early stage called moral realism and a more mature stage referred to as autonomous morality, or morality of reciprocity (Piaget, 1965). In the moral realism stage, the child develops concern and respect for rules. The rightness or wrongness of an act is judged on the basis of the magnitude of its consequences and the
extent to which it conforms exactly to established rules. In the autonomous morality stage, the child realizes that social rules are established and maintained through arbitrary agreements that can be questioned and changed (Piaget, 1965; Bar-Tal, 1976). The child begins to judge acts and the results of behavior on the basis of perceived intentions. Piaget argued that cognition provides the structure for development, while emotion supplies the fuel or energetic component (Eisenberg, Zhou, & Koller, 2001).

Piaget’s theory also defined the developmental ages at which certain moral development processes occur. Specifically, he reasoned that children younger than 12 years old think about moral dilemmas and rules as fixed and absolute. Children at this stage have an engrained belief that rules are handed down by adults or by God and that one cannot change them (Piaget, 1965). On the other hand, a child who is older than 12 has a view that is more relativistic. He or she understands that rules are not sacred or absolute, and that it is okay to change rules if everyone agrees. At this stage, children recognize that rules are devices used by humans to get along cooperatively (Bar-Tal, 1976). Between 10 and 12 years old, approximately the same developmental time period when a child begins to enter the general stage of autonomous morality, one’s moral thinking undergoes a shift aligning with Piaget’s theoretical orientations. In particular, younger children base their moral judgments more on consequences, whereas older children base their judgments on intentions (Piaget, 1965). According to Piaget, these behaviors are rooted in a moral conflict, or an emotional center, and a cognitive base that allows these emotions to be categorized into more specific behaviors. Therefore, the cognition provides the foundation of expression and the experience of emotion signals when determining whether the child or other people need to modify or continue a goal-
directed behavior. Such information can shape the child’s own behavior (Chesebrough, King, Gullotta, & Bloom, 2004); therefore, to appropriately study the motives behind prosocial behavior, it is crucial to assess children at the appropriate developmental level, specifically after the transition to autonomous morality. At this point, children can more accurately describe their moral reasoning without regard for the rigidity of societal rules and they can judge acts and the results of behavior on the basis of perceived intentions.

Like Piaget, Kohlberg conceptualized children’s initial understanding of morality as having to do with rules and consequences; however, Kohlberg’s theory offered a more sophisticated understanding of childhood morality, in a six-stage model. The stages include obedience and punishment driven, self-interest driven, interpersonal accord and conformity driven, authority and social order obedience driven, social contract driven, and universal ethical principles driven (Kohlberg, 1984). Each category is based not only upon whether the child chooses an obedient or need-saving act, but also on the reasons and justifications for those choices (Kohlberg, 1984). The first two stages are combined to create the pre-conventional stage, most common in early childhood. This stage is exhibited by limited interest in the needs of others with a focus on the direct consequences of their actions on themselves. The conventional stage is demonstrated in early to middle adolescence and is created from stages three and four. It involves comparing actions against society’s views and expectations and the importance of maintaining a functioning society by moral reasoning that transcends individual needs. Finally, the post-conventional stage, comprised of stages 5 and 6, is apparent in adulthood. In the post-conventional stage, moral reasoning is based on universal ethical principles and the individual’s view may take precedence over society’s view (Kohlberg,
Moral reasoning and judgment, which are manifestations of intelligence, grow and change as other cognitive functions do. The stages of children’s cognitive development thus provide a framework for, and impose a limit on, the level of their moral judgments (Eisenberg & Mussen, 1989). Using Kohlberg’s theory of moral development stages, prosocial behavior would be most useful when studied at the conventional level, where children and young adolescents have a vested interest in the needs of others that does not have a direct bearing on their individual needs. In this context, prosocial behaviors are examined to elicit reasoning about actions that potentially benefit another at a cost to the self and, as a result, may bear a special relationship to prosocial behavior (Eisenberg-Berg & Hand, 1979). For example, children may be more likely to intervene if they feel it would be beneficial to them, either internally or externally. This internal benefit would resolve the moral conflict described by Kohlberg and Piaget about the innate need to help another in distress.

The theoretical groundwork of Kohlberg and Piaget created the foundation for the beliefs concerning prosocial behaviors. Both theorists described a cognitive and emotional internal desire of individuals to help others, confirming the existence of not only sympathetic traits, but those that are proactive and altruistic as well (Crick, 1996; Eisenberg & Fabes, 1998; Hay, 1994; Radke-Yarrow & Zahn-Waxler, 1986). Nevertheless, not all theorists aligned with a belief in innate processes. Theorists and researchers who adhere to a social learning perspective tend to emphasize overt observable behaviors, and frequently do not define altruism on the basis of internal motives or cognitive processes (Eisenberg, 1982). These theorists frequently define a broad range of positive behaviors as being altruistic, and fail to differentiate between the
various positive behaviors (Carlo & Randall, 2001; Chesebrough, King, Gullotta, & Bloom, 2004; Findlay, Girardi, & Coplan, 2006; Hay, 1994). However, researchers guided by a cognitive-developmental approach focus on the cognitive-motivational elements of an individual’s behavior, and define altruism with stringent criteria related to the structure of the actor’s cognitive motives (Eisenberg, 1982; Kidron & Fleischman, 2006; Penner, Dovidio, Piliavin, & Schroeder, 2005). These different theories were quantifiable based on accurate cognitions of events and an underlying emotional need (Mussen & Eisenberg-Berg, 1977).

Over time, a shift began to occur and social scientists became more interested in studying behaviors that were considered to be opposite of antisocial behaviors. Building on the works of Piaget and Kohlberg, research during the mid 1970s through the early 1980s investigated one’s tendency to help in emergency and non-emergency situations (Penner, Dovidio, Piliavin, & Schroeder, 2005). Specifically, researchers hoped to take the theoretical foundations set by Piaget and Kohlberg and relate them to real-life situations. Additionally, they sought to investigate whether the cognitions of helping behaviors would change based on the emergency of the situation. The term prosocial wasn’t used until it was created by Lauren Wispé in 1972 (Wispé, 1972). Prior to this, Latané and Darley (1970) developed a decision model of bystander intervention suggesting that whether or not a person renders aid depends upon the outcomes of a series of prior decisions. These steps involve recognizing whether the individual requires assistance, deciding to take personal responsibility, and deciding how to help (Latané & Darley, 1970; Penner, Dovidio, Piliavin, & Schroeder, 2005). With Wispé’s categorization and the work of Latané and Darley, the defining traits of prosocial
behavior began to emerge as a variety of acts such as helping, aiding, sharing, donating, or assisting; those behaviors that could be seen as having positive social consequences (Bar-Tal, 1976; Kokko, Tremblay, Lacourse, Nagin, & Vitaro, 2006).

**Definition of Prosocial Behavior**

Theorists have yet to agree on a set definition for prosocial behavior that defines research in the field. However, there is a consensus that prosocial behavior is a broad and multidimensional construct used to describe behaviors that are positively responsive to the needs and welfare others’ (Radke-Yarrow & Zahn-Waxler, 1986). As described by early theorists such as Darley, Latané, & Wispé, prosocial behavior can have an internal motivation which may be difficult to quantify for research purposes given the context. It is difficult to operationalize a variety of behaviors that focus on a concern for others and an adherence to the norms of social responsibility (Zeldin, Savin-Williams, & Small, 1984). Previously, research has defined prosocial behavior only as one overarching construct, not taking into account the many factors involved in taking action in a situation. Specifically, prosocial behavior appears to be a combination definition of sharing, helping, volunteering, and altruistic behavior (Greener, 2000).

Behaviors used to interrupt an aggressive or potentially aggressive situation have been defined in the literature as bystander or prosocial behaviors. This description aligns with most definitions describing a behavior intended to assist or benefit others (Findlay, Girardi, & Copelan, 2006; Hay, 1994; Eisenberg, Guthrie, Murphy, Shepard, Cumberland, & Carlo, 1999; Kidron & Fleischman, 2006). These actions include any behaviors with the purpose of helping another even if there is no sacrifice or benefit to the individual. Altruism is the belief that acting for the benefit of others is right and good.
It is commonly viewed as intrinsically motivated, voluntary behavior intended to benefit another, that is behavior motivated by concern for others or by internalized values, goals, and self-rewards rather than by the expectation of concrete or social rewards, or the desire to avoid punishment or sanctions (McKinley & Carlo, 2007; Eisenberg, Pasternack, Cameron, & Tryon, 1984). Altruism is essentially the essence of prosocial behavior. What determines whether or not these and other prosocial actions are considered altruistic is the underlying motive of the behavior (Eisenberg & Mussen, 1989). Because of its intrinsically motivated basis to benefit another person without regard for personal consequence, altruism is considered the foundation for prosocial behavior. Additionally, internal processes, such as sympathy, empathy, and moral cognitions, are believed to motivate other-oriented or prosocial behavior (Eisenberg, Guthrie, Cumberland, Murphy, Shepard, Zhou, & Carlo, 2002). These additional traits increase the multitude of prosocial behaviors used to describe the basic need to help another individual.

Through the study of 249 college students enrolled in undergraduate psychology courses at a Midwestern state university, Carlo & Randall (2002) developed one of the most widely used studies regarding the examination of prosocial behaviors. To study the correlates and structure of prosocial behaviors in late adolescents, the Prosocial Tendencies Measure (PTM) and the Prosocial Moral Reasoning (PROM-R) were administered to 104 males and 145 females followed by a consequent factor analysis. Based on the findings, prosocial behavior was divided into six categories: altruistic (voluntary helping motivated primarily by the concern for the needs and welfare of another), public (in front of others and self-interested), anonymous (actor remains
unknown), dire (in a crisis), emotional (in response to another person’s emotion), and compliant (when requested) behaviors (Barr & Higgins-Alessandro, 2007). Although this research supports the notion of differentiated forms of helping, these designations of prosocial behavior lack a more detailed descriptive analysis of behaviors and only tap a limited range of prosocial behaviors that can essentially be observed. At a descriptive level, prosocial behaviors involve responding to signs of suffering, need, or danger in another person or animal, such as, assisting, sharing, being kind and considerate, comforting, cooperating, protecting someone from harm, rescuing someone from danger, and feeling empathy and sympathy (Radke-Yarrow & Zahn-Waxler, 1986). These specific observable behaviors help identify specific actions that can correspond with prosocial behaviors. Through the works of Carlo & Randall and others such as Boxer, Tisak, and Goldstein (2002), attempts have been made to describe prosocial behavior by quantifiable means; however, there are still significant limitations in current research. Specifically, many studies have focused on behaviors based only on external environmental cues with samples limited to late adolescents, and as a result, the definitions that ensue are potentially limited to certain behaviors that can only be used in specific situations.

To account for some of the gaps in the research, definitions of prosocial behavior have been expanded to include behaviors that are observable in more conventional situations. For example, Iannotti (1985) and Jackson & Tisak (2001) measured delineated prosocial behavior using the four classifying categories of comforting, cooperating, helping, and sharing. These categories broaden the construct of prosocial behavior and focus less on external events and more on internal motives. This model also accounts for
more types of behaviors and represents behaviors seen in multiple environments, including the school. In the study by Jackson and Tisak (2001), students from working and middle class families were recruited from public schools located in the Midwestern United States. The participants were a group of 83 children between 7 and 12 years of age who were asked to read a series of prosocial-related stories and complete self and peer evaluation. Based on the results, significant differences were found by type of prosocial behavior and by age, and also an interaction between variables. This study is important because it helped provide a foundation for a more generalized definition of prosocial behavior by classifying each of the four categories. Helping behaviors are responses to people who have incurred unintentional negative consequences. Sharing involves giving up one’s own resources to benefit another. Cooperating entails individuals coordinating each of their actions to obtain a specific goal. Finally, comforting describes actions taken to improve the overall mood of another person (Jackson & Tisak, 2001). It is important to study helping, sharing, cooperating, and comforting because they represent prosocial behaviors that are within the realm of young children’s experiences, a critical component of assessing young children’s social thinking (Tisak, 1995). However, using a categorization of four major types of behavior has significant limitations such as failing to indentify why children cognitively choose any of the behaviors in the four categories and not differentiating between developmental age groups. The definition developed may also be too broadly defined with significant overlap between the designations, and a lack of focus on external cues. Despite these limitations, the categorization helps provide an extensive comprehensive definition of different behaviors that can be quantified.
Similarly, Hay & Cook (2007) attempted to define prosocial behaviors using three strands characterized as feeling for another, working with another, and ministering to another. These three classifications closely aligned with previous research though with distinct differences. Feeling for another included friendliness, affection, and empathic concern; working with another involved cooperating to solve problems and meet mutual goals, sharing resources, and helping another accomplish tasks; and ministering to another was defined as nurturing, comforting, providing resources required by another, and generally responding to another’s needs and wishes (Hay & Cook, 2007). Again, there are limitations to this categorization as well. When a broad construct of behaviors is split into only three groups, it makes the behaviors difficult to quantify and creates a challenge to define specific behaviors that correspond with each strand. In spite of this, researchers continued to search for more refined definitions.

In an attempt to further define the foundation of prosocial behavior, Penner, Dovidio, Piliavin, & Schroeder (2005) sought to organize and understand these behaviors from a multilevel perspective. They conducted a literature review of prosocial behavior at the micro, meso, and macro levels and verified a collection of traits that form a prosocial personality which is consistently related to a broad range of prosocial behaviors. These traits were combined to form two domains. The first domain included prosocial thoughts and feelings, such as a sense of responsibility and a tendency to experience cognitive and affective empathy, and the second factor was the self-perception that one is a helpful and competent individual. As previously indicated, reducing the definition to only two types may be too general for prosocial behavior and fails to identify specific behavioral traits. Also, it is unclear whether these attributes lead to prosocial responses (Penner, Dovidio,
Although further research is needed on the categorization of prosocial behaviors, the importance and implications of prosocial actions is clear. At this time, the proposed definition of prosocial behavior is mostly theoretical as researchers are unable to verify the true thoughts and feelings of the investigated subjects; therefore, future empirical studies should attempt to control the necessary variables as much as and strive to integrate an understanding of how cognitive, neurological, and genetic processes work together to contribute to the prosocial disposition.

**Development of Prosocial Behaviors in Children**

Small unrepresentative samples and cross-sectional comparisons focused on responses to distress or informant ratings have somewhat limited the empirical support for early development of prosocial behavior (Hay & Cook, 2007). Many of the studies lack adequate statistical power to discern clear developmental trends in the full range of prosocial behavior; however, there have been broad generalized conclusions drawn from these contradictory studies, confirming the belief that prosocial behaviors are central to the development of a child’s social competence.

Yarrow & Waxler (1976) proposed that prosocial behavior develops at a very early age. They believed that children 1-2 years old often respond to others’ emotional and physical distress. Infants under the age of 12 months typically show little reaction to the distress of others; however, children who are 12-18 months old frequently react with agitation or sustained attention. By 18 months of age, children often attempt to comfort others who are suffering, and by 24 months they frequently respond by bringing objects to the distressed person, verbally sympathizing, and making suggestions (Eisenberg &
Mussen, 1989). Toddlers have relatively few opportunities to respond to other people’s needs given that they spend much of their time in independent play; however, before the age of 2, children display prosocial actions with their parents such as helping and comforting (Rheingold, 1982). In the first two years of life, prosocial activities are present but relatively infrequent (Hay & Cook, 2007).

From 2 years of age on, children are interested in emotions. As they enter preschool age, most children can infer basic emotions from expressions or situations and throughout the rest of the preschool period, children come to understand many aspects of the expression and situational elicitation of basic emotions. They gradually come to differentiate among the negative emotions of self and other. By the end of this developmental period, children begin to understand the complex dimensions of emotional experiences (Chesebrough, King, Gullotta, & Bloom, 2004).

Research suggests that children start to differentially attribute emotions to self and others between ages 4 and 5 years. By the end of the preschool period, children are able to identify basic emotional expressions and situations and can talk meaningfully about their own emotions and the emotions of others’ (Roberts & Strayer, 1996). This period is also a time when children develop a theory of other persons’ minds and can differentiate between the perspectives of self and other (Malti, Gummerum, & Buchmann, 2007). At an early age, children develop the pre-requisite skills to perform prosocial behaviors by being able to identify and experience their own and other’s emotions. During the later childhood period, children continue to alter and re-define their understanding of emotional competence and prosocial behavior. At around 11 years of age, children have developed from a belief in basic empathy to having different emotions and valence
toward the same object or person (Hay & Cook, 2007). Therefore, during the middle elementary school years, children become more comprehensive in their emotions and helping behaviors toward other individuals and begin to incorporate more interpersonal, emotional, and cognitive processes to effectively interpret a situation.

It has been demonstrated by some studies that prosocial behaviors increase in kindergarten, peak during the middle elementary school years, and then decline to their lowest point in early adolescence, followed by a rise again in early adulthood; however, other studies show different developmental paths for different categories of prosocial behavior (Midlarsky & Hannah, 1985; Malti, Gummerum, & Buchmann, 2007). Such inferences may be attributed to children’s increasing awareness of the social cues governing prosocial behavior, an increased capacity to regulate their emotions and to find alternative ways of responding besides distress, or a greater ability to pursue self-interests, in turn, diminishing the need for cooperation and generosity with others at all times (Hay, 1994). Logically, one would expect young children who interpret and react to the emotional states and needs of others to share more than children who center only on their own needs (Eisenberg-Berg & Hand, 1979). This concept was tested by Eisenberg-Berg & Hand (1979) in a study using 35 children aged 48-63 months old at a university preschool where a majority of the children were Caucasian and from middle and upper-middle class families. Based on information collected from observations and stories containing moral dilemmas, a relationship was found between reasoning about prosocial conflict and prosocial behavior in a naturalistic setting (Eisenberg-Berg & Hand, 1979). Specifically, children who are more aware of the needs of others are more willing to demonstrate prosocial behaviors.
The development of prosocial behavior has been shown to increase with age and stabilize by late adolescence (Eisenberg & Fabes, 1998; Fabes, Carlo, Kupanoff, & Laible, 1999). Although there are distinct differences in how the development of prosocial behaviors has been examined throughout the literature, there is a general consensus that prosocial behavior increases in adolescence along with socialization opportunities and general development. One could reasonably expect that with a widening social environment, increasing cognitive capacities, continued emotional development, and an increasing willingness and ability to empathize with other children’s problems, children will likely develop higher levels of prosocial behavior with increasing age. Thus, as children grow older, their coping and cognitive skills increase, making negative emotions less disruptive, and increasing their ability to understand the brevity of a potentially violent situation and the positive impact that can come from prosocial intervention. On the other hand, the underlying motives of children’s prosocial behaviors clearly change with age. Some of the possible reasons for these age-related trends include the enrichment of role taking and empathic capabilities with greater maturity, higher levels of moral reasoning, increased skill in helping, and repeated exposure to socialization experiences that enhance prosocial responding (Eisenberg & Mussen, 1989). The degree to which constitutional and environmental factors contribute to stability in prosocial tendencies is unclear; however, it appears that stable individual differences in empathy-related responding emerge by childhood and likely account for some uniformity over time (Eisenberg, Guthrie, Cumberland, Murphy, Shepard, Zhou, & Carlo, 2002). The prosocial behaviors of the very young thus attest to the early beginnings and consistency of the human capacity for affiliation, cooperation, altruism, enlightened self-
interest, and understanding of social norms, all of which make prosocial behavior possible (Hay & Cook, 2007). Additionally, the combination of constitutional and environmental factors may be expected to result in some inter-individual consistency in prosocial behavior from childhood to adulthood (Eisenberg et al., 1999). Conclusively, it is important for school professionals, particularly school psychologists, to understand the implications of various aspects of child development in order to help create positive prosocial skills.

**Moral Processes of Prosocial Behaviors**

Prosocial behavior is related to perceived competence, emotional well-being, and altruistic moral reasoning (Wentzel, Filisetti, & Looney, 2007). Children who exhibit prosocial behaviors tend to have well developed perspective-taking abilities and moral reasoning. They achieve success and satisfaction, display social competence, do well academically, and have high self-esteem, as well as positive personality characteristics (Blair, Denham, Kochanoff, & Whipple, 2004; Jackson & Tisak, 2001). Generally, young children with prosocial tendencies also display constructive coping skills and abilities to regulate attention. They are typically well adjusted, good at coping, demonstrate self-control, and have low levels of emotional negativity (Wentzel & McNamara, 1999; Eisenberg & Mussen, 1989). Thus, it is critical to define prosocial behaviors using a cognitive and emotional framework that involves empathy, sympathy, perspective taking, and moral reasoning (Hay & Pawlby, 2003).

**Empathy**

Empathy is defined as an emotional reaction elicited by and congruent with another person’s emotional state or condition (Eisenberg et al., 1999; Eisenberg, Guthrie,
This definition includes both recognizing and experiencing another’s emotional state. Empathy is an affective response that stems from one’s apprehension or comprehension of another’s emotional state or condition. It involves feeling similar to what the other person is feeling or would be expected to feel. Empathy contributes to actions such as attempting to comfort and help, as well as the ability to take turns and cooperate through sharing (Hoffman, 1987). Often viewed as a fundamental social skill that is part of an enduring personality trait, empathy allows an individual to anticipate, understand, and experience another’s point of view (Barr & Higgins-D’Alessandro, 2007; Eisenberg et al., 1999).

Miller, Eisenberg, Fabes, and Shell (1996) performed a comprehensive study and found that empathy and moral reasoning were positively related to prosocial behavior towards peers. Additionally, Blair and colleagues found that children high in both moral reasoning and emotional responding were most likely to assist a peer in distress (Blair et al., 2004). Most salient in the view of these researchers is the strong relationship between prosocial behavior and empathy.

Conceptually, empathy is linked to prosocial behavior because prosocial responding is dependent upon understanding another person, regulating personal emotions, and initiating an appropriate social interaction (Miller et al., 1996). Prosocial behavior and empathy are linked to temperamental predispositions such as emotional regulation, personality, and temperament that likely have a constitutional basis demonstrating a consistency in prosocial behavior over time (Eisenberg et al., 1999). It has been well documented that children high in empathy also show more prosocial
tendencies toward peers such as comforting, altruistic, and responsive behaviors (Findlay, Girardi, & Copelan, 2006; Eisenberg & Fabes, 1992). Generally, has been hypothesized that individuals who respond empathically to the distress or sadness of others, both in general and specific situations, will be more likely to assist a person in need compared to those who are less empathic. This presumably occurs to reduce another’s distress out of sympathetic concern, or to reduce one’s own negative affective state induced by empathizing (Lennon & Eisenberg, 1987). Consequently, empathy relates heavily to the demonstration of prosocial behavior with the need to understand another person’s perspective in order to exhibit helping behaviors.

**Sympathy**

Sympathy is a feeling of compassion or concern for another. It involves other-oriented motivation, but does not necessarily imply that one feels the same feeling as the sympathized person (Malti, Gummerum, & Buchmann, 2007; Eisenberg et al., 1999). McKinley & Carlo (2007) hypothesized that empathy and sympathy are precursors to prosocial behavior. Specifically, they suggested that being prosocial can make an individual more attentive and sensitive to the troubles of others (McKinley & Carlo, 2007). Sympathy has been linked empirically to selflessly motivated helping, or prosocial behavior, especially behavior that is likely to be based on other-oriented emotions and values (Fabes, Carlo, Kupanoff, & Laible, 1999; Eisenberg et al., 1999; Eisenberg et al., 2002; Eisenberg, Zhou, & Koller, 2001). This in turn, increases one’s feeling of sorrow for another, or sympathy, which might prevent the individual from engaging in aggressive behaviors towards another (McKinley & Carlo, 2007).
**Perspective Taking**

In addition to the affective skills of empathy and sympathy, cognitive perspective taking has been hypothesized to promote sympathy and has been linked to prosocial behavior (Fabes, Carlo, Kupanoff, & Laible, 1999; Eisenberg et al., 2002; Barr & Higgins-Alessandro, 2007). Cognitive perspective taking involves cognitively taking the role of the other or accessing information from memory to assist in an individual’s understanding of another’s situation, including their social context (Fabes, Carlo, Kupanoff, & Laible, 1999; McKinley & Carlo, 2007; Eisenberg et al., 2002). It affects both prosocial moral judgment and sympathy, which have a direct effect on self-reported prosocial behavior. Taking the perspective of someone in need often leads to sympathizing, which may increase the potential helper’s motivation to reduce the other person’s need (Eisenberg, Zhou, & Koller, 2001). The ability to understand a situation from another person’s perspective in turn leads to the ability to make decisions based on this perspective.

**Moral Reasoning**

Moral reasoning is defined as the ability or tendency to think about and make decisions in situations where there may be conflicting values, norms, rules or laws, needs, or desires. It represents a transition from egotistic, self-focused concerns to universal and ethically principled human concerns (Fabes, Carlo, Kupanoff, & Laible, 1999). Moral reasoning is associated with prosocial and moral behaviors in adolescence and negatively correlated to aggression, cheating, delinquency, and other forms of antisocial behaviors (Fabes, Carlo, Kupanoff, & Laible, 1999; Eisenberg et al., 2002). Although it is generally not viewed as an aspect of personality, moral reasoning seems to contribute to the
consolidation of a prosocial disposition and could be expected to correlate with prosocial personality characteristics (Eisenberg et al., 2002). Thus, sympathy, perspective taking, empathy, and, moral reasoning, can be considered measures of a prosocial disposition that are expected to motivate altruistic behavior (Eisenberg et al., 1999). To best understand the cognitive and emotional framework, the intervening variables involved in the decision to demonstrate prosocial behavior must be distinguished for each motivational factor and prosocial behavior and its influence on the situation.

Perspectives on the Demonstration of Prosocial Behavior

Young children must learn to analyze social situations, set social goals, and determine effective ways to solve differences that arise between them and their peers (Sy, DeMeis, & Scheinfield, 2003). Most parents and teachers seek to encourage children to act prosocially in response to specific requests and as an unsolicited prosocial act; however, young children often fail to perform spontaneous acts of prosocial behavior (Grusec, 1991). There are many factors that influence whether or not children choose to intervene in a violent or potentially violent situation. Specifically, it is important to consider the age of the child and the prosocial context, as well as the relationship of the recipient to the bystander and the characteristics of the recipient. Children tend to be more helpful, more generous, and more complimentary with their friends than with others who are less familiar (Newcomb, Brady, & Hartup, 1979). Additionally, research has shown that some children are more likely to help and share with children who are of a different age, especially when the children are younger. For example, Zeldin, Savin-Williams, & Small (1984) studied 12 adolescent males between 14 and 16 years of age who were attending a 5-week wilderness travel program sponsored by a private camp.
Observations of prosocial actions and behaviors were coded and collected on multiple occasions based on type of prosocial behavior and recipient of the actions. These researchers found that in addition to being more likely to help a friend, the number of people present in a situation strongly affected the likelihood of whether an individual will choose to help. Specifically, individuals are less likely to help as the number of bystanders, or potential helpers, increases (Zeldin, Savin-Williams, & Small, 1984). An individual who witnesses a potential emergency alone is more likely to intervene than one who witnesses it with other bystanders. A historical example would be the highly publicized murder of Catherine “Kitty” Genovese, a young woman whose neighbors failed to intervene. When others are present in an emergency situation, their presence provides cues to the appropriateness of the behavior in the face of novel stimuli, and at the same time, it allows a diffusion of responsibility such that no one person can be blamed for not having intervened (Bar-Tal, 1976).

Prosocial acts vary in terms of costs, benefits, and other factors that may influence the likelihood of their being performed and their moral significance. It appears that those factors that elicit a prosocial act also influence it’s meaning for the individual and the likelihood of it being performed by persons with different characteristics (Eisenberg, Pasternack, Cameron, & Tryon, 1984). Behaviors motivated by external reasons typically reflect fear of punishment or a desire to comply, while internally motivated reasons reflect desires to maintain a positive sense of self, either through gaining social approval, avoiding negative feelings of guilt or shame, or personal values of prosocial behavior. Research suggests that adolescents can have multiple motivating reasons guiding their behavior. For example, in a study of 339 middle school students
from a predominantly suburban middle-class community in a mid-Atlantic state were examined in relation to prosocial goals, self-processes, and contextual cues (Wentzel, Filisetti, & Looney, 2007). They found that goal pursuit significantly predicted prosocial behavior, and goal pursuit provided a pathway by which reasons for behavior were related to behavior. They also determined that each reason was related to a unique set of self-processes and contextual cues reflecting external, other-focused, self-focused, and internal justifications for behavior.

To better understand the relationship between bystanders and prosocial behavior, Darley and Latané (1968) sought to identify situational factors that could facilitate or inhibit helping behaviors in bystanders during emergencies. They conducted over forty experiments to examine which reasons influence helping behavior and ultimately defined two essential reasons: diffusion of responsibility and pluralistic ignorance. Latané and Darley argued that the obligation of each individual to provide assistance is reduced when several potential helpers are available, therefore diffusing the responsibility on one individual. To test this theory, college students were put into separate rooms and told to discuss problems with university life over an intercom and that no one would be listening. During the discussion, one of the subjects began to have an epileptic seizure and pleaded for help. When subjects believed they were the only other person in the discussion, 85% left the room to seek help; however, when subjects believed 4 other people were also having the discussion, only 31% went to help, thereby diffusing responsibility (Darley and Latané, 1968). The second explanation was pluralistic ignorance. According to this view, individuals are not sure whether a situation is an emergency and look toward surrounding individuals to see if they are responding.
Pluralistic ignorance was analyzed by having subjects fill out a survey by themselves or in groups of three. While they were completing the survey, smoke started to pour into the room through a vent. After 4 minutes of smoke, 75% of subjects who were alone reported the smoke to the researcher, while only 12% of the subjects in groups reported it (Darley and Latané, 1968). It was concluded that when no one else is reacting to a situation, it is presumed that the situation is not a real emergency (Darley and Latané, 1968).

Darley and Latané (1968) continued their research by discussing key steps in the process of deciding to be a prosocial bystander, including noticing what is happening, labeling it as a problem in which help is needed, taking responsibility, deciding what actions to take, and feeling that one has the skills to take action and can do so safely. Crick and Dodge (1994) hypothesized that a child’s behavioral response to a situation is based on 6 steps including encoding relevant internal and external cues, interpreting those cues, selecting a goal, assessing possible responses, choosing an appropriate response, and enacting that response. Similarly, other models focus on how individuals weigh the benefits and costs of different courses of action, how they evaluate the normative expectations of others, and how they assess their competence to act (Ajzen, 2002). First, the more ambiguous and less serious a situation, the slower children with prosocial behaviors are to notice warning signs and the less likely they are to intervene (Latané & Nida, 1981; Shotland & Goodstein, 1984). Second, if multiple bystanders are present and bystanders misperceive or underestimate the severity of the situation, the degree of intimacy or relational distance between an aggressor and victim may stop prosocial involvement (Stueve et al., 2006). Third, a child who behaves prosocially may do so out of concern for the other person, because they feel obligated to act, to impress an adult, to
feel better, or to get something in return (Jackson & Tisak, 2001). Finally, socially cohesive groups of bystanders are more likely to respond to emergency situations than are strangers, further supporting the need for a normative environment that supports social responsibility (Horowitz, 1971; Latané & Nida, 1981; Rutkowski et al., 1983).

In an effort to extend this research, Piliavin & Piliavin (1972) also assessed the reasons individuals decide whether to intervene in a problematic situation, but based on a more biologically-based perspective. They proposed that observing an emergency situation will elicit a state of physiological arousal in the bystander. Based on their theory, the feeling of arousal is the first phase in a bystander’s reaction to an emergency situation. The degree of arousal that will be experienced depends on a number of variables: 1) perceived severity of the emergency situation—the greater the severity the higher the arousal, 2) physical distance from the emergency—the closer the bystander is to the emergency the higher the arousal, 3) feelings of empathy—if the bystander feels empathy as a result of perceived similarity to the victim or emotional attachment to the victim, then he or she will experience a high level of arousal, 4) length of the emergency—the longer the emergency lasts without any help, the higher the arousal (Piliavin & Piliavin, 1972; Bar-Tal, 1976). This model suggests that the arousal experienced is undesirable and the bystander is therefore motivated to reduce or eliminate it. Piliavin and Piliavin believed that the choice of a particular action depends on the costs and rewards involved in helping or not helping; however, to best understand the intervening variables involved in the decision to demonstrate prosocial behavior, assessment and intervention must be used to distinguish each motivational factor and prosocial behavior and its influence on the situation.
Simply observing children’s behaviors unfortunately reveals very little about their thinking about prosocial behavior. To best understand the intervening variables involved in the decision to demonstrate prosocial behavior, assessment and intervention must be used to distinguish each motivational factor and prosocial behavior and its influence on the situation.

**Prosocial Behavior & Reduction of Aggressive Behavior**

Childhood aggression is the best-known behavioral predictor of future social adjustment difficulties. There are two distinct categories of aggressive children, those that manifest aggressive behavior in childhood, also known as early onset, and those that manifest aggressive behavior in adolescence. Children with early onset aggression are likely to engage in aggressive behavior throughout the life course (Hester et al., 2003). Research has shown that aggressive problem-solving strategies learned in early and middle childhood tend to persist into adulthood (Eron and Huesmann, 1984). Left untreated, children’s behavior problems typically multiply, intensify, and diversify over time, thus putting the child at increased risk for academic failure, social isolation, and peer rejection (Hester, Baltodano, Gable, & Tonelson, 2003).

It is important to recognize that aggressive and prosocial behaviors are independent individual characteristics that reside in the same individual. Prosocial disposition and aggression are independent behavioral strategies, rather than representing opposite ends of the same personality trait (Kokko, Tremblay, Lacourse, Nagin, & Vitaro, 2006). Prosocial behavior is an important correlate of social adjustment. Children who are rated the least prosocial in their behavior are more likely to have social adjustment problems, such as being rejected or neglected by their peer groups (Greener,
2000; Crick, 1996). Also, children who show excessively high or low rates of prosocial behavior may be at risk for behavioral problems and affective disorders (Hay & Pawlby, 2003). Low levels of prosocial behavior have been linked to the externalizing disorders of childhood, and high levels have been significantly related to internalizing or mood disorders (Scourfield, John, Martin, & McGuffin, 2004; LaFreniere, Provost, & Dubeau, 1992). Prosocial tendencies buffer an aggressive child against peer rejection, criminal behavior, and long-term unemployment and have been negatively linked to later criminality, independent of aggression (Kokko, Tremblay, Lacourse, Nagin, & Vitaro, 2006; Haemaelaeinen & Pulkinnen, 1996). Nevertheless, evidence pertaining to the relationship between aggression and prosocial behavior is unclear. Most children exhibit at least some level of both prosocial and aggressive behaviors. Several researchers have theorized that measures of prosocial behavior and aggression are mutual independent, while others have described that prosocial and aggressive behaviors can co-exist and have little or no direct relation with each other (McKinley & Carlo, 2007). However, most studies have stated that prosocial behavior is an important buffer that may protect against the development of aggressive or antisocial behavior in children as they become older (McKinley & Carlo, 2007). Prosocial behavior has been shown to affect cognitive components associated with aggression. Specifically, negative relations have been found between sympathy, aggression, and antisocial behavior (McKinley & Carlo, 2007).

Historically, researchers have worked diligently to examine the cognitive aspects of prosocial behavior and have sought to define the categories of consistent prosocial behavior; however, much of the present focus has shifted to utilizing this research in an effort to decrease the most detrimental behaviors in youth today. The increase of violent
and aggressive behavior in the nation’s schools has become a popular topic over the last
decade as social science researchers attempt to understand the rapid increase of violent
behaviors in the school environment and critical relationship prosocial behavior can have
on mediating violence.

**Prosocial Behavior & School Violence**

The definition of school violence has been conceptualized as a multi-faceted
construct that involves both criminal acts and aggression in schools, which inhibit
development and learning, and harm the school's climate (Furlong & Morrison, 2000). It
can be understood to include violence perpetrators, victims of violence, feelings of fear
and insecurity, criminal and antisocial behavior, and the disciplinary system established
by the school (Furlong & Morrison, 2000). Before the 1990s, educators were less than
interested in studying school violence. From their perspective, rising violence on
individual campuses was difficult to detect and outside of their scope of practice;
however, youth and school violence are having an increasingly greater impact on overall
crime levels in the United States (Osofsky & Osofsky, 2001) and schools have proven to
be the most logical location to study youth behavior.

In the context of school violence, bystanders are typically thought of as students
who witness fights or other acts of physical aggression. However, these situations are not
only isolated to physical violence. They can also include situations where the bystander
may possess information that makes them believe that future violence is a possibility
(Stueve, Dahs, O’Donnell, Tehranifar, Wilson-Simmons, Slaby, & Link, 2006). Notably,
bystanders are not passive observers. Through their prosocial actions, bystanders often
influence whether and how volatile situations unfold; therefore, to evaluate the degree of
effectiveness prosocial behavior has on such situations, the development of these behaviors need to be examined through effective assessments in order to create a more comprehensive picture.

**Assessment**

Researchers have utilized several methods to assess children’s reasoning about prosocial behavior. In controlled settings, such as the laboratory, information collected in an unnatural environment and may not be ecologically valid; but on the other hand, it is difficult to obtain observations of prosocial behavior as they naturally occurs because of the influence being observed has on subjects’ responses (Eisenberg, 1982). Also, data on prosocial development obtained by self report may be inaccurate due to purposeful distortions, lapses in memory, or misrepresentation stemming from unconscious psychological needs (Eisenberg, 1982). In short, there are potential limitations with all the commonly used measures of prosocial development.

In measuring prosocial behavior, there are significant assessment methods that overlap through a majority of the literature. These methods include varying the situation in order to affect the child’s motivations and then identifying if and when the child behaves prosocially (Bar-Tal, Raviv, & Leiser, 1980); asking children about their motives for their own naturally occurring behaviors (Damon, 1977); and asking children to evaluate prosocial behaviors through peer ratings (Tisak & Ford, 1986). To quantify these methods, most researchers use global assessments.

Global assessment measures the likelihood of engaging in a prosocial behavior across situations and personal motivations. These assessments typically include aspects of a broader construct that involves prosocial behavior. Common methods used to assess
prosocial behavior include observation, situational tests, questionnaires, ratings, peer nominations, and self-report. Self-report scores, though positively correlated with peer-report scores, are likely to be more favorable and reliable than peer nomination ratings and are therefore generally used most often in research (Greener, 2000; Eisenberg & Mussen, 1989). Questionnaire measures of prosocial responding consist of a series of questions regarding the individuals’ own performance of prosocial acts, or the frequency of enacting a variety of prosocial behaviors. They are imperfect indicators of prosocial responding because people may try to appear more altruistic than they really are (Eisenberg & Mussen, 1989). Specifically, assumptions are made concerning the rater including that the rater understands the construct, knows which behavior pertains to the construct, understands the reference points, and can extract a cumulative impression of behavior (Greener, 2000). Although there are various limitations, the global assessments described align with the definition of prosocial behavior and its different correlates and variations of expressed behavior. These assessments not only help to examine the likelihood of an individual to perform altruistic behaviors, but they also guide intervention.

**Methods of Intervention**

School-wide prevention strategies and intervention techniques are critical to the success of increasing prosocial behaviors. Not surprisingly, the complex determinants of school violence have inspired a range of approaches to explain violent behavior and various levels of programs to provide intervention, not many of which are evidence-based or empirically valid. Essentially, most programs are stand-alone elements in schools, student-focused, and ineffective. The average school has 14 discretionary prevention
programs in place, not including discipline policies and procedures, and these programs are generally a diverse group of interventions that are not a part of any comprehensive needs-based plan (Kingery & Walker, 2002).

To prevent violent tendencies and enhance prosocial behaviors, early intervention programs should be utilized to target outward behaviors, specifically prosocial behavior. Successful early intervention should be multi-dimensional in nature, and must consist of a complex series of interactions and transactions that synergistically serve to nurture and enhance both the development of the child and family (Hester et al., 2003). The most effective interventions are those implemented in multiple environments, by multiple agents over time, with continued intervention, support, and transition services as children move from setting to setting (Hester et al., 2003; Astor, Meyer, Benbenishty, Marachi, & Rosemond, 2005). Also, an intervention should be largely contingent on its continuity and consistency across persons, across settings, and over time, with interplay between child and child-partner and variables that shape the quality of behavior within the context of the setting (Hester et al., 2003).

Kerns & Prinz (2002) conducted a comprehensive review of empirically evaluated programs in the United States that were designed to prevent youth violence and identified 6 critical and recurring issues that appeared to impose obstacles to the success of the program and that need to be considered when designing such programs. The purpose of the review was to address critical issues concerning target level of programming, theory-driven versus problem-driven conceptualization, cultural considerations, developmental considerations, intervention fidelity, and outcome and impact assessment (Kerns & Prinz, 2002). Based on this review, the following have been identified as key components for
effective violence prevention programs 1) a comprehensive and multifaceted design, 2) beginning in a primary grade, 3) a program that is developmentally tailored, 4) content that promotes personal and social competencies, 5) interactive techniques used to facilitate skill development, 6) culturally sensitive material, 7) ensures intervention fidelity, 7) applies positive control in the classroom, and 8) fosters norms against violence in all school activities (Weir, 2005). These recommendations provide a guided framework; however, research has yet to discover the best practice in each of these areas, or the ideal combinations of these foundations (Kingery & Walker, 2002). In the meantime, childhood educators can be instrumental in creating an environment that nurtures the prosocial development of students in the classroom. When positive social behavior is modeled and encouraged by teachers, children learn to respect the needs of others and respond accordingly.

**Skill Knowledge**

The prosocial literature identifies skill knowledge and development as an important aspect of engagement in behavior. Children who report higher levels of perceived effectiveness are more willing to engage in prosocial behaviors and report greater numbers of actual behaviors, whether measured cross-sectionally or over time (Banyard, 2008; Barr & Higgins-D’Alessandro, 2007). Also, children are more likely to act prosocially if they know what to do and feel that they possess the necessary resources (Stueve et al., 2006; Kidron & Fleischman, 2006). Most importantly in terms of performing of these behaviors is the role of the wider social context factors in the development of prosocial behaviors across the lifespan as seen through the peer and familial implications on development (Carlo and Randall, 2001).
School Interventions

The U.S. Department of Education has mandated that any K-12 public school who wishes to apply for Safe Schools Title IV federal funding must show evidence based effectiveness of the violence program implemented at the school level and are required to submit violence prevention program outcome evaluation data in order to qualify (Flannery, 1998). As a result, schools have taken the initiative to develop an ongoing process of strategic planning and staff development to create building-wide structures and directives for responding consistently to student behavior that can be implemented in a school-wide or classroom-wide basis. Educators can have a tremendous influence on students’ social growth by creating a school wide culture in which each student has opportunities to see prosocial behaviors modeled by other students and by adults. Literature has supported multiple programs for their effectiveness in developing prosocial behaviors. Though each one has its limitations, they all follow the underlying foundations of teaching appropriate behaviors for all ages of students.

One of the most prominent evidence based programs is Second Step, which is a violence prevention program for children that uses a classroom curriculum developed by the National Committee for Children and is approved by the National Safe and Drug-Free Schools Program (Leffler & Snow, 2001). The curriculum is designed to teach empathy, impulse control, and anger management to children through fully scripted lessons and interactive activities targeted toward age groups ranging from kindergarten to ninth grade (Leffler & Snow, 2001). The program was evaluated in formative studies and through a 1-year experimental study. In the formative studies, the program was implemented in 12 public and 2 private schools located in urban and suburban districts in the Pacific
Northwest. Participating children were given pre-and post interviews and surveys demonstrating significant improvement in their verbal perspective taking and social problem-solving abilities compared to a control classroom (Frey, Hirschstein, & Guzzo, 2000). However, due to a lack of random assignment to groups, the gains may have been the result of general practices rather than participation in the Second Step program. A more comprehensive analysis was conducted in a study by Grossman, Neckman, Koepsell, Liu, Asher, Beland, Frey, & Rivara (1997) with third grade students in 49 classrooms from 12 schools in the urban and suburban areas of western portion of the state of Washington. Data from teacher ratings, parent ratings, and direct behavioral observations by trained observers were collected at the beginning of the school year, at the end of the school year, and 6 months after completion of the curriculum (Frey, Hirschstein, & Guzzo, 2000). Direct behavioral observations revealed that physical aggression decreased and higher levels of positive interaction were maintained when compared to a control group; however, no changes in teacher-report antisocial or prosocial behavior or in parent-reported aggressive behavior were found amongst the intervention group when compared to the controls. In an effort to investigate the impact of the Second Step curriculum on social behavior in a rural elementary school, Taub (2001), conducted a yearlong longitudinal evaluation with a rural population of mostly poor, Caucasian students in 3rd through 5th grades. For comparison, data was also collected from students in a nearby school who were not receiving the intervention. Using the School Social Behavior Scales (Merrell, 1993) and behavior observations, significant improvements were noted in teacher ratings of social competence and antisocial behaviors for students at the intervention school compared to the control.
school. Also, behavior improvements were shown in some prosocial behaviors such as engaging appropriately with peers; however, no improvements were noted in antisocial behaviors. Although there were some significant findings with the examination of the Second Step program, neither the improvements observed in the students, nor the problems observed in the control schools, were reflected in the ratings of the individual students. Therefore, though a promising program, there are still significant improvements to be made in the evaluation and implementation of interventions targeting prosocial skills.

Another popular program is Responding in Peaceful and Positive Ways, or RIPP, originally developed for urban middle schools serving a predominantly African American student population. The purpose of RIPP is to reduce the incidence of youth violence by working with the entire student population at a middle or junior high school, using a valued adult role model to teach knowledge, attitudes, and skills that promote school wide norms for non-violence and positive risk-taking (Farrell, Valois, Meyer, & Tidwell, 2003). For generalization purposes, the program was expanded with a comparison of outcomes over two years between four schools who implemented the intervention and four control schools from five rural counties in Florida using a between-schools design. The sample consisted of 685 students from the four control schools and 655 students from the four intervention schools with a mean age of 11.4 years. The participants were evenly divided in terms of gender with 65% Caucasian, 22% Hispanic, and 11% African American. A majority of the students were eligible for federal free or reduced lunch, children of migrant workers, and came from homes where English was not the primary language (Farrell, Valois, Meyer, & Tidwell, 2003). Significant outcomes were found on
mediating variables including attitudes toward nonviolence, attitudes toward violence, and knowledge of the intervention material; however, only minor significant differences were found using a pre-test post-test comparison of overall decrease in aggressive behaviors (Farrell, Valois, Meyer, & Tidwell, 2003). The use of the between-school design was beneficial in examining outcomes with relation to the intervention; however, the changes were limited to the most aggressive students and fidelity of the implementation across school could not be determined.

Too Good for Violence (TGFV) is another highly regarded school-based violence prevention program designed to improve student behavior and minimize aggressions among students in kindergarten through grade 12. Specifically, TGFV seeks to teach students essential life skills such as how to assert themselves positively and how to de-escalate violent situations. The curriculum sessions are varied by grade level in order to provide developmentally appropriate content based on the risk and protective factors most significant for each grade level. The effectiveness of the curriculum was evaluated by Burnes (2008) using fourth grade students from an elementary school in central Mississippi. Forty-eight students participated in an intervention group and twenty-two students participated in the control group. Based on measures of student behavior/knowledge and the number of behavioral referrals, consistent gains were reported in observed measures of student skills and behavior with members of the treatment group; however, there was no statistically significant difference in the adjusted posttest measures of student skills and behavior. The researcher also found distinct changes in behavior when examining the number of office referrals. Prior to the beginning of the TGFV curriculum, teachers from the intervention group referred more
students for inappropriate behavior than the teacher from the control group. After implementing the TGFV curriculum, teachers from the intervention group referred many fewer students for inappropriate behavior, whereas the control group teacher drastically increased the number of referrals for inappropriate behavior. The teachers were unaware of the group their students had been assigned; therefore, it was concluded, that based on the changes in behavior as evidenced in office referrals, the Too Good for Violence intervention curriculum had a positive impact on the behavior of students. Though these results are promising for assisting in observed behavior changes, the curriculum was not proven to be effective in increasing students’ self-reported skills or behaviors.

These programs, along with many others centering on violence prevention, aim to teach certain alternative, prosocial behavioral habits directly so that students have the behavioral competence and skills to be able to engage in prosocial behavior. Programs like these facilitate the development of conventional moral reasoning so children understand why they should engage in prosocial rather than antisocial behavior if they cannot formulate good reasons for behaving prosocially (Goldstein, Carr, Davidson II, & Wehr, 1981). To be effective, interventions require the child to independently translate abstract principles into concrete actions commonly encountered with peers and others. Implementing extensive positive interventions, such as role playing and modeling, helps to shape students into adults who are more likely to engage in prosocial behaviors, less likely to engage in antisocial behaviors, more aware of prosocial behaviors, value and respect prosocial behaviors in others, and have a more positive view of people (Cashwell, Skinner, & Smith, 2001).
Prosocial character traits as taught by school professionals are neither abstract principles nor general personality dispositions. Instead, they reflect concrete moral habits or prosocial behavior patterns and regulate how people behave in certain kinds of social situations (Goldstein, Carr, Davidson II, & Wehr, 1981). Children should be given opportunities to practice moral values or habits, and to learn about their appeal at an early age so that a foundation of prosocial behavioral skills and attitudes can be developed. As shown extensively throughout the literature, in order for an intervention to be effective in a classroom-wide or school-wide setting, the atmosphere of the school must also be reflective of a safe and comforting environment.

**Perception of Safety**

In order for schools to be successful in providing students with developmentally appropriate instruction and social experiences, an atmosphere of safety and protection is required. Schools should be a safe place for teaching and learning, and are supposed to be free from crime and violence. When the school environment is negative, it has a negative psychological impact on children. Noaks and Noaks (2000) examined perceived levels of safety and the fear of crime students experienced in school. A majority of students felt safer in school than they did on their way to and from school. It was reported that 14% of male students and 13% of female students felt their journey to and from school was unsafe. Sadly, some students reported that they were so afraid of either traveling to or being in school that they had stayed home from school at least once during the past month (Noaks & Noaks, 2000). More general concerns and worries about crime followed previous patterns with more girls than boys reporting fear about being a victim of violence. Specifically, in school settings, 33% of both boys and girls reported that they
felt afraid of being targeted. Disturbingly, it was found that 16% of girls and 21% of boys reported carrying a weapon for self protection on a regular basis (Noaks & Noaks, 2000). These figures show that school violence is a nationwide problem affecting the lives of many children whose minds are troubled with thoughts and worries of victimization.

Another aspect of effective violence prevention programs is the ability to improve school climates. School-wide coordination is necessary in order to provide structures that promote reinforcement and extension of instruction beyond the classroom and throughout the school (Chesebrough, King, Gullotta, & Bloom, 2004). Specifically, schools are charged with helping students feel valued and personally invested in keeping their school safe. This relates to codes of conduct, bullying prevention, conflict resolution, strategies that promote personal responsibility, respect, and compassion, and developing trusting student-adult relationships in which students are encouraged to report potentially dangerous activity (Paine & Cowan, 2009). Peer mediation, conflict resolution, anger management, social skills training, and other techniques can also be widely overlapping in their effects, as each takes a slightly different approach to achieve the results (Kingery & Walker, 2002). Also, research suggests that if schools promote the concepts of connectedness and cooperation, prosocial behaviors will increase (Carlo, Fabes, Laible, & Kupanoff, 1999; Eisenberg, 2006; Brand, Felner, Shim, Seitsinger, & Dumas, 2003). Barr & Higgins-D’Alessandro (2007) tested these concepts in a study investigating the relationship between school connectedness and prosocial behavior in typically developing adolescents. They found that there was no relationship between school connectedness and prosocial behavior which is in contrast to previous research involving elementary school children. No study to date has examined these relationships over time.
through the use of a pretest, therefore, presenting a gap in the literature for future research.

**Be a Safety Kid**

The *Be a Safety Kid* curriculum is a school-based violence prevention intervention that incorporates the research suggested aspects of a successful prosocial intervention described above. The goal of the curriculum is to make the school environment a place where a child feels and is safe and secure from the threat of violence (Safety Kids, 2005). *Be a Safety Kid* is based on the ideals of “Responsible Reporting,” or appropriate telling of information when a dangerous situation is apparent (Safety Kids, 2005). The foundation of the curriculum is based partly on the beliefs that most inappropriate behavior leads to punishment; therefore, students may learn to avoid teacher observation when performing these inappropriate behaviors. As a result, in many instances, peers may be the only observers, and when these behaviors are dangerous, having peers tattle may be the only way to prevent tragedies from occurring (Cashwell, Skinner, & Smith, 2001).

The *Be a Safety Kid* curriculum incorporates the crucial aspects of the theories of social learning and cognitive development in the creation and application of prosocial behaviors. As previously stated, a successful program should include consistent individual lesson plans or activities with clear objectives and activities, as well as a clear rationale for their contribution to the overall program goals (Chesebrough, King, Gullotta, & Bloom, 2004). *Be a Safety Kid* has objectives, concepts, and activities for students in Kindergarten through 8th grade, with developmentally appropriate skill development and prosocial behavior knowledge for each grade. Additional reinforcement is maintained throughout the curriculum and materials are available to infuse the
behaviors across subject areas with opportunities for skill application throughout the day. Affective and cognitive prosocial processes are also integrated within the curriculum with a division of skills when reacting to a potentially violent situation. Specifically, children are asked to sense and think about the situation at an appropriate developmental level and then act responsibly with the foundational belief that students together are responsible, allowing for peers to hold each other accountable for their actions (Safety Kids, 2005).

Effective programming also includes rewarding students for using learned skills in daily interactions, quality of program implementation, and assessment measures to measure individual mastery of objectives (Chesebrough, King, Gullotta, & Bloom, 2004). *Be a Safety Kid* provides worksheets, role-play activities, and hypothetical scenarios at the conclusion of each lesson to test skill knowledge of concepts and maintain prosocial behaviors by giving examples of behaviors based on real-life situations.

In order to prevent and remedy social problems in the school environment, educators must do more than suppress incidental antisocial behaviors and implement invasive security measures. Rather, educators must develop programs that encourage incidental prosocial behaviors within the natural school setting (Cashwell, Skinner, & Smith, 2001). The *Be a Safety Kid* curriculum expands on these foundations by providing skills and instruction to children on appropriate behaviors and by including school personnel to enhance the performance and the belief of students’ in their individual prosocial behaviors.

**Conclusions**

Although the research on prosocial behavior has developed significantly over the years, several important questions and areas remain unclear. Notably, there continues to
be a lack of a consensus of the specific behavioral manifestations and definitions of the broad construct of prosocial behavior. A limited amount of research has focused on positive youth development and how to promote prosocial behavior during early adolescence. With literature supporting the relationship between prosocial behaviors and decreasing aggression, researchers are now interested in defining and assessing the underlying social skills that are necessary for prosocial behavior (Barr & Higgins-D’Alessandro, 2007). Previous research has failed to assess the understanding of the functions of prosocial behavior and specifically data on the affective accompaniments of prosocial behavior, and the developmental changes in the disposition to help, share, comfort, or sympathize (Radke-Yarrow et al., 1976; Kokko, Tremblay, Lacourse, Nagin, & Vitaro, 2006). Additionally, although research has provided some overarching foundations of prosocial behaviors, its ability to be generalized is limited. Most studies have included small samples consisting of primarily middle to upper class Caucasian males, and several studies have been limited to laboratory-based research using contrived social situations, with modest evidence for children, adolescents, and adults (Zeldin, Savin-Williams, & Small, 1984). The next step in examining prosocial behavior is from a multilevel perspective that recognizes the diverse influences that promote actions for the benefit of others, considers the variety of ways prosocial behavior can be manifested, and clarifies the common and unique processes that underlie prosocial acts across the different levels of analysis (Penner, Dovidio, Piliavin, & Schroeder, 2005). By examining how children interpret and react to social situations, educators may better understand the intersection of the social and cognitive domains in the development of prosocial skills. Then, through thoughtful planning and the establishment of effective school violence
prevention programs focused on the development of prosocial behavior, schools will be afforded more opportunities to avert crises and better prepared for when they do happen.
CHAPTER III
METHODS

In this chapter, a detailed description will be outlined of how this study will investigate the research questions previously discussed in the second chapter. The purpose of this study is to assess the quality of the Be a Safety Kid curriculum in eight school populations across the nation. Specifically, a pre-test/post-test instrument termed “S.T.A.R.” was used to measure the development of prosocial behaviors in children in terms of skill, knowledge, and performance. A detailed description of the original study will be discussed along with the methodology for the current study. First, the participants included in the study will be discussed along with how they were recruited. Second, a description of the measures that operationalize each construct in the research questions will be outlined, followed by a discussion of the procedures that were used for administering the measures and collecting the data, including the technical qualities of the data-collection instruments. Finally, the steps of the data analyses utilized will be discussed.

Participants
Recruitment of Participants

No participants were recruited for the current study because it is a secondary analysis of a pre-existing database; therefore, a description of the procedures completed by the owner of the Be a Safety Kid curriculum are outlined. Requests were sent to schools across the continental United States to receive the Be a Safety Kid program and implement it exactly as it was designed. Schools were also recruited at national conferences where their representatives (e.g., personnel) inquired about the curriculum at
promotional events. Ninety-two requests were sent to schools across the continental United States to receive the *Be a Safety Kid* program with no modifications. Those who chose not to participate were asked to complete a survey to collect information regarding their decision not to participate. When school administrators agreed to participate, it was explained that each student would be given a pre-test at the beginning of the school year before implementing the *Be a Safety Kid* curriculum, and a post-test at the conclusion of the curriculum’s instruction which is at the end of the school year. Each school had the option of implementing the program at a school-wide level, grade level, or as individual classrooms.

**Participant Characteristics**

An intensive effort was made to reach a national sample of youth K-8 from rural, urban, and suburban districts. Although students are not randomly assigned to their classrooms, the student representation in terms of gender, ethnicity, and special needs were represented in the heterogeneous classrooms. Of the anticipated sample, nine schools from seven districts across the United States agreed to implement the curriculum as designed, as well as the subsequent pretest/post-test measures. None of the surveys were returned from any of the districts who chose not to participate; therefore, information concerning their reason for lack of participation is unavailable. The current study’s sample includes six of the seven original school districts from following states: Arizona, Florida, Georgia, Pennsylvania, and Wisconsin. This study will focus on the Kindergarten, 1st, 2nd, and 3rd grade students who completed the curriculum. There are approximately 171 kindergarten students, 349 first grade students, 326 second grade
students, and 214 third grade students for a total of 1060 research subjects. The current information was collected during the 2009 to 2010 school year.

**Intervention**

The curriculum that will be used in this study is the *Be a Safety Kid* curriculum. The goal of the curriculum is to make the school environment a place where a child is and feels safe and secure from the threat of violence. With the implementation of the program, students will learn the skills and behaviors necessary to help prevent violence and harm, and improve attitudes that reflect prevention and prosocial approaches (Safety Kids, 2005). The school-wide curriculum is based on the ideals of “Responsible Reporting,” or appropriate telling of information when a dangerous situation is apparent. A “Responsible Reporter” wants to prevent someone from getting hurt in an unsafe or dangerous situation. If something has already happened, a responsible person reports it so that additional people do not get hurt. Also, a “Responsible Reporter” should not be viewed negatively because individuals who hurt others must be held accountable for their actions (Safety Kids, 2005).

The *Be a Safety Kid* curriculum has objectives, concepts, and activities that coordinate with appropriate skill development and prosocial behavior knowledge of students in grades Kindergarten through 8th grade. Additional reinforcement is maintained throughout the curriculum with materials to assist in applying the behaviors across subject areas and opportunities for skill application throughout the day. Specifically, children are asked to use their senses and thinking skills at a level that is developmentally appropriate, and then act responsibly with the foundational belief that students together are responsible, allowing for peers to hold each other accountable for
their actions (Safety Kids, 2005). *Be a Safety Kid* provides worksheets, role-play activities, and hypothetical scenarios at the end of each lesson in order to test skill knowledge of concepts and maintain prosocial behaviors by giving examples of behaviors based in real-life situations.

**Instrumentation**

**Creation of S.T.A.R. Instrument**

In the creation of an adequate and comprehensive examination of the fidelity of the *Be a Safety Kid* curriculum, variables were assessed for their influence in the skill development of children. Specifically, the areas were divided to measure knowledge, performance, and school connectedness. Knowledge testing questions were designed to evaluate the pre-set objectives set forth in the lesson objectives for each grade level. Performance questions were developed to assess the proclivity toward prosocial behaviors, and school connectedness questions were designed to assess the safety of the school social environment. To account for the developmental process of children, different versions of the S.T.A.R. instrument were created to measure similar skills at a developmentally appropriate level.

The assessment of young children is very different from the assessment of older children in several ways. The greatest difference is in the way young children learn. Young children construct knowledge in experiential, interactive, concrete, and hands-on ways (Bredekamp and Rosegrant, 1995) rather than through abstract reasoning and paper and pencil activities alone. To learn, they must touch and manipulate objects, build and create in many media, listen and act out stories and everyday roles, talk and sing, and move and play in various ways and environments. Young children are better able to
report subjective information; hence, when developing the *Be a Safety Kid* pre/post-tests, the developers considered developmental stages and decided, based on research, to administer only subjective, skill-based questions for grades K-3. Pre/post-tests from grades 4-8 included self-reflection, performance, and school connectedness questions, which are better answered by children in this age group.

The younger versions of the S.T.A.R. instrument were developed for children in grades Kindergarten through 3rd grade to account for the developmental gap in abilities between 3rd and 4th grade in the school environment and also in the *Be a Safety Kid* curriculum. The Kindergarten through 3rd grade versions focus on attainment of knowledge strictly aligned with the curriculum and the performance of these skills in the educational environment. Some research has advocated having test questions read aloud for elementary aged students (Reynolds & Richmond, 1978; Stone & Lemenek, 1990). This practice ensures that the test is measuring what the test intended to measure and not the child’s reading ability. In the *Be a Safety Kid* curriculum, educators are instructed to administer the pre and post tests orally to class groups from Kindergarten to grade 3. The older version was created for grades 4 through 8 and focused not only on skill acquisition and performance, but on the production of these skills on a regular basis as well. Each version also included questions designed to measure students’ perception of the overall safety of the school setting and the students’ ability to bond with the educational structure, including school personnel.

A method commonly used in educational and psychosocial measurement is the Likert scale. Likert scales are reportedly easy to understand and user friendly for both the researcher and the student. Instruments that use a Likert scale typically contain test
instructions that are simple to explain to students and instruction time is minimal for the person administering the test (Vickers, 1999; Jaeschke, Singer & Guyatt, 1999; Guyatt, Townsend, Berman & Keller, 1987). The Likert scale format has been found to be easier for young children to understand and answer with accuracy when compared to other assessment formats, such as the continuous rating scale (Shields, Cohen, Harbeck-Weber, Powers, & Smith, 2003). Developmentally, a child’s ability to understand and respond appropriately to self-report inventories is often limited due to less developed reading, writing and language skills. Therefore, a Likert scale was chosen to best measure the skill and understanding of the curriculum.

Despite the many positive qualities of the Likert scale, research has shown that the Likert scale can also be misleading. Too many response categories may lead to difficulties in choosing between responses, while too few categories may not provide enough choice or sensitivity, thereby forcing the respondent to choose an answer that does not represent the person’s true intent (Vickers, 1999; McCormack, Horne, Sheather, 1988). The Likert scale construction process tends to eliminate the selection of neutral choices in favor of those that are more extreme, encouraging respondents to choose a slightly more positive or negative rating over the natural tendency to select a neutral position (Roberts, 1996). For this reason, the Be a Safety Kid pre and post-test questions were designed to use a gradient scale ranging from Always, Often, Sometimes, and Never, eliminating the neutral option. Also, to maintain a level of assessment that is developmentally appropriate for younger grades, the Likert scale was further delineated to only two options of Yes or No. These two selections were used because the conciseness of choosing between two choices. Children in younger grades may be unable
to differentiate between the intricacies of a four option Likert scale, seeing similarity between always and often, and between sometimes and never. Limiting the responses to only two options creates a significant discrepancy between the two choices, therefore, providing more concrete evidence of skill acquisition.

All tests developed using a Likert scale should be assessed for age appropriate vocabulary and reading levels (Stone and Lemenek, 1990). To accomplish this, each version of the Be a Safety Kid S.T.A.R. instrument was screened using a readability formula during development. The readability levels were found using OKAPI, an Internet application used for creating curriculum-based assessment reading probes. OKAPI is a web-based application that allows users to enter a text sample and format that sample as a set of Examiner and Student Curriculum-Based Assessment reading probes. Each scenario created for use on S.T.A.R. instrument was entered into the formula and processed for its Spache or Dale-Chall Readability Formula. The Spache Readability Formula is typically used to calculate the reading difficulty of text that falls at a third grade level or below (Spache, 1953), and the Dale-Chall Readability Formula is most often used to calculate the reading difficulty for more advanced text, usually at the fourth grade level and higher (Dale-Chall, 1948). Hence, the Spache formula was used for the Kindergarten through 3rd grade assessments, and the Dale-Chall formula was used for the 4th through 8th grade assessments. All test levels were found to use age and grade appropriate language for the group to which the test would be administered.

Another issue to consider when creating a measurement for children is that younger children have more difficulty maintaining interest on a test for an extended period of time. To account for this, Harter and Pike (1984) suggested using a pictorial
format, such as cartoon drawings, to generate interest in the task. The pictorial format serves to clarify the responses and make the verbal material more concrete. Therefore, the younger version of the test was designed using pictorial, as well as, verbal representations for skill questions. For example, the pre/post-tests for grades K-3 used both written yes/no responses and were matched with a thumb up or thumb down picture respectively.

When developing skill related questions for the S.T.A.R. instrument, the developer used vocabulary and scenarios directly from the taught curriculum so that the test content and vocabulary were familiar to the student (Stone & Lemenek, 1990). Questions were taken word for word from the curriculum and were associated with the lessons taught at each grade level, which resulted in a slightly varied instrument for each grade. Questions were limited to concrete learned material from the lesson and avoided opinion based inquiries. The knowledge-based questions were developed by an elementary education teacher and were reviewed by special education specialists, as well as a school psychologist, to ensure face validity.

When developing performance related questions, two areas of emphasis were examined for their implication of the tendencies of children to perform prosocial behaviors on a regular basis. One area was the ability of students to perform helping behaviors even when not directly involved in violent or potentially hazardous incidents. These types of helping behaviors have been defined in the literature as bystander or prosocial behaviors. The Merriam-Webster Online Dictionary (2002) defines a bystander as an individual who is present, but does not take part in an event or situation. In terms of school violence, we typically think of bystanders as those students who witness fights or other acts of physical aggression; however, these situations are not isolated to only
physical violence. They can also focus on situations where the bystander may possess information that makes them believe that future violence is likely (Stueve et al., 2006). Furthermore, bystanders are not passive observers. Their actions and inactions often influence whether and how volatile situations unfold. They are often natural leaders being helpful in a way that is not self centered. Helpful bystanders do not seek the limelight, but instead gain pleasure in the act of being helpful (Twemlow, Fonagy, & Sacco, 2004). Therefore, in the development of S.T.A.R. instrument, it was crucial to include an assessment of the degree to which students felt comfortable in their role as a bystander and in performing appropriate prosocial behaviors to prevent violence in the school environment.

Models of the bystander role, as defined in the literature, include several fundamental features. Darley and Latane (1968) discussed key steps in the process of deciding to be a prosocial bystander, including noticing what is happening, labeling it as a problem where help is needed, taking responsibility, deciding what actions to take, and believing that one has the skills to take action and can do so safely (Darley & Latane, 1968). Another model, described by Ajzen (2002), focuses on how individuals weigh the benefits and costs of different course of action, how they evaluate the normative expectations of others, and how they assess their competence to act. These models help outline the specific areas of questioning that are relevant to the assessment of a student’s tendency to be a responsible reporter when involved in a violent or potentially violent situation. These beliefs were also a fundamental aspect in the *Be a Safety Kid* curriculum aligning with the core concept of the *Be a Safety Kid* instruction of “Responsible Reporting.” The questions focused on prosocial behavior measured the likelihood of
students to appropriately report unsafe situations and also the level of comfort or fear they would feel reporting information.

To incorporate research models, students were asked to identify the reasons for their unwillingness to report. These reasons were drawn from research explaining the contextual factors that may halt prosocial behaviors. For example, the more ambiguous and less serious a situation, the slower bystanders are to notice warning signs making them less likely to intervene (Latane & Nida, 1981; Shotland & Goodstein, 1984). Also, if multiple bystanders are present, bystanders may misperceive or underestimate the gravity of situation, and the degree of intimacy or relational distance between an aggressor and victim may stop bystander involvement (Stueve et al., 2006). Similarly, socially cohesive groups of bystanders are more likely to respond to emergency situations than are strangers, which further supports the need for a normative environment that supports social responsibility (Horowitz, 1971; Latane & Nida, 1981; Rutkowski et al., 1983). These reasons were used as a guide to identify research based choices for the why students would choose not to make prosocial decisions.

Also important to the performance of these behaviors is the role of the wider social context factors in the development of prosocial behaviors across the lifespan (Carlo and Randall, 2001). Factors such as the feeling of bonding and connectedness in the school environment are important social context factors to consider. The school connectedness questions on the S.T.A.R. instrument were adapted from multiple measures used in previous literature and research studies. The Unger and Wandersman’s (1982) Sense of Community Scale, which has been used in prior studies with college students, is a brief three-item measure consisting of the following items: “Do you feel a
sense of community with other people on campus?”; “How important is it to you to feel a sense of community with people on this campus?”; and “Some people care a lot about the kind of campus they live on. For others, the campus is not important. How important is what the campus is like to you?” These questions were modified to better relate to the school environment by using school and school personnel, such as teachers and administrators, as the primary focus of the questions. Another scale evaluated and adjusted was the Prevention Scale, a 13-item scale developed for use in the program evaluation of the Mentors in Violence Prevention Program (MVP; Katz, 1995). This scale was designed to assess one’s self-efficacy in relation to gender violence prevention; however, the questions are geared towards a school violence view with a focus on whether students felt they had control over violence in the education setting. These questions were also adjusted to better relate to the K-8 school environment.

A teacher questionnaire was also created as a part of the Be a Safety Kid curriculum in order to assess the fidelity and utility of the curriculum in the school environment. School connectedness questions were adapted from the student questionnaire and questions were added to assess the ease of the curriculum and its benefits and disadvantages in the classroom. Also, several assessment techniques were incorporated from a teacher instrument used to evaluate the effectiveness of a bullying prevention program (Edmondson & Hoover, 2008). Information regarding perception of student behavior, reported implementation of curricular lessons, and resulting changes to the school atmosphere following the curriculum’s implementation were elicited.
Measures

Students who participated in the *Be a Safety Kid* curriculum were exposed to early violence intervention for an entire school year in conjunction with the school district’s traditional curriculum. For the purpose of this study, the teachers and children completed the self-report survey before and after the treatment. The goal was to assess the quality of the *Be a Safety Kid* curriculum and its ability to effectively decrease violent and potentially violent situations in the school environment.

To coordinate with the theoretical constructs outlined in the creation of the S.T.A.R. instrument, questions in the Kindergarten, 1st, 2nd, and 3rd grade instruments were divided amongst knowledge, performance of prosocial behaviors, and school connectedness. The instrument was created with a total of 10 questions as to maximize interest and align with the developmental level of the students completing the tests. The content in Questions 1 through 8 was designed to measure developing knowledge and performance of prosocial behaviors. On the Kindergarten, 1st and 2nd grade instruments, the first question seeks to assess which sense (i.e. hearing or seeing) the students believe they are using to survey the situation. Questions 2 through 8, are mostly knowledge questions taken directly from the instruction given as a part of the *Be a Safety Kid* curriculum, with one (Kindergarten) or two (1st, 2nd, and 3rd grades) questions measuring performance. The knowledge questions were designed to measure the level at which the Kindergarten through 3rd grade students effectively learned and acquired basic information given verbally and through activities in the curriculum, while the performance questions hypothetically tested the likelihood of producing these behaviors and the reasoning for becoming actively involved in a potentially violent situation. The
ability of the students to respond to these situations provides hypothetical examples as to the production of prosocial behaviors. On the 3\textsuperscript{rd} grade instrument, three of the first eight questions were designed to measure performance of prosocial behaviors (Questions 1, 3 and 4), with the other five questions measuring developing knowledge. Questions 9 and 10 on all four S.T.A.R. versions were designated to measure the students’ belief in their overall safety and connectedness to the school environment. These last two questions are consistent across the grade levels and with comparable wording.

**Research Design**

This study utilized a quasi-experimental research design consisting of a nonrandomized group pretest/post-test design. Pre-test/post-test designs are widely used in behavioral research, primarily for the purpose of comparing groups and/or measuring change resulting from experimental treatments (Dimitrov & Rumrill, 2003). The design of a quasi-experiment relates to a particular type of study in which one has little or no control over the allocation of the treatments or other factors being studied. The key difference in this empirical approach is the lack of random assignment. Particularly in the social sciences where pre-selection and randomization of groups is often difficult, quasi-experimental designs can be very useful in generating results for general trends (Mertler & Vannatta, 2005).

**Procedures**

The *Be a Safety Kid* curriculum was provided to each school district by the curriculum’s owner following the approval of the district’s local school. This curriculum was administered at the discretion of the school district as a general educational practice and participation in any portion of the curriculum was determined by local school
personnel. Participation was voluntary and at any time, districts could withdraw their participation by simply not completing the forms. Returning the demographic information, de-identified teacher, parent, and child data forms was optional and none were returned. Although no detailed demographic information of the sample was provided, the demographic information of the school was obtained from the National Center for Educational Statistics (NCES, 2012). A description of each school’s demographic data is presented in Table 1. Introductory material provided by the owner of the Be a Safety Kid curriculum described the purpose of comparisons should districts volunteer to provide their information to the owner. All data presented to the owner were in aggregate form so that no parent, teacher, administrator, or child was identified, therefore, no names were included.

This curriculum was available to schools on a voluntary basis and as such was not perceived to cause physical, social, legal, economic, or psychological harm to any of its participants. It was considered no more than minimum risk to students because the curriculum is considered a typical educational practice. The Be a Safety Kid curriculum was integrated into the traditional curriculum throughout the entire school year, and students received direct instruction through sessions presented once per week. As with any instruction regarding prosocial behaviors, there is an opportunity to experience feelings of discomfort and there is an opportunity for discussion of controversial or intrusive personal information. Instruction monitoring was provided on a regular basis to address any potential problems, similar to what it typical for school instruction. Supports were offered and provided over the course of curriculum delivery through the district’s curriculum leader. If and when actions were warranted, the creator of the Safety Kid’s
The curriculum worked with school personnel to provide appropriate support at the local level. Also, training was provided for each curriculum administrator. The benefits from this research outweighed the risk by examining the usefulness of a safety curriculum for participating school districts and participants. This type of data collection is consistent with standards of practices aimed at improving the safety and well-being of the participants in and out of the classroom. Approval for this study was granted by Duquesne University’s Institutional Review Board (IRB), as well as the principals and board of directors of each school.

The creator of the Be a Safety Kid curriculum trained all of the teachers that were responsible for implementing the curriculum. During the first week of the school year, all participants completed the S.T.A.R. instrument as a pretest. Each classroom teacher completed the teacher form after administering the pretests and assigned each student an anonymous identification number in order to organize the pretest/post-test measures. The curriculum’s instruction subsequently took place once per week during the school day for one hour at each school throughout the year. Following the last session of the curriculum, the participants were given the same S.T.A.R. instrument as a post-test during the last week of the school year. The district’s curriculum leader then returned the completed measures to the curriculum owner.
Table 1

Demographic Data for Schools

<table>
<thead>
<tr>
<th>School</th>
<th>Type</th>
<th>Title One</th>
<th># Students</th>
<th># Free/Red Lunch</th>
<th>Racial Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA # 1</td>
<td>Public</td>
<td>Yes</td>
<td>326</td>
<td>194</td>
<td>Asian—2, Black—192, White—122, American Indian—1</td>
</tr>
<tr>
<td>PA # 2</td>
<td>Public</td>
<td>Yes</td>
<td>435</td>
<td>282</td>
<td>Asian—5, Black—210, White—205, American Indian—7</td>
</tr>
<tr>
<td>PA # 3</td>
<td>Public</td>
<td>Unknown</td>
<td>458</td>
<td>Unknown</td>
<td>American Indian—1, Black—7, Hispanic—19, White—391</td>
</tr>
<tr>
<td>PA # 4</td>
<td>Public</td>
<td>Yes</td>
<td>418</td>
<td>271</td>
<td>American Indian—1, Asian—221, Black—44, Hispanic—35, White—705</td>
</tr>
<tr>
<td>GA</td>
<td>Public</td>
<td>No</td>
<td>1,006</td>
<td>42</td>
<td>American Indian—9, Black—23, Hispanic—845, White—26, Asian—1</td>
</tr>
<tr>
<td>AZ</td>
<td>Public</td>
<td>Yes</td>
<td>903</td>
<td>836</td>
<td>Hispanic—74, Black—345, White—3, Asian—14, Black—3, Hispanic—8, White—184</td>
</tr>
<tr>
<td>FL</td>
<td>Public</td>
<td>Yes</td>
<td>423</td>
<td>409</td>
<td>Hispanic—74, Black—345, White—3, Asian—14, Black—3, Hispanic—8, White—184</td>
</tr>
<tr>
<td>WI</td>
<td>Private</td>
<td>No</td>
<td>209</td>
<td>Unknown</td>
<td></td>
</tr>
</tbody>
</table>

Data Analysis

All data was collected by the owner of the Be a Safety Kid curriculum. Only de-identified data was provided to the primary researcher. Participants were given an
identification number by their teacher in order to protect their privacy and so that the pre-
test and post-test scores could be matched.

Descriptive data was reported in terms of aggregated means and standard
deviations. Effect size calculations were used to determine the strength of the effect of
any changes detected in knowledge after students received the curriculum. To explain the
effectiveness of the Be a Safety Kid curriculum using the S.T.A.R. pre-test/post-test
instrument, a repeated measures ANOVA analysis was used. A .05 probability level or
better was used as a criterion for accepting and rejecting null hypotheses.

**Research Questions & Hypotheses**

This study is driven by several questions related to the effectiveness of the
curriculum and relation to prosocial behaviors. The following questions will be
investigated:

**Research Question 1**

Is the younger version of the S.T.A.R. instrument a valid assessment tool for evaluating
the knowledge and performance of prosocial behaviors, as well as perception of school
safety?

**Research Question 1 Statistical Analysis.** To assess for validity, each grade level
(Kindergarten - 3rd) of the younger version of the S.T.A.R. instrument will be examined
for its effectiveness with a designated population. When originally created, expert
opinions were asked from professionals within multiple fields related to the curriculum
and instrument for their judgment to establish face validity. In this study, confirmatory
factor analysis was used to determine the stability of content areas (e.g., knowledge and
performance actions) across pre-test and post-test administrations.
Research Question 2

Does the Be a Safety Kid curriculum influence knowledge of Kindergarten, 1st, 2nd, and 3rd grade students in five schools across the nation as defined as “Responsible Reporting” and the core concepts of the curriculum?

Research Question 2 Statistical Analysis. Repeated measures ANOVAs were conducted in order to assess the participants’ change from the pretest to the post-test of the S.T.A.R. instrument at each grade level. The dependent variable in this study was the Be a Safety Kid curriculum which was integrated with the school’s educational curriculum throughout the school year. The independent variable was the questions in the S.T.A.R. instrument that align directly with the curriculum instruction.

Research Question 3

Does the Be a Safety Kid curriculum influence anticipated performance of prosocial behaviors in Kindergarten, 1st, 2nd, and 3rd grade students?

Research Question 3 Statistical Analysis. Repeated measures ANOVAs will be conducted in order to assess the participants’ change from the pretest to the post-test of the S.T.A.R. instrument at each grade level. The dependent variable in this study was the Be a Safety Kid curriculum which was integrated with the school’s educational curriculum throughout the school year. The independent variable was the questions on the S.T.A.R instrument that align with the theoretical concepts for the performance of prosocial behavior.

Research Question 4

Does the Be a Safety Kid curriculum influence the perception of school safety in Kindergarten, 1st, 2nd, and 3rd grade students?
Research Question 4 Statistical Analysis. Repeated measures ANOVAs will be conducted in order to assess the participants’ change from the pretest to the post-test of the S.T.A.R. instrument at each grade level. The dependent variable in this study was the Be a Safety Kid curriculum which was integrated with the school’s educational curriculum throughout the school year. The independent variable will be the 9th and 10th (only 10th on Kindergarten instrument) questions on the S.T.A.R instrument that align with the theoretical concepts for the perception of school safety.
CHAPTER IV
RESULTS

The results of all analyses described in chapter three are presented in this chapter. First, descriptive statistics are reported for all variables in this study, including predictors and dependent variables. Next, statistical assumptions for the statistical tests are examined in order to assure the appropriateness of running the main analyses for each research question. Finally, results of the analyses for each research question guiding the present investigation are provided.

Descriptive Statistics

Descriptive statistics describe and summarize data. The descriptive statistics utilized include means, standard deviations, and internal consistency for each variable in the study. Participant characteristics were described using frequencies and percentages or means and standard deviations as appropriate to the level of measurement. The S.T.A.R. instruments for kindergarten, first, second, and third grade can be found in Appendix C thru Appendix F respectively.

Missing Data

Data was collected from 1060 students from eight schools in six school districts across the United States. Cases with any missing data from either the pretest or post-test were removed from the data set using list-wise deletion, which resulted in the deletion of 154 cases (14.5%); reasons for missing data were not specified in the data set provided to the researcher of the current study. Although several different alternatives exist for the handling of missing data (i.e. mean substitution, maximum likelihood estimate), list-wise deletion was determined to be an appropriate method. The total number of subjects
eliminated was minimal (under 15%) and resulted in an unsubstantial reduction in sample size across grade. Descriptive statistics for eliminated data are provided in Table 2. A review of the data also indicated that the selected sample remained comparable to the original sample’s characteristics. The resulting sample size, used for all analyses associated with the current study, was 906. Of the eliminated cases, 27 cases were missing complete data from either the pretest or post-test (i.e. no data for any of the 10 items on the S.T.A.R. instrument). Those with missing data seldom had more than 1-2 items omitted; however, 6 pretests and 5 post-tests had more than one-third of items missing and one case was missing more than 1/3 of the items for the pre and post-test.

Table 2

Descriptive Statistics for Eliminated Data

<table>
<thead>
<tr>
<th>Grade</th>
<th>Original N (%)</th>
<th>Missing N (%)</th>
<th>% Eliminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten</td>
<td>171 (16.1%)</td>
<td>41 (26.6%)</td>
<td>23.97%</td>
</tr>
<tr>
<td>First Grade</td>
<td>349 (32.9%)</td>
<td>51 (33.1%)</td>
<td>14.61%</td>
</tr>
<tr>
<td>Second Grade</td>
<td>326 (30.8%)</td>
<td>48 (31.2%)</td>
<td>14.72%</td>
</tr>
<tr>
<td>Third</td>
<td>214 (20.2%)</td>
<td>14 (9.1%)</td>
<td>6.54%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1060 (100%)</strong></td>
<td><strong>154 (100%)</strong></td>
<td><strong>14.53%</strong></td>
</tr>
</tbody>
</table>

*Note: % eliminated represents the percentage of original cases per grade that were eliminated.*

Participant Characteristics

The final sample consists of 906 students who completed the pre-test and post-test after receiving the Be a Safety Kid curriculum. 441 participants were male (48.7%), 459 were female (50.7%), and 6 were not specified (0.7%). This sample is almost identical to the original sample provided to the current study’s researcher which was 48.9% male, 50.3% female, and 0.8% not specified. Of the 906 total participants, there were 130 kindergarteners (14.3%), 298 first graders (32.9%), 278 second graders (30.7%), and 200
third graders (22.1%). Information regarding participants’ race and age was not collected.

The participants had to have parental consent, student assent, regular attendance for the intervention sessions, and average intelligence in order to be included in the study. A detailed description of the sample is provided in Table 3.

Table 3

Descriptive Statistics

<table>
<thead>
<tr>
<th>Grade</th>
<th>Gender</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten</td>
<td>Male</td>
<td>62</td>
<td>47.7%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>68</td>
<td>52.3%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>130</td>
<td>14.3%</td>
</tr>
<tr>
<td>First Grade</td>
<td>Male</td>
<td>133</td>
<td>44.6%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>159</td>
<td>53.4%</td>
</tr>
<tr>
<td></td>
<td>Not Specified</td>
<td>6</td>
<td>2.0%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>298</td>
<td>32.9%</td>
</tr>
<tr>
<td>Second Grade</td>
<td>Male</td>
<td>131</td>
<td>47.1%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>147</td>
<td>52.9%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>278</td>
<td>30.7%</td>
</tr>
<tr>
<td>Third</td>
<td>Male</td>
<td>115</td>
<td>57.5%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>85</td>
<td>42.5%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>200</td>
<td>22.1%</td>
</tr>
<tr>
<td>Total</td>
<td>Male</td>
<td>441</td>
<td>48.7%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>459</td>
<td>50.7%</td>
</tr>
<tr>
<td></td>
<td>Not Specified</td>
<td>6</td>
<td>0.7%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>906</td>
<td>100%</td>
</tr>
</tbody>
</table>

Statistical Assumptions

Confirmatory factor analysis was used to determine the stability and validity of content areas (e.g., knowledge, performance, and school safety) across the pretest and post-test for each grade. CFA is intended to assess how well specified relationships
between individual scale items and latent (i.e., unmeasured) factors are supported in a sample. CFA is often the analytic tool of choice for developing and refining measurement instruments, assessing construct validity, identifying method effects, and evaluating factor invariance across time and groups (Brown, 2006). Exploratory Factor Analysis (EFA) is more appropriate for examining relationships that lack a theoretical or empirical underpinning and also when no prior assumptions about the data are held, aside from an unspecified relationship between observed items and latent factors. Thus, confirmatory factor analysis techniques were selected over those associated with exploratory factor analysis and determined to be the most useful application for investigating the validity of the S.T.A.R. instrument.

When conducting a CFA, it is recommended that at least two items comprise each factor; a minimum of three is more commonly suggested (Kline, 2005). This was achieved in the current study for all S.T.A.R. instruments except for kindergarten. The kindergarten S.T.A.R. instrument has only one item for the performance factor in its model; however, all other S.T.A.R. instruments examined contained two or more items per factor. It is important to note that this recommendation tends to be less critical as sample size increases (Kline, 2005). A power analysis of close fit (McCallum et al., 1996) was conducted and based on those results, the sample size for kindergarten was determined to have moderate power; however, the statistical power for all other grades was large enough to sufficiently detect differences where present.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett’s test of sphericity were conducted on the pretest and post-test sample for each model group (described below) to determine the appropriateness of the factor analysis. The
KMO statistic varies between 0 and 1, where a value of 0 indicates that the sum of partial correlations is large relative to the sum of correlations and diffusion exists in the pattern of correlations. KMO values of 0 suggest that a factor analysis would likely not be appropriate. A value closer to 1 indicates that patterns of correlations are relatively compact and so factor analysis should yield distinct and reliable factors (Spicer, 2005). Kaiser (1974) recommends accepting values greater than .50 with values between .50 and .70 as mediocre, values between .70 and .80 as good, values between .80 and .90 as great, and values above .90 as superb. The KMO statistics in this study fell in the acceptable range for all groups except the kindergarten post-test, with values between .515 and .606, making factor analysis appropriate for this study. The kindergarten post-test data produced a KMO value of .422, indicating that the factor analysis may not yield distinct and reliable factors. Therefore, results from the kindergarten post-test CFA should be interpreted with caution. Bartlett’s measure of sphericity tests the null hypothesis that the original correlation matrix is an identity matrix. A significance value less than the designated alpha level of .05 indicates that there are relationships between the variables. The Bartlett’s test values in this investigation suggested a factor analysis would be appropriate for all pretest and post-test groups with significance values of <.001 for a majority of the groups. See Table 4 for detailed CFA assumption statistics.

A repeated measures analysis of variance (ANOVA) was conducted to evaluate the change in scores on the S.T.A.R. instrument before and after the Be a Safety Kid curriculum. The ANOVA method is based on the following three assumptions: normality, independence, and homogeneity of variance (Shannon and Davenport, 2001). And specifically for the repeated measures ANOVA, there is an additional assumption of
sphericity or homogeneity of covariance. First, each sample is assumed to be drawn from a normally distributed population. Second, each person’s score is assumed independent of all other scores, and each treatment level is independent of the others. Third, the variances from each population are assumed equal. Finally, it is assumed the levels of the within subject variables are equally related to each other. Effect size was used to determine the strength of the effect of any changes detected in knowledge after youth received the curriculum. Assumptions were met for all research questions.

Table 4

CFA Assumption Statistics

<table>
<thead>
<tr>
<th>Grade</th>
<th>Model</th>
<th>KMO</th>
<th>Bartlett’s Test of Sphericity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>$X^2$</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>Pretest</td>
<td>.554</td>
<td>100.275</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>.442</td>
<td>56.617</td>
</tr>
<tr>
<td>First/Second</td>
<td>Pretest</td>
<td>.515</td>
<td>139.126</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>.606</td>
<td>202.797</td>
</tr>
<tr>
<td>Third</td>
<td>Pretest</td>
<td>.599</td>
<td>154.292</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>.549</td>
<td>112.995</td>
</tr>
</tbody>
</table>

Data Analysis

Research Question 1

The first research question was designed to determine the validity of the S.T.A.R. instrument and its alignment with the constructs designated through its creation. Specifically, is the S.T.A.R. instrument a stable and valid assessment tool for evaluating knowledge, gauging performance of prosocial behaviors, and evaluating perception of school safety? It was hypothesized that statistical analysis would confirm a three factor model for each S.T.A.R. instrument (kindergarten, first/second, and third grade)
corresponding with the designated constructs and that each model would remain stable over time. The structure for each instrument was based on theoretical grounds or results of prior empirical studies as mentioned above. Due to variations in item wording across instrument versions, separate analyses were conducted for kindergarten and third grade instruments. Also, the first item on the kindergarten S.T.A.R. instrument was dropped from all analyses due to lack of variance. The item wording on the first and second grade versions of the S.T.A.R. instrument were similar, therefore, the data were combined and examined as one model. The three models examined were:

1. Kindergarten—A three factor model where Questions 2 through 4 and Questions 6 through 8 would align with knowledge; Question 5 would align with anticipated performance of prosocial behaviors; and Questions 9 and 10 would align with perception of school safety.

2. First/Second Grade—A three factor model where Questions 1 through 4 and Questions 7 and 8 would align with knowledge; Questions 5 and 6 would align with anticipated performance of prosocial behaviors; and Questions 9 and 10 would align with perception of school safety.

3. Third Grade—A three factor model where Question 2 and Questions 5 through 8 would align with knowledge; Questions 1, 3, and 4 would align with anticipated performance of prosocial behaviors; and Questions 9 and 10 would align with perception of school safety.

To assess for overall validity, construct and face validity were examined. Face validity was determined prior to the inception of this study by asking experts in the fields of school psychology, intervention implementation, and child violence for their expert
opinions of the S.T.A.R. instrument during the creation. Multiple school psychologists, police officers, the creator of the Be a Safety Kid curriculum, statistics professors, teachers, principals, and children provided corrections and input concerning details of the instrument and its alignment with theoretical constructs. In order to determine construct validity in the current study, confirmatory factor analysis was conducted using LISREL 8.80 (Jöreskog & Sörbom, 2006) with maximum likelihood estimation to assess for model fit. Each model was examined twice, using pretest data and then post-test data, to determine construct validity over time. Descriptive statistics for pretest and post-test questions are provided in Appendix A.

The assessment of overall model fit (for each of the individual models described above) to the data was based on multiple fit indices (e.g., non-normed fit index [NNFI, also known as TLI], comparative fit index [CFI], root mean square error of approximation [RMSEA]). A review of SEM reporting practices by Schreiber and colleagues (2006) suggests utilizing the TLI, CFI, and RMSEA fit indices for one-time analyses. Non-normed fit indices ≥ .95 signify a better fit; however, NNFI can be greater than 0 or less than 1 for acceptance (Schreiber, Nora, Stage, Barlow, & King, 2006). Higher CFI values signify better fit than do lower ones, with values of approximately .90 (or above) desirable (Kline, 2005). RMSEA is often referred to as a “badness of fit” index, in that low values are suggestive of good model fit. Values ≤.05 are preferable, but anything between .05 and .08 is typically viewed as reasonable (Kline, 2005). For CFA, the reliability of the observed variables in relationship to the latent constructs (also known as the squared multiple correlations) should also be reported to determine the
proportion of variance accounted for in the endogenous variables (Schreiber et al., 2006). These guidelines were utilized in the interpretation of results in the present study.

Comparison of fit across pretest and post-test models was based on examination of the Akaike Information Criterion (AIC) values associated with each model. The AIC facilitates selection among competing non-hierarchical models (i.e., models that are not subsets of one another) estimated with the same data (Kline, 2005); global indices such as the CFI and RMSEA are not appropriate for this purpose. The model with the lowest AIC value is generally regarded as the best fitting among competing models (Kline, 2005). However, CFA models should not be accepted or rejected solely on the basis of statistical grounds. Argument for the adequacy of a proposed model can (and perhaps should) be strengthened by incorporation of theory, professional judgment, and/or persuasion (Reise, Widaman, & Pugh, 1993).

**Kindergarten**

Using the overall model fit guidelines above, the first model examined was the kindergarten S.T.A.R. instrument. Based on confirmatory factor analysis used to establish a model with the closest fit to the data, none of the kindergarten models hypothesized had adequate fit. Solutions for the kindergarten model using pretest and post-test data were unable to converge after 210 iterations and no models were identified; therefore, no squared multiple correlation parameters were calculated and the proportion of variance explained by each item could not be determined. Based on reported estimations, the pretest model had a poor fit with an estimated CFI of 0.81, RMSEA 0.60, NNFI 0.72, and model AIC 77.19. The post-test model also produced a poor fit with an estimated CFI of 0.61, RMSEA 0.026, NNFI 0.42, and model AIC 68.07. A comparison of fit across
models suggests that the post-test model is the best fitting model of the two; however, given the poor fit of both models, these results should be interpreted with caution. Chi-square, degrees of freedom, CFI, RMSEA, NNFI, and AIC estimates are reported in Table 5.

**First/Second Grade**

The second model examined was the first and second grade S.T.A.R. instrument. Based on CFA results, the proportion of variance accounted for in each variable was determined to be low across all variables for both the pretest and the post-test, indicating that the model explains little of the variation for items on the instrument. Squared multiple correlation (i.e. $R^2$) values are reported in Table 6. In terms of model fit, the first/second grade pretest model had a mediocre fit with an estimated CFI of 0.83, RMSEA 0.029, NNFI 0.76, and model AIC 93.02. The post-test model produced a good overall fit with an estimated CFI of 0.90, RMSEA 0.032, NNFI 0.86, and model AIC 96.97. The CFI, RMSEA, and NNFI indices all indicate a better model fit for the post-test model, although a comparison of fit across models using the AIC indices suggests that the models are similar. Chi-square, degrees of freedom, CFI, RMSEA, NNFI, and AIC estimates are reported in Table 5.

**Third Grade**

The final model examined was the third grade S.T.A.R. instrument. CFA results indicated a wide range of values for the proportion of variance accounted for across variables. Many of the $R^2$ values were low, similar to the results from the first/second grade model, with the exception of Question 5 on the 3rd grade post-test model. 95% of the variance in Question 5 in the post-test model is explained by the Knowledge factor. Interestingly, the
squared multiple correlation for Question 9 on the pretest model produced an $R^2$ value above 1, indicating that the error variance is negative. Squared multiple correlations (i.e. $R^2$) are reported in Table 7. In terms of model fit, the third grade pretest model had a moderate fit with an estimated CFI of 0.87, RMSEA 0.05, NNFI 0.82, and model AIC 93.75. The post-test model produced a similar overall fit with an estimated CFI of 0.82, RMSEA 0.046, NNFI 0.75, and model AIC 91.43. A comparison of fit across models using the AIC indices suggests that the post-test has a slightly lower AIC index; however, the overall models are similar. Chi-square, degrees of freedom, CFI, RMSEA, NNFI, and AIC estimates are reported in Table 5.

Table 5

*Comparison of CFA Model Fit Indices*

<table>
<thead>
<tr>
<th>Grade</th>
<th>Model</th>
<th>N</th>
<th>$X^2$</th>
<th>df</th>
<th>CFI</th>
<th>RMSEA</th>
<th>NNFI</th>
<th>AIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten</td>
<td>Pretest</td>
<td>130</td>
<td>112.50</td>
<td>36</td>
<td>0.81</td>
<td>0.060</td>
<td>0.72</td>
<td>77.19</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>130</td>
<td>52.96</td>
<td>36</td>
<td>0.61</td>
<td>0.026</td>
<td>0.42</td>
<td>68.07</td>
</tr>
<tr>
<td>First/Second</td>
<td>Pretest</td>
<td>576</td>
<td>235.73</td>
<td>45</td>
<td>0.83</td>
<td>0.029</td>
<td>0.76</td>
<td>93.02</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>576</td>
<td>142.88</td>
<td>45</td>
<td>0.90</td>
<td>0.032</td>
<td>0.86</td>
<td>96.97</td>
</tr>
<tr>
<td>Third</td>
<td>Pretest</td>
<td>200</td>
<td>181.73</td>
<td>45</td>
<td>0.87</td>
<td>0.05</td>
<td>0.82</td>
<td>93.75</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>200</td>
<td>121.62</td>
<td>45</td>
<td>0.82</td>
<td>0.046</td>
<td>0.75</td>
<td>91.43</td>
</tr>
</tbody>
</table>
Table 6

**Squared Multiple Correlations (First/Second Grade)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor</th>
<th>Pretest $R^2$</th>
<th>Post-Test $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1</td>
<td>Knowledge</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Question 2</td>
<td>Knowledge</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Question 3</td>
<td>Knowledge</td>
<td>0.02</td>
<td>0.10</td>
</tr>
<tr>
<td>Question 4</td>
<td>Knowledge</td>
<td>0.01</td>
<td>0.04</td>
</tr>
<tr>
<td>Question 5</td>
<td>Skill</td>
<td>0.00</td>
<td>0.12</td>
</tr>
<tr>
<td>Question 6</td>
<td>Skill</td>
<td>0.09</td>
<td>0.03</td>
</tr>
<tr>
<td>Question 7</td>
<td>Knowledge</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Question 8</td>
<td>Knowledge</td>
<td>0.01</td>
<td>0.04</td>
</tr>
<tr>
<td>Question 9</td>
<td>Safety</td>
<td>0.47</td>
<td>0.14</td>
</tr>
<tr>
<td>Question 10</td>
<td>Safety</td>
<td>0.02</td>
<td>0.07</td>
</tr>
</tbody>
</table>

Table 7

**Squared Multiple Correlations (Third Grade)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor</th>
<th>Pretest $R^2$</th>
<th>Post-Test $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1</td>
<td>Skill</td>
<td>0.03</td>
<td>0.02</td>
</tr>
<tr>
<td>Question 2</td>
<td>Knowledge</td>
<td>0.31</td>
<td>0.00</td>
</tr>
<tr>
<td>Question 3</td>
<td>Skill</td>
<td>0.03</td>
<td>0.19</td>
</tr>
<tr>
<td>Question 4</td>
<td>Skill</td>
<td>0.11</td>
<td>0.06</td>
</tr>
<tr>
<td>Question 5</td>
<td>Knowledge</td>
<td>0.07</td>
<td>0.95</td>
</tr>
<tr>
<td>Question 6</td>
<td>Knowledge</td>
<td>0.18</td>
<td>0.08</td>
</tr>
<tr>
<td>Question 7</td>
<td>Knowledge</td>
<td>0.05</td>
<td>0.02</td>
</tr>
<tr>
<td>Question 8</td>
<td>Knowledge</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td>Question 9</td>
<td>Safety</td>
<td>0.00</td>
<td>0.14</td>
</tr>
<tr>
<td>Question 10</td>
<td>Safety</td>
<td>0.01</td>
<td>0.17</td>
</tr>
</tbody>
</table>

**Research Question 2**

The second research question sought to examine if the *Be a Safety Kid* curriculum influences prosocial knowledge of Kindergarten, 1st, 2nd, and 3rd grade students. It was hypothesized that there would be a statistical significance between student scores on the knowledge construct (defined using the models above) as measured by the S.T.A.R. instrument administered before participating in the *Be a Safety Kid* curriculum and after
completing the curriculum. No group comparisons were examined for the current
research question; therefore, Levene’s test of homogeneity of variance and Box’s test of
equality were not computed. Levene’s and Box’s statistics are appropriate for analyses
that involve a between-subjects variable. Mauchly’s Test of Sphericity, the most widely
used statistic for measuring the difference between the variance of differences, was
computed to assess for sphericity. Sphericity is said to be met if all the variances of the
differences are equal (Spicer, 2005). Mauchly’s test for this research question indicated
that the assumption of sphericity was not violated, which was expected. When the
repeated measures factor contains only two levels, as in this study (pretest and post-test),
the sphericity assumption is always met.

Multivariate test results indicate a significant difference between student
knowledge levels before and after completion of the Be a Safety Kid curriculum, \( F(1, 905) = 72.338, p < .001 \). Therefore, we reject the null hypothesis and contend there is a
significant difference in pretest and post-test scores among the students. After the
implementation of the curriculum, the overall sample mean increased from .8476 to .8974
for an increase of .0498. The increase indicates a statistically significant growth in
knowledge development. ANOVA results are presented in Table 8.

Table 8

Repeated Measures ANOVA for Knowledge Questions

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>( F )</th>
<th>p value</th>
<th>Partial Eta Squared</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>1</td>
<td>72.338</td>
<td>&lt;.001</td>
<td>.074</td>
<td>1.00*</td>
</tr>
<tr>
<td>Total</td>
<td>906</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Computed using alpha = .05
Research Question 3

The third research question investigates if the Be a Safety Kid curriculum influences anticipated performance of prosocial behaviors in Kindergarten, 1st, 2nd, and 3rd grade students. It was hypothesized that there would be a statistical significance between student scores on the performance construct (defined using the models above) as measured by the S.T.A.R. instrument administered before participating in the Be a Safety Kid curriculum and after completing the curriculum. Levene’s test of homogeneity and Box’s test of equality were not calculated because no group comparisons were made. Mauchly’s test of Sphericity indicated that as expected, the assumption of sphericity was not violated as the repeated measures factor consisted of only two levels.

Multivariate test results indicate a significant difference between student’s self-reported anticipated performance of prosocial behaviors before and after completion of the Be a Safety Kid curriculum, $F(1, 905) = 11.693, p < .001$. The null hypothesis was rejected; therefore, a significant difference exists in pretest and post-test scores among the students. After the implementation of the curriculum, the overall sample mean increased from .8607 to .8955 for an increase of .0348. The increase indicates a statistically significant growth in students’ belief of their likelihood of performing prosocial behaviors. Detailed ANOVA results are reported in Table 9.

Table 9

Repeated Measures ANOVA for Performance Questions

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>$F$</th>
<th>p value</th>
<th>Partial Eta Squared</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
<td>1</td>
<td>11.693</td>
<td>.001</td>
<td>.013</td>
<td>.927*</td>
</tr>
<tr>
<td>Total</td>
<td>906</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Computed using alpha = .05
Research Question 4

The fourth and final research question explored as a part of the current study examined if the Be a Safety Kid curriculum influences perception of school safety in Kindergarten, 1st, 2nd, and 3rd grade students. It was hypothesized that there would be a statistical significance between student scores on the safety construct (using Questions 9 and 10) as measured by the S.T.A.R. instrument administered before participating in the Be a Safety Kid curriculum and after completing the curriculum. No group comparisons were made and the assumption of sphericity was not violated as the repeated measures factor consisted of only two levels.

Based on multivariate test results, there was no significant difference between student perception of school safety before and after completion of the Be a Safety Kid curriculum, $F(1, 905) = .288, \ p = .59$; therefore, we fail to reject the null hypothesis that there are no differences in pretest and post-test scores on the safety construct among the students. After the implementation of the curriculum, the overall sample mean narrowly increased from .9023 to .9067 for an increase of .0044. The increase indicates a minor, non-significant growth in perception of school safety, though it is important to note that the construct mean is close to 1, which indicates that the average student perceives their school environment to be safe and there is someone they can talk to when they see something unsafe happening. Interestingly, a review of the individual item means (see Appendix A) showed that fewer students in grades 1-3 felt safe at their school after completing the curriculum, unlike the kindergarten students who demonstrated an increase in the number of students who reported feeling safe at school. This is in contrast to the increase across grades in students who reported that there was an adult they felt
could talk to if they saw something bad happen. Detailed ANOVA results for the safety construct are reported in Table 10.

Table 10

*Computed using alpha = .05*

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Summary

Results from the first research question analyzing the validity of the S.T.A.R. instrument indicate it does not consistently align with the constructs designed through its creation for the first, second, and third grade instruments using both pretest and post-test data. Although the results indicate several adequate to good model fits, low parameter estimates indicate multiple imperfections in the instrument. As a result, the instrument may not be differentiated enough to separate between theoretical concepts or it may be measuring a different type of prosocial thought process or behavior. Also, similar AIC values suggested that the models remained stable over time. A solution for the kindergarten models was unable to be converged and based upon the estimates generated, both models demonstrated a poor fit. Given the limited strength in power and slightly lower KMO value for the kindergarten data, these results should be interpreted with caution. In terms of stability, the kindergarten model using post-test data was determined to be a better fitting model, suggesting some instability across time. For the second and third research questions, statistical analyses supported the projected research hypotheses of the improvement of knowledge and anticipated performance of prosocial behaviors in
kindergarten, first, second, and third grade students as measured by the S.T.A.R. instrument. Students demonstrated a significant increase in knowledge of prosocial behaviors, as well as their anticipated performance of prosocial behaviors after completing the Be a Safety Kid curriculum. In terms of the fourth research question, which investigates perception of school safety, there was not a statistical significance between pre and post-test measurements, as assessed through repeated measures ANOVA. There was a minor increase in means demonstrating some increase in perception of safety across the sample, though it was not statistically significant. A review of the means indicated that the average student felt safe in their school environment and could identify a trusted person to talk to if they saw something unsafe happen both before and after they had received the curriculum. The conclusions of the research analysis suggest a need to modify and correct the conceptual features of the S.T.A.R. instrument to more properly align with theoretical constructs. It also supports the hypotheses that the Be a Safety Kid curriculum influences the dependent variables of knowledge and anticipated performance with a sample of kindergarten, first, second, and third grade students; and rejects the hypothesis that the curriculum would statistically increase students’ perception of safety in the school environment due to an already established perception of safety.
CHAPTER V
DISCUSSION

The results of the statistical analyses as presented in chapter four of the current study are more fully described in this chapter. Specifically, findings are briefly summarized, highlighting the answers to the research questions posed and whether or not the associated hypotheses were supported. A number of limitations of the present investigation are also provided, along with recommendations for future research. Finally, conclusions and implications based on these results are discussed.

Summary of Research Findings

This study sought to determine if the Be a Safety Kid curriculum would influence the knowledge and anticipated performance of prosocial behavior, as well as the perception of safety, in kindergarten, first, second, and third grade students as measured through the S.T.A.R. instrument. The first research question assessed the S.T.A.R. instrument’s validity and stability over time by measuring its ability to align with the constructs designated in the creation of the instrument using pretest and post-test data. Results indicated that the instrument does not consistently align with the constructs of knowledge, anticipated performance, and school safety as measured through face validity. Specifically, each instrument produced a three factor model, with the exception of the kindergarten instrument. Neither pretest nor post-test kindergarten models converged based on the data sample collected and the preliminary estimates provided indicated a poor fit for both. In terms of stability, results indicate all but the kindergarten models remained stable over time. Given the poor model fit and lack of parameter estimates for the kindergarten instrument, stability for this version of the S.T.A.R.
instrument should be interpreted with caution. Overall, the S.T.A.R. instrument was shown to be a stable measure of constructs overtime; however, the model fits explain little of the variation in the data for a majority of the questions created through theoretical and empirical analysis. Results also provide areas for continued improvement, including a more differentiated breakdown of the behavioral expression of anticipated performance and additional measures of skill knowledge.

The results indicated a lack of differentiated constructs on the S.T.A.R. instrument for all versions. This may be due to the low variance values examined in the instrument. The lack of cohesive constructs has also been displayed in previous research such as Carlo and Randall (2001); Eisenberg et al. (1999); Findlay et al. (2006); Hay (1994); Hay and Cook (2007); Jackson and Tisak (2001); Kidron and Fleischman (2006); Penner, Dovidio, Piliavin, and Schroeder (2005); and Radke-Yarrow and Zahn-Waxler (1986), and with lack of a consensus on the exact definition of prosocial behavior. These findings are also similar to the pilot study completed by Martin (2010) which examined the factorability of the 7th and 8th grade versions of the S.T.A.R. instrument. Overall, the findings of this pilot study align with the conclusions of previous researchers that more research needs to be conducted concerning the intricacies and cognitive aspects of prosocial behavior.

The second research question examined the change in knowledge from the pre-test measure to the post-test measure after completing the Be a Safety Kid curriculum. The prosocial literature identifies skill knowledge as an important aspect of engagement in prosocial behavior. Children who report higher levels of perceived comfort and efficacy in their knowledge of prosocial skills are both more willing to engage in
prosocial behaviors and to engage in greater numbers of actual behaviors, whether measured cross-sectionally or over time (Banyard, 2008; Barr & Higgins-D’Alessandro, 2007). Also, children are more likely to act if they know what to do and feel that they possess the necessary resources (Kidron & Fleischman, 2006; Stueve et al., 2006). Results from a repeated measures ANOVA concluded there was a statistically significant increase in knowledge attainment from the pretest to post-test measure. These findings were consistent with findings from previous literature and expected hypothesized results.

The third research question examined the anticipated performance of prosocial behaviors as measured by statistical differences in the pre and post-test administration of the S.T.A.R. instrument after receiving the curriculum. Results were similar to the previous research question with a significant increase in anticipated performance of prosocial behavior. After completing the curriculum, students reported that they believed they would tell an adult about a situation that could be unsafe. These findings are also consistent with previous literature and hypothesized results.

The fourth and final research question examined the change in perception of school safety from the pre-test measure to the post-test measure after completing the Be a Safety Kid curriculum. Research suggests that if schools promote the concepts of connectedness and cooperation, prosocial behaviors will increase (Carlo et al., 1999; Eisenberg, 2006; Brand et al., 2003). Results from a repeated measures ANOVA indicate no significant change in perception of school safety from the pretest to the post-test measure for the current study. Specifically, the means remained relatively stable across groups, indicating the sample may have already perceived their school environment to be safe and there was someone they could talk to when they saw something unsafe.
happening. Therefore, these findings are inconsistent with previous literature and did not demonstrate the hypothesized improvements.

These findings are consistent with research conducted by Midlarsky and Hannah (1985) and Malti, Gummerum, and Buchmann (2007), indicating an increase in prosocial behavior from kindergarten through a peak in middle elementary school years. Children's abilities to evaluate situational factors and behavioral options also become more complex and probably more accurate with age. For example, children's abilities to evaluate the potential costs and benefits for prosocial behavior become more sophisticated with age (Black, Weinstein, & Tanur, 1980). Younger children appear to weigh costs to the self more than older children when deciding whether or not to assist others (see Eisenberg, 1986) and they are also less attuned to the benefits of prosocial behavior (Lourenço, 1990, 1993; Perry, Perry, & Weiss, 1986). In the present study, the kindergarten students’ demonstrated a lower level of prosocial knowledge in comparison to the scores from students in the higher grades based on the mean scores found in Appendix A. Interestingly, the kindergarteners were the only group who did not exhibit an increase in mean on the individual knowledge questions. For example, more students in kindergarten reported that no one could get hurt in the scenario presented after completing the curriculum and they continued to report that they did not know what to tell the adult. The pre-test mean scores were higher on the knowledge questions for all other grades in comparison to the Kindergarten pre-test mean scores, including the first grade students. These conclusions may be attributed to children’s increasing awareness of the social cues governing prosocial behavior, children’s increasing capacity to regulate their emotions to the distress of others and to find alternative ways of responding besides
distress, and children’s greater ability to pursue self-interests, which diminishes the need for cooperation and generosity with others at all times (Hay, 1994). Although there was a slight decrease in mean on some of the individual items for kindergarten students, overall, students demonstrated an increase in knowledge gain after completing the curriculum. The significant increase in overall knowledge gain is consistent with the developmental level of the sample and its influence on the expression of these prosocial behaviors, as evidenced through a significant increase in anticipated performance.

Overall, students reported both before and after receiving curriculum instruction that they perceived their school environment to be safe. Contrary to previous research findings (Carlo, Fabes, Laible, & Kupanoff, 1999; Eisenberg, 2006; Brand, Felner, Shim, Seitsinger, & Dumas, 2003), increasing prosocial behavior did not significantly impact student’s perception of safety in the school. The findings from this study more closely support those from Barr & Higgins-D’Aleandro (2007) who found no significant relationship between school connectedness and prosocial behavior in typically developing adolescents. After completing the curriculum, fewer students in grades 1-3 reported feeling safe at their school, but more kindergarten students reported feeling safe. More students across all grades reported there was an adult at their school they felt they could talk to if they saw something bad happen. Future studies and especially intervention techniques should examine how teaching students about unsafe situations influences their perception of incidents that occur in the school environment.

**Limitations**

A number of limitations were inherent in the present investigation. Internal validity for the current study was difficult to establish due to the use of pre-existing,
intact groups (i.e. lack of randomization) and issues concerning the fidelity of the
S.T.A.R. instrument. Although teachers were given explicable directions by the creator of
the Safety Kids curriculum regarding instruction and completion of instruments, the
fidelity of the curriculum’s implementation was not measured; therefore it is unclear how
closely the teachers aligned with training and written directions across schools, districts,
and/or classrooms. The lack of direct experimenter involvement along with limited (twice
per school year) involvement from the creator of Safety Kids increases the chance that
the implementation of the curriculum or the S.T.A.R. instrument was inconsistent.

Also, questionnaire measures of prosocial responding consist of a series of
questions regarding the individuals’ own self-reported performance of prosocial acts, or
the frequency of enacting a variety of prosocial behaviors. They are imperfect indices of
prosocial responding because people may try to appear more altruistic than they really are
(Eisenberg & Mussen, 1989). Specifically, assumptions are made concerning the rater
including that the rater understands the construct, knows which behavior pertains to the
construct, understands the reference points, and must extract a cumulative impression of
behavior (Greener, 2000). The questions on the S.T.A.R. instrument were directly related
to hypothetical or anticipated situations and may not be directly related to real-life
scenarios. Also, this narrow approach increases measurement error in that extreme biases
are not attenuated as they would be if other evidence was considered (Swearer et al.,
2010).

Another limitation to the current study is that the Be a Safety Kid curriculum was
not created to align with standard practices in evidence-based curricula. Horner, Sugai,
and Anderson (2010) identified the following 6 criteria as educational practice for
evidence-based curricula: operational definitions of the practice, the settings, the qualifications of people who may use the practice, the target population, the outcomes, and the conceptual theory and basic mechanisms framing. First, the *Be a Safety Kid* curriculum was created in accordance with only three of these overarching concepts, specifically defining the definitions of practices, qualifications of people who may use the practice, and perceived outcomes. The creators of the curriculum focused on the specific elements of practice related to defining “Responsible Reporting” as pertinent to the curriculum. Second, the qualifications of individuals using the practice were outlined to include school professionals and staff only in order to appropriately convey the procedures of the curriculum after receiving the appropriate training. Lastly, the measurable outcomes expected were described through an increase in skill knowledge and anticipated prosocial behaviors; however, the lack of a solid overarching foundation of prosocial behaviors in the research makes it difficult to determine the conceptual theory underlying the curriculum to provide a framework for assessing why the curriculum works. Although some research has demonstrated significant and positive outcomes for school-based intervention and prevention efforts, not all efforts have been successful. This variety of outcomes suggests that although school-based and school-wide violence prevention efforts can be effective, success in one school or context does not guarantee similar success in another and vice-versa. Researchers are only beginning to understand the factors that contribute to this variation in outcomes across schools and across countries. Therefore, the limitations inherent in this study should be interpreted within the context of prosocial behavior research and the lack in clear consensus of program requirements and significant results.
Additionally, a lack of a consensus exists of the specific behavioral manifestations and definitions of the broad construct of prosocial behavior. This limitation was supported by the low squared multiple correlation values and low overall variance explained by the items on the S.T.A.R. instrument. Although there were limitations that may have affected the goodness of fit for the models measured, these results provide momentum for future areas of research. Research is needed to determine whether self-report measures are sufficiently sensitive to detect changes in prosocial behavior over time, especially given that school-based intervention efforts are inconsistent in terms of success.

**Implications**

Incidents of violence at school are rarely sudden, impulsive acts. In most cases, someone else was aware of one’s idea or plan to commit an unsafe or violent act before it happens. Research suggests that the time span between one’s decision to commit an unsafe act and the actual incident may be short; therefore, school administrators need to move quickly in order to intervene (Vossekuil, Fein, Reddy, Borum, & Modzeleski, 2002). Student’s, friends, school mates, and siblings are often those who know this valuable information; however, it is rarely conveyed to an adult. Students are an important part of prevention efforts as they are typically the first to hear about a potentially unsafe situation. Often times, students will not alert an adult on their own; therefore, schools are charged with encouraging students to be responsible reporters. This can be accomplished by indentifying and breaking down barriers in the school environment that are inadvertently discouraging students from coming forward with critical information (Vossekuil, Fein, Reddy, Borum, & Modzeleski, 2002). Students
who have an adult they feel safe talking to at school and who are aware of how an adult will react to the information they bring forward, are typically more inclined to volunteer information. Schools need to foster positive staff-student relationships and encourage students to find an adult at school who will listen and help with problems when necessary.

In order to foster positive staff-student relationships, educators must create a positive environment that includes the entire school community. All members of the school community, including parents, volunteers, and members of the surrounding community should participate in planning, creating, and sustaining a school’s culture of safety and respect. Having a fair, thoughtful, and effective system to respond to any information brought forward will encourage open communication between the staff, parents, and community members and foster strong relationships and cooperation. Through the use of violence prevention programs such as the Be A Safety Kid curriculum, schools can empower students to report unsafe events and create a safe environment for learning.

**Recommendations for Future Research**

The broad and narrow purposes of the current research study form the basis for several recommendations for future research in the area of prosocial behavior and violence prevention. For example, future research should emphasize the reasons why children use prosocial behavior and the external contexts in which these behaviors are most likely exhibited. These findings should correspond with assessment and intervention efforts to create a more comprehensive concept of prosocial behaviors and incorporate methods designed to increase and improve prosocial behaviors in the school environment.
Developing prosocial skills can be most influential when begun in early childhood so that children are able to comprehensively understand the positive aspects of prosocial interactions and the consequences of helping behaviors; however, further research is needed on the most effective approach to instructing the younger elementary school children. By examining how children interpret and react to social situations, school professionals, especially school psychologists, may better understand the intersection of the social and cognitive domains in the development of prosocial skills. A major challenge for administrators and researchers will be to identify ways to document the positive effects of prosocial skill programs in order to gain the committed, long-term support of teachers and parents.

Future research studies would also do well to investigate the stability of prosocial behavior and anticipated performance of skill overtime. Ideally, the same students would be assessed yearly beginning in early childhood throughout middle school. Also, documenting the number of incidents reported, as well as the number of violent incidents that occurred, would provide valuable information about the relationship between what students report they would do in hypothetical situation and what they actually do in the real world situation. Research has shown that children who report higher levels of perceived comfort and efficacy in their knowledge of prosocial skills are both more willing to engage in prosocial behaviors and to engage in a greater numbers of actual behaviors, whether measured cross-sectionally or over time (Banyard, 2008; Barr & Higgins-D’Alessandro, 2007). Also, children are more likely to act if they know what to do and feel that they possess the necessary resources (Kidron & Fleischman, 2006; Stueve et al., 2006). It would be useful to have insight into not only are student actually
performing the behaviors taught as part of the curriculum, but are the number of violent incidents in or around school decreasing over time as well.

Before selecting a specific violence prevention intervention, educators should investigate whether or not the intervention is based in research, if it promotes prosocial behavior, and if there are documented outcome data. In order to most accurately describe the Be a Safety Kid curriculum as evidence-based, there should be continued sufficient evidence to allow indisputable documentation that the practice is effective. Guidelines for assessing and outlining future research include the number of studies documenting an experimental effect, methodological quality of those studies, replication of findings, size of documented effect, and durability and generalizability of the observed effect (Horner, Sugai, & Anderson, 2010). Based on the previous pilot study by Martin (2010) and the results from the current study, the Be a Safety Kid curriculum has been shown to increase prosocial knowledge and skills in some elementary populations, but not in adolescents (7th and 8th grade). Further replications are needed to support or refute the effectiveness of the Be a Safety Kid curriculum in elementary school students.

**Conclusions**

Over the past two decades, the spike in school shootings has generated a sense of urgency to examine school violence and implement effective violence prevention strategies. Although public perception of school violence is disproportionately higher than crime statistics indicate (Hyman & Perone, 1998; National School Safety Center, 2010; Poland & McCormick, 1999), schools are charged with implementing violence prevention approaches in order to provide students with developmentally appropriate instruction in an atmosphere of safety and protection. As a result, it is of continued
importance for schools to help students identify the potential behaviors and moral reasoning that leads to these dangerous situations. At the forefront of media analysis is the examination of aggressive behaviors in school age children and its implications for school safety (Martin, 2010). Specifically, children who are exposed to aggression at school are at risk for behavioral problems, mood disorders, peer rejection, and criminal behavior (Haemaelaeinen & Pulkinnen, 1996; Hay & Pawlby, 2003; Scourfield et al., 2004). Although a continued investigation of these tendencies is critical, it is also pertinent to assess the behaviors that can mediate or prevent this violence from occurring. Resolving these issues through the instruction and intervention of prosocial behavior is a new implication in current and future research.

Despite the absence of a clear theory, prosocial development and prosocial behavior have often been explained in terms of emotional processes, such as empathy and sympathy, and sociocognitive skills, such as perspective taking and moral reasoning., Through works by Darley and Latané (1968), Piliavin and Piliavin (1972), and the early research of Piaget (1965) and Kohlberg (1984) with moral reasoning, it has been suggested that human behavior is guided by social problem solving strategies comprised of several information processing steps. People are assumed to collect and interpret contextual information, to select a behavioral goal, to generate and evaluate different response alternative, and then to act out the most positively assessed behavioral strategy. At an early age, children develop the pre-requisite skills to create prosocial behaviors by identifying and experiencing the emotions of themselves and others. Into later childhood, children continue to alter and redefine their understanding of prosocial behaviors; however, not until around 11 years of age do children develop from a belief in basic
empathy to having different emotions and valence toward the same object (Hay & Cook, 2007). Also, as children age, they are better able to understand the brevity of a potentially violent situation and the positive impact that comes from prosocial intervention, thus performing prosocial behaviors with more frequency.

In order to create an atmosphere of safety and protection in the school, everyone must participate to help prevent violence. While it may not be possible to prevent all violence from occurring, identifying the particular moral deficiencies of aggressive children and comparing these to the moral resiliencies of prosocial children may enlighten our understanding of individual differences in children’s social adaptation. Further research is needed to assess the effectiveness of violence prevention programs and their applicability to students from different ethnic, cultural, and socioeconomic backgrounds. Evaluating the development of prosocial behavior and how it differs across diverse samples in future empirical studies would be especially beneficial as we work to understand the diverse influences that promote actions for the benefit of others.
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APPENDIX A

Descriptive Statistics for S.T.A.R. Instruments

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<td>.453</td>
<td>.431</td>
</tr>
<tr>
<td>8</td>
<td>.67</td>
<td>.85</td>
<td>.471</td>
<td>.353</td>
</tr>
<tr>
<td>9</td>
<td>.95</td>
<td>.96</td>
<td>.229</td>
<td>.196</td>
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<tr>
<td>10</td>
<td>.95</td>
<td>.93</td>
<td>.218</td>
<td>.247</td>
</tr>
</tbody>
</table>
APPENDIX B

Kindergarten S.T.A.R Instrument

Student Name or ID Number ____________________________
Date ____________________
Pre-test / Post-test (circle one)
Male / Female (circle one)

S.T.A.R. Kindergarten

Teachers read questions and directions aloud. Students circle the best answer.

You are playing with your friend at recess. You see a man you do not know. He said he lost his puppy. He needs your help to find the puppy.

1. Circle what you used to know about this man and his puppy.

   ![Ear and Eye Icons]

2. In this story could someone get hurt?

   YES  NO

   ![Yes and No Symbols]

3. Should you report this to an adult?

   YES  NO

   ![Yes and No Symbols]

4. Do you know what to tell the adult?

   YES  NO

   ![Yes and No Symbols]

5. Would you be afraid to tell?

   YES  NO

   ![Yes and No Symbols]
<table>
<thead>
<tr>
<th><strong>Student Name or ID Number</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Pre-test / Post-test</strong></th>
<th>(circle one)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male / Female</strong></td>
<td>(circle one)</td>
</tr>
</tbody>
</table>

6. Being responsible means you are doing the right thing.

<table>
<thead>
<tr>
<th><strong>YES</strong></th>
<th><strong>NO</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>🌟</td>
<td>🖐️</td>
</tr>
</tbody>
</table>

7. A tattletale and a responsible reporter are the same thing.

<table>
<thead>
<tr>
<th><strong>YES</strong></th>
<th><strong>NO</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>🌟</td>
<td>🖐️</td>
</tr>
</tbody>
</table>

8. It is important to think about what we sense (see, hear, smell, taste, touch).

<table>
<thead>
<tr>
<th><strong>YES</strong></th>
<th><strong>NO</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>🌟</td>
<td>🖐️</td>
</tr>
</tbody>
</table>

9. Is there an adult you feel you can talk to at school when you see something bad happens?

<table>
<thead>
<tr>
<th><strong>YES</strong></th>
<th><strong>NO</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>🌟</td>
<td>🖐️</td>
</tr>
</tbody>
</table>

10. Do you feel safe at your school?

<table>
<thead>
<tr>
<th><strong>YES</strong></th>
<th><strong>NO</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>🌟</td>
<td>🖐️</td>
</tr>
</tbody>
</table>
APPENDIX C

First Grade S.T.A.R Instrument

Student Name or ID Number ____________________________
Date ____________________________
Pre-test / Post-test (circle one)
Male / Female (circle one)

S.T.A.R. Grade 1

Teachers read questions and directions aloud. Students circle the best answer.

You are sitting at lunch with your friends. Two students come up to your table. They tell you to give them your food or they will hurt you after school.

1. How did you know what was happening? Circle which sense you used

2. Could someone get hurt?
   YES  NO

3. Should you tell an adult?
   YES  NO

4. Do you know what information you need to tell an adult?
   YES  NO

5. Would you tell an adult about these kids?
   YES  NO
<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Would you be afraid to tell an adult?</td>
<td>![Thumb up]</td>
<td>![Thumb down]</td>
</tr>
<tr>
<td>7. A responsible reporter is a tattletale.</td>
<td>![Thumb up]</td>
<td>![Thumb down]</td>
</tr>
<tr>
<td>8. It is important to think about what we sense (see, hear, taste, touch, smell).</td>
<td>![Thumb up]</td>
<td>![Thumb down]</td>
</tr>
<tr>
<td>9. Is there an adult you feel you can talk to at school when you see something bad happens?</td>
<td>![Thumb up]</td>
<td>![Thumb down]</td>
</tr>
<tr>
<td>10. Do you feel safe at your school?</td>
<td>![Thumb up]</td>
<td>![Thumb down]</td>
</tr>
</tbody>
</table>
APPENDIX D

Second Grade S.T.A.R Instrument

Student Name or ID Number
Date
Pre-test / Post-test (circle one)
Male / Female (circle one)

S.T.A.R. Grade 2

Teachers read questions and directions aloud. Students circle the best answer.

You are riding home on the school bus when you hear a couple kids threatening another child. They are telling her that she better give them money or they will beat her up.

1. How did you know what was happening? Circle which sense you used.

2. Could someone get hurt?

   YES  NO

3. Should an adult know about this?

   YES  NO

4. Do you know what information you need to tell an adult about something that is unsafe or wrong?

   YES  NO

5. Would you tell an adult about those kids?

   YES  NO
6. Would you be afraid to tell an adult about something someone was doing that was unsafe or wrong?

   YES  NO
   🤚  🤚

7. Responsible reporting is telling the teacher so another child gets in trouble.

   YES  NO
   🤚  🤚

8. It is good to report something if it prevents someone from getting hurt.

   YES  NO
   🤚  🤚

9. Is there an adult you feel you can talk to at school when you know about something unsafe or wrong?

   YES  NO
   🤚  🤚

10. Do you feel safe at your school?

    YES  NO
    🤚  🤚
APPENDIX E

Third Grade S.T.A.R Instrument

Student Name or ID Number ____________________________

Pre-test / Post-test (circle one)

Male / Female (circle one)

S.T.A.R.  Grade 3

Teachers read questions and directions aloud. Students circle the best answer.

You and your friend are walking home from the school bus and you go past a man standing
beside a van with no windows. He asks you to help him get some boxes out of the back of the
van and he'll pay you. He seems really nice and it wouldn’t be hard to help him.

1. Would you help this man get the boxes?

   YES  NO
   ✓    ◯

2. Should an adult know about this?

   YES  NO
   ✓    ◯

3. Would you tell an adult?

   YES  NO
   ✓    ◯

4. Would you be afraid to report something to an adult that is unsafe or wrong?

   YES  NO
   ✓    ◯

5. Parents, teachers, bus drivers, and counselors are good people to talk to about something
   unsafe or wrong.

   YES  NO
   ✓    ◯
6. Do you know the information that you need to tell an adult about something that is unsafe or wrong?

   YES          NO
   👍             👎

7. If you tell an adult about something wrong or unsafe, there will be negative consequences. That means that something bad will happen.

   YES          NO
   👍             👎

8. Consequences are results of something that happens; and they can be good or bad.

   YES          NO
   👍             👎

9. Is there an adult you feel you can talk to at school when you know about something unsafe or wrong?

   YES          NO
   👍             👎

10. Do you feel safe at your school?

   YES          NO
   👍             👎