DEVELOPMENT AND MAINTENANCE OF VICTIMIZATION ASSOCIATED WITH BULLYING DURING THE TRANSITION TO MIDDLE SCHOOL: THE ROLE OF SCHOOL-BASED FACTORS

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DEVELOPMENT AND MAINTENANCE OF VICTIMIZATION ASSOCIATED WITH BULLYING DURING THE TRANSITION TO MIDDLE SCHOOL: THE ROLE OF SCHOOL-BASED FACTORS (233 pp.)

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The purpose of this study was to examine the trajectory of bullying victimization from third through sixth grade, as well as the role that school-based factors play in predicting victimization in grade six. Victimization is associated with negative social, emotional, educational, behavioral, and psychological short term and long-term outcomes (Hawker & Boulton, 2000; Swearer, Grills, Haye, & Cary 2004). National survey research suggests that about 20% of youth ages 12 to 18 report being victimized at school, with school being the most common place for victimization to occur (Musu, Zhang, Wang, Khang, & Ouderkerk, 2019). Rates of prevalence tend to increase as students transition from elementary to middle school (Dinkes, Kemp, Baum, & Snyder, 2009). There has been limited research that closely examines the school-based factors that may be associated with the increase in victimization as students transition to middle school.

This study utilized data collected as a part of a national study of youth development to explore victimization and associated factors during the later elementary years. A generalized linear mixed model examined the stability of the victim role in from third to sixth grade. A McNemar's test compared victimization prevalence in grades five and six. A binary logistic regression explored the predictive role of school-based factors

on victimization in the sixth grade. Results suggest role instability from grades three to six, a non-significant difference in overall victimization for grades five and six, and the importance of teacher-focused factors in predicting victimization in sixth grade.

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CHAPTER I

REVIEW OF THE LITERATURE

Victimization in American Schools

This chapter begins with a review of victimization and bullying perpetration in American schools. What follows is a review of school-based prevention and intervention strategies and programming, with a focus on evidence-based practices and the role of the school psychologist. This chapter then provides a review of the developmental trajectory of victimization. The next section provides an overview of the victim experience, including students who are at-risk, outcomes, and characteristics of victims. The chapter then addresses development and maintenance of victimization within the context of Bronfenbrenner's Social-Ecological Model (1979). The chapter concludes with a review of research and rationale for the current study.

Historical Context of Bullying

Bullying, teasing, and peer aggression are not novel concerns for parents and professionals in the field of education. However, documentation of the potential association between school violence and suicide directly or indirectly linked to bullying is a more recent occurrence. Whereas bullying was once, and sometimes continues to be considered a part of growing up, the increase in violent retaliation demands more attention and appropriate action (Furlong et al., 2003). Some of the first documented violent responses to being bullied occurred in Norway in the 1980's, where students were taking their lives as a result of intense bullying (Hazelden Foundation, 2015). These suicides were the catalyst for the development of Dr. Dan Olweus' Bullying Prevention

Program, first introduced in Norway and then successfully expanded to other countries (Hazelden Foundation, 2015). In the 1990's the United States of America saw an increase in violent school activity involving weapons and direct attacks on students and staff as well as suicides; all believed to be associated with experiences of bullying (Finley, 2014).

Legislation and policy. The increasing severity, frequency, and loss of life associated with bullying in the 1990's and early 2000's resulted in action to organize and initiate efforts to understand bullying. In addition to gaining a better understanding, there were increased efforts to pass legislation to prevent further violence (Felix & Furlong, 2008). In the early 2000s, this legislation was state-specific, often in the states where major violence had occurred (Furlong, Morrison, & Greif, 2003).

In 2003, Furlong, Morrison, and Greif surveyed 39 state departments of education to determine state level definitions of bullying; policies, regulations, requirements, and resources provided to schools. Furlong et al. (2003) found that the definitions of bullying were inconsistent from state to state. Additionally, states most often provided resources for school districts in the form of training for staff and students as well as internet resources, often without requirements to guide practice and implementation (Furlong et al., 2003). Meanwhile, educational researchers and professionals in the field continued to conduct and participate in research with the purpose of defining bullying in a more accurate way, understanding the prevalence of bullying, and developing evidence-based practices for addressing the problem (Furlong et al., 2003). One of the most commonly

used practices to come from this research is school-based bullying prevention and intervention programming.

Bullying legislation and laws continue to be developed and amended in the United States on a state-by-state basis (Stuart-Cassel, Bell, & Springer, 2011). In 2010, the U.S. Department of Education Programs and Policy Studies Services reviewed state law and legislation for school districts regarding bullying (Stuart-Cassel et al., 2011). In their 2011 review, Stuart-Cassel et al. found that the definition of bullying used at the state level is inconsistent and not necessarily reflective of the research-based definition used in the field. Results also suggest that 46 states have bullying laws, 45 of which require school districts to adopt bullying policies (Stuart-Cassel et al., 2011). Only 27 states have "encouraged or required" (Stuart-Cassel et al., 2011, p. xiv) the state to develop a model policy for districts to follow; however, 41 states have proactively modeled a policy for their districts. Additionally, 25 states required districts to create and apply training for school staff members (Stuart-Cassel et al., 2011). In terms of student education, 20 states required districts to implement "prevention, education, or awareness programs for students," (Stuart-Cassel et al., 2011, p. 34) while 11 additional states encouraged these efforts. Stuart-Cassel et al. (2011) also report that 36 states required district policy to include incident reporting procedures, and 22 states required or suggested that districts report the incidence of bullying.

Ohio law. In accordance with the Ohio Revised Code, Title 33, Chapter 3301, the Ohio State Board of Education created a model policy for "harassment, intimidation, and bullying" (Ohio Revised Code § 3301.22, para. 1) in order to aid Ohio school

districts in the mandatory creation of district-wide policy (Ohio Revised Code § 3313.666). These district policies must include appropriate definitions; actions to disseminate policy and disciplinary information; as well as procedures for investigating, documenting, reporting, notifying families of, and responding to incidents of bullying (Ohio Revised Code § 3313.666). If state and federal funds are allocated for the provision of prevention efforts, districts in Ohio should provide staff members with training regarding "harassment, intimidation, and bullying" (Ohio Revised Code § 3313.667, para. 2).

Federal law. There are currently no federal laws that regulate bullying (U.S. Department of Health and Human Services, n.d.a). However, school districts are required to respond to serious and repeated harassment of students that are members of protected classes. Such requirements are noted under (a) the Civil Rights act of 1964, (b) the Educational Amendments of 1972, (c) the Rehabilitation Act of 1973, (d) the Americans with Disabilities Act, and (e) the Individuals with Disabilities Education Act (U.S. Department of Health and Human Services, n.d.a). In this case, bullying a child or adolescent because of their race, color, national origin, sex, disability, or religion could be severe enough to be considered harassment and require further action by the school district (U.S. Department of Health and Human Services, n.d.a).

Taken together, these laws, policies, codes, and regulations provide support for school-based programs in order to (a) measure prevalence and assess the severity of bullying, (b) increase awareness and knowledge about bullying, (c) teach and improve skills for intervening and preventing bullying incidents, and (d) decrease the prevalence

of bullying in American schools. Espelage (2013) suggests that the effectiveness of bullying prevention programming can be supported via comprehensive and enumerated legislation and policy. Specifically, Espelage (2013) contends that federal and state bullying legislation must do more to protect at-risk children and adolescents. Those most at-risk for bullying victimization include children and adolescents identifying as LGBTQ; of racial, ethnic, and religious minority status; or with disabilities (Espelage, 2013).

Characteristics of Bullying and Victimization

The definition of bullying has been inconsistent in research and thus in practice, leading to misconceptions and misuse of the term by laypeople and professionals alike, as well as inaccurate measurement of victimization prevalence (Cornell & Bandyopadhyay, 2010; Cornell & Cole, 2012; Swearer, Espelage, Vaillancourt, & Hymel 2010). Leading researchers in the field have come to a consensus on a definition that is widely used and accepted. Victimization associated with bullying can be defined as repeated exposure to the negative and aggressive actions of a peer or group of peers that have more perceived status and power (Espelage & Swearer, 2003; Olweus, 1993a, 1993b, 1993c, 1994, 2010; Smith et al., 2002; Swearer et al., 2010). These interactions are intended to cause social, physical, or emotional harm; humiliation; and intimidation (Cornell & Bandyopadhyay, 2010; Espelage & Swearer, 2010; Olweus, 1993a, 1993b, 1993c, 1994, 2010; Smith et al. 2002; Swearer et al., 2010). Hawker and Boulton (2000) suggest that peer victimization can be defined as the *experience* of children who are the target of peer aggression. Victims are those who endure the persistent, negative or aggressive behavior and intentional harm committed by a peer or group of peers with more power.

It is important to distinguish bullying from other terms that are often used interchangeably with bullying; these include peer conflict, peer aggression, and peer or school violence (Bovaird, 2010; Cornell & Bandyopadhyay, 2010; Cornell & Cole, 2012; Orpinas & Horne, 2006). The differentiation between conflict, aggression, violence and bullying is found in the key components of the bullying definition (Orpinas & Horne, 2006). Bullying is repeated, is intended to cause harm, and is caused by someone with more power than the victim (Bovaird, 2010; Cornell & Cole, 2012). Aggression is defined as any action that intentionally causes others harm (Orpinas & Horne, 2006). According to the World Health Organization, violence is considered any negative use of power leading to harm of self or others (Butchart, Mikton, Dahlberg, & Krug, 2015; Krug, Mercy, Dahlberg, & Zwi, 2002). According to the U.S. Department of Health and Human Services' stopbullying.gov website (n.d.a), peer conflict is disagreement and contention between peers of equal power or status. Conflict, violence, and aggression do not require that all of the bullying criteria be met; whereas, negative peer interactions can only be considered bullying if they are repeated, intentionally harmful, and the result of an imbalance in power (Bovaird 2010; Cornell & Cole 2012; Orpinas & Horne, 2006). Victimization is negative behavior experienced by someone at the hand of another; this term is often used in reference to the victim in a bullying dynamic (Asher & Coie, 1990; Smith et al., 2002). While one can be the victim of aggression, violence, or peer conflict; for the purpose of this research, victimization will refer to the experience of being bullied. Thus, victims will be identified based on the frequency with which they are reported to be exposed to overt physical and verbal victimization.

Broad prevalence. Bullying victimization prevalence is most often reported in terms of the percentage of youth who report being bullied by others or are reported to be victims by others in a specified amount of time before responding to a survey. This is the case for the 2017 *School Crime Supplement to the National Crime Victimization Survey* and the 2015 *Youth Risk Behavior Survey*. Other survey data provide information about the percentage of students who report being perpetrators, being victimized, and being both perpetrator and victim of bullying.

The *2017 School Crime Supplement* surveyed 24,650,000 American youth ages 12-18 and found that 20.2% of youth reported being bullied in the 2016-2017 school year (Yanez & Seldin, 2019). These data were also used for the 2018 *Indicators of School Crime and Safety* (Musu, Zhang, Wang, Khang, & Ouderkerk, 2019). Of the surveyed youth, 29.5% of sixth graders report being bullied, 24.4% of seventh graders, 25.3% of eighth graders, 19.3% of ninth graders, 18.9% of tenth graders, 14.7% of eleventh graders, and 12.2% of twelfth graders (Yanez & Seldin, 2019). Female students were more likely to report victimization (23.8%) than male students (16.7%) (Yanez & Seldin, 2019) When considering race and ethnicity, students of two or more races, White students, and Black students were most likely to report victimization than were Hispanic or Latino students and Asian students (Musu et al., 2019). Further, students within the lower two brackets of household income were slightly more likely to report being victimized, followed by those in the highest bracket of household income (Yanez & Seldin, 2019). Victimization was most likely to occur for youth in towns (26.9%)

followed by youth in rural areas (23.8%), in cities (19.9%), and suburbs (18.1%) (Yanez & Seldin, 2019).

The 2015 *Youth Risk Behavior Survey* examined a national sample of ninth through twelfth graders, and sixth through eighth graders from 11 states. From September 2014 to December 2015, youth were asked to report if they were bullied in the 30 days before taking the survey. Results suggest that 15.5% of all high school students surveyed reported being electronically bullied; and 20.2% of high school students reported being bullied on school property (Kann et al., 2016). For sixth through eighth graders, the percentage of students who reported electronic bullying ranged from about 18% to about 29% by state (Centers for Disease Control [CDC], 2015). Between 38% and about 52% of middle school students surveyed in the 11 states indicated that they were bullied on school property in the 30 days prior to survey response (CDC, 2015).

Additionally, research studies in the fields of education and psychology have also aimed at accurate representation of bullying and victimization prevalence. Nansel and colleagues (2001) surveyed 15,686 sixth through tenth graders in the spring of 1998 and found that about 30% of students reported being engaged in a bullying dynamic. About 13% of students indicated that they perpetrated bullying, 10.6% indicated that they were the victim of bullying, and 6.3% suggested that they had acted as both perpetrator and victim (Nansel et al., 2001). More recently, Luxenberg, Limber, and Olweus (2015) provided updated data on the prevalence of different roles within the bullying dynamic as surveyed by the Olweus Bullying Questionnaire [OBQ]. In the 2013-2014 school year, a stratified random sample of 20,000 OBQ surveys for third through twelfth grade students

were analyzed. Luxenberg and colleagues (2015) found that about 14% of youth indicated being bullied two to three times per month in the 2013-2014 school year, while about 5% of youth reported that they perpetrated bullying during this time. The researchers found that the prevalence of victimization tended to decrease as students progressed in their schooling, while the percentage of those who reported perpetration remained more stable across grades, ranging from four to six percent (Luxenberg et al., 2015).

National trend data suggest that the prevalence of bullying and victimization are on a decreasing trend (CDC, 2015; Musu et al., 2019). In order to support this decreasing trend, more research is needed to understand the experience of those victimized, understand the role that schools play in victimization and perpetration, and examine effective school-based prevention and intervention efforts. More detailed information about the prevalence of victimization is provided in a subsequent section detailing the victim experience.

Types of victimization. Bullying and victimization can be manifested in various forms, ranging from face-to-face to digital, indirect to direct, and verbal to physical. The National Association of School Psychologists (NASP) recognizes verbal, physical, relational/social, and electronic victimization as the forms of bullying manifested in the school-age children and adolescents (Felix, Green, & Sharkey, 2014; Finley, 2014; National Association of School Psychology [NASP], 2012). Verbal victimization, the most common form, can be considered any negative, threatening, offensive, abusive, or suggestive communication directed at another person (NASP, 2012). Physical

victimization is any outward physical display of aggression directed at another person or his or her belongings, which may include punching, hitting, kicking, or spitting (NASP, 2012). Relational or social victimization is defined as negative relational actions affecting one's social standing such as rumor spreading and social exclusion (NASP, 2012). Electronic victimization is any form of victimization that takes place over social media, cell phone, or other electronic communication devices or platforms (NASP, 2012). These manifestations of bullying must also adhere to the comprehensive definition of bullying, in that they are repeated, negative interactions directed at a person with less perceived power, and are intended to cause harm.

Roles in the bullying dynamic. A student can be involved in a bullying dynamic in a number of ways. These include the roles of bully, victim, bully-victim, and bystander (Espelage & Swearer, 2003; Orpinas & Horne, 2006; U.S. Department of Health and Human Services, n.d.a). Espelage and Swearer (2003) contend that bullying and victimization fall on a continuum, suggesting that children are capable of acting in more than one role, and can display multiple types of bully and victim behavior. A child who bullies can do so with physical or verbal aggression; passively by joining in with or assisting those who bully to increase status and self-satisfaction; and in indirect ways to disrupt relationships (Orpinas & Horne, 2006; U.S. Department of Health and Human Services, n.d.a). Children can also be victims in several ways. Passive victims are often targeted because they are different from their peers and are less likely to defend themselves due to less support of peers or lack of verbal or social skills (Orpinas & Horne, 2006). Proactive victims include children who are targeted because they may be

perceived to provoke their peers, namely bullies, with "inappropriate behavior" (Orpinas & Horne, 2006, p. 22).

Additionally, a child can hold dual roles by being victimized by one or more peers and also perpetrating bullying behavior (U.S. Department of Health and Human Services, n.d.a). Bystanders are the children and adolescents that witness victimization and either reinforce the actions by being present and watching, assist the bully by joining in, or defend the child who is being bullied (Orpinas & Horne, 2006; U.S. Department of Health and Human Services, n.d.a). Children may engage in multiple roles or may change roles over time. More information the students who most commonly hold these roles, as well as information about the transition and stability of role is provided in subsequent sections.

Students who perpetrate bullying. What follows is a description of the characteristics and outcomes associated with bullying perpetration and bully-victims. Detailed information about the predictors, outcomes, and characteristics about those who are victimized is provided in a subsequent section. According to Olweus (1993a) the perpetrators of bullying are often (a) aggressive, (b) short tempered, (d) noncompliant, (e) exercise power over others, and (f) lack empathy for others. The research suggests mixed results for social skills of bullies (Swearer et al., 2010). According to Swearer et al. (2010) researchers such as Slee (1993) and Warden and Mackinnon (2003) contend that students who bully demonstrate social skills deficits. Whereas, Kaukiainen et al., (1999) and Vaillancourt et al. (2003) suggest that bullies are more popular, more socially skilled, and more socially powerful among peers. Cook, Williams, Guerra, Kim, and Sadek

(2010) conducted a meta-analysis that explored predictors of bullying victimization and perpetration. Results suggest that youth who perpetrated bullying were most likely to demonstrate the following characteristics: academic difficulty; social understanding but difficulty with problem-solving; negative thoughts about others, school, community, and the self; and a difficult relationship with parents who are less engaged (Cook et al., 2010). Youth who serve as both bully and victim tend to demonstrate internalizing and externalizing difficulties, limited social skills, academic difficulty, negative thoughts about the self and others, is likely susceptible to negative influence, and is both "rejected and isolated by peers" (Cook et al., 2010, p. 76).

In a review of research, Espelage and Swearer (2010) indicate that that children who bully also demonstrate anger, anxiety, and depression. Youth who hold the role of both bully and victim tend to experience greater anxiety and depression than their peers who are bullied or perpetrate bullying (Austin & Joseph, 1996; Swearer, Song, Cary, Eagle, & Mickelson, 2001). Bullies are at a greater risk for short and long-term externalizing problems such as delinquent, criminal, and violent behavior; academic struggles; and involvement with drugs and alcohol (Farrington & Baldry, 2005; Olweus, 1993a). Bully-victims are the most at-risk for mental health problems, including internalizing problems such as depression (Farrington & Baldry, 2005; Kumpulainen, Räsänen & Henttonen, 1999; Swearer et al., 2001). Bullies and bully-victims are at-risk for negative short term and long-term consequences as a result of their engagement in a bullying dynamic; the same is true for students who are victimized, although the outcomes differ in significant ways.

Assessment and measurement of bullying. Much research has been dedicated to the assessment and measurement of bullying and victimization. Understanding how bullying and victimization is measured is important for our understanding of prevalence, and how that information is obtained and shared. As was previously indicated, much national survey research has taken place in order to provide data about the prevalence of bullying and victimization. These surveys ask youth or adults to consider a certain time period prior to their engagement in the survey, and indicate if the student has perpetrated bullying, been the victim of bullying, or both. Often, these surveys ask more specific questions about the type of bullying or victimization experienced or perpetrated, where it occurred, how often it occurred, and even what outcomes have been experienced as a result. While survey data provide the field with an estimation of the prevalence of these experiences, it is important to note the limitations to measuring bullying.

The definition of bullying includes specific aspects that differentiate it from peer aggression or other conflict. This includes an imbalance of power between the victim and perpetrator(s), actions that are repeated and chronic, and actions that are aggressive in nature and intended to cause the victim harm (Bovaird, 2010; Cornell & Bandyopadhyay, 2010; Cornell & Cole, 2012). These characteristics of bullying and victimization, different measurement formats, as well as other measurement difficulties can result in inaccurate estimations of bullying and victimization prevalence.

One such difficulty is the definition of bullying. Many youth, especially younger children, do not have an accurate understanding of the complete definition of bullying; thus, when asking students to report if they have been bullied, they might not provide

accurate estimations based on their experience and knowledge (Bovaird, 2010; Cornell & Bandyopadhyay, 2010; Cornell & Cole, 2012). Even if provided a definition of what bullying is, there may be discrepancies in that definition from study to study and students may not answer accurately based upon misremembering, inconsistent responses, or a desire to answer in a way that they perceive as appropriate or desired (Bovaird, 2010; Cornell & Bandyopadhyay, 2010; Cornell & Cole, 2012). Vaillancourt et al. (2010) suggest that reported rates decrease when youth are provided a definition before asked to report rates of bullying. Additionally, scales may differ in terms of how they quantify frequency of bullying or victimization. Solberg and Olweus (2003) suggest using the frequency of two to three times per month; as youth who are victimized at this frequency tend to demonstrate significant differences in internalizing behaviors than peers victimized less frequently.

Bovaird (2010) and Cornell and Bandyopadhyay (2010) also contend that bullying and victimization can be measured in a number of ways, including rating scales, binary responses, frequency counts, and peer or adult reports. Self-report scales used to measure bullying have little research to support their reliability and validity (Cornell & Bandyopadhyay, 2010). Survey anonymity can also result in inaccurate data, as it may not allow for the assessment of imbalance of power and chronic victimization. Cornell and Bandyopadhyay (2010) suggest that when anonymous surveys are used, it is difficult to get a true measure of prevalence or change in victimization or perpetration as there is no indication of the identity of perpetrators and victims.

Inconsistencies are also demonstrated when youth answer a broad, binary question about perpetration or victimization in a way suggesting they are not involved but endorse items more specific to differing types of bullying/victimization that suggests involvement (Cornell & Cole, 2012; Vaillancourt et al., 2010). Multiple questions that are specific to the different types of bullying or victimization also allow for a better understanding of what that student's experience has been, as their perpetration or victimization could encompass multiple types of bullying (Cornell & Cole, 2012).

As an alternative to the use of self-report measures, Cornell and Bandyopadhyay (2010) suggest the use of peer reports or confidential, not anonymous, surveys. Peer reports involve asking students to nominate classmates who fit a particular description (e.g., "Identify classmates who bully others"). Cornell and Bandyopadhyay (2010) report that the use of such measures has been validated in the literature, and conclude that peer report is a useful measure because it allows school personnel to identify those perceived as bullies and victims, validate such roles in follow-up interviews, and take individual action to support resolution.

Peer reports ask students to identify or nominate peers that fit a certain description (Cornell & Bandyopadhyay, 2010). Some of the same difficulties with self-report surveys also apply to peer nomination, as youth have to understand definitions, may have concerns regarding the social impact of rating peers, and inconsistency in how peers are measured across individuals and across studies (Cornell & Bandyopadhyay, 2010; Cornell & Cole, 2012). The research also suggests moderate correlations between peer identification or nomination tasks and student self-report. Ladd and Kochenderfer-Ladd

(2002) indicated that the concordance of self and peer report increase as kindergarten through fourth grade students progressed to higher grades. In a study of middle school students, Branson and Cornell (2007) found low concordance with peer and self-report for bullying, and moderate concordance for victimization.

Cornell and Bandyopadhyay (2010) suggest the use of confidential measures because these measures ask students to report their names and the names of perpetrators and victims while ensuring that their survey responses will be confidential, encouraging accurate responses. The research suggests that there is a negligible difference between youth who answer anonymously versus confidentially (Cornell & Cole, 2012). Confidential measures can potentially be used in conjunction with self-report measures to measure baseline information about bullying prevalence and provide longitudinal data about continued experiences with perpetration and victimization. Brief, anonymous or confidential measures that do not use the term "bullying" are recommended to assess elements of bullying and different forms of victimization (Felix & Furlong, 2008).

Triangulation of multiple points of data is supported by the bullying and victimization assessment research (Bovaird, 2010; Cornell & Bandyopadhyay, 2010; Cornell & Cole, 2012; Juvonen, Nishina, & Graham, 2001; Ladd & Kochenderfer-Ladd, 2002; Swearer et al., 2010). Bovaird (2010) posits that consideration of multiple measures of the behavior of interest allows for triangulation, which allows for a better understanding of true behavior versus error. Juvonen and colleagues (2001) suggest that multiple informants, specifically peers and the self, can provide information about *self-perception* as well as reputation. This comparison could also be relevant for measures

provided by other informants including parents and teachers. Bovaird (2010) contends that two or more informants can provide data triangulation and more accurate representations of bullying and victimization status; as "the combined judgement of the group" (p. 299) can be considered more accurate than the judgement of one group of informants alone (Cornell & Cole, 2012). A single rating of behavior from one informant does not accurately represent the prevalence of bullying as it does not allow for reliable and valid determination (Bovaird, 2010).

School-based Intervention

The following section provides an overview of school-based intervention and prevention techniques, as well as information about the factors that impact effective school practices in intervention. The school serves as an important context for understanding and addressing victimization among youth. What follows is an explanation of how these factors impact the student experience as it relates to the bullying dynamic.

The Role of Schools in Prevention and Intervention Efforts

The research suggests that bullying victimization is most likely to occur in the school-based setting (Musu, Zhang, Wang, Zhang, & Oudekerk, 2019) and that school climate can have an impact on student behavior, particularly aggressive behavior (Baker, 1998). Thus, it is important for school staff members to recognize bullying and to be able to intervene when bullying incidents arise. While increased supervision and awareness of bullying among staff can assist in the reduction of bullying in schools (Craig, Pepler, & Atlas, 2000; Smith & Shu, 2000; Wienke Totura, Green, Karver, & Gesten, 2009),

measures must be taken to increase the capacity of all school staff, especially teachers, to prevent and intervene. Given the amount of bullying that reportedly takes place in the classroom, this context provides an opportunity to impart knowledge, set standards, appropriately discipline perpetrators, support victims, and model appropriate behavior. With the help of school psychologists, school counselors, and school administrators, intervention programs or effective components of programs can be successfully implemented in order to build a school's capacity to address bullying.

School-based bullying prevention and intervention initiatives are efforts made by a classroom, school, or district to address bullying using systematic methods. Schools may adopt general strategies that include but are not limited to (a) school-wide policies, (b) increased supervision, (c) efforts to improve classroom and school climate, (d) assessment of needs, (e) staff training, (f) the formation of a committee with representation from school and community, and (g) school-wide screens for prevention and intervention efforts (Felix et al., 2014). Schools may also choose to implement universal, packaged prevention programs that are designed to increase bullying knowledge and awareness, and to build staff and student capacity to prevent and intervene (Swearer et al., 2010). These programs can also address more general social and emotional concerns (Felix et al., 2014). Packaged curricula generally require measurement of the problem, selection of a program that fits the needs of school, implementation, and program evaluation to determine the effectiveness of implementation (Felix et al., 2014; Plog, Epstein, Jens, & Porter, 2010).

Program effectiveness. Due to the demand for research-based and evidence-based programs that meet the needs of students differing in age, demographics, and social contexts; many programs for bullying education, awareness, prevention, and intervention exist. Research suggests that universal, school-based intervention programs have mixed results when examining program effectiveness in the reduction of bullying incidence (Ferguson, Miguel, Kilburn, & Sanchez, 2007; Merrell, Gueldner, Ross, and Isava, 2008; Rigby, 2012; Smith, Schneider, Smith, & Ananiadou, 2004; Ttofi & Farrington, 2011; Vreeman & Carroll, 2007).

Ferguson et al. (2007), Merrell et al. (2008), Smith et al. (2004), Ttofi and Farrington (2011), and Vreeman and Carroll (2007) utilized meta-analyses, syntheses, and research reviews to examine program effectiveness in the reduction of bullying as demonstrated in research studies. Ferguson and colleagues (2007), Merrell and colleagues (2008), and Smith and colleagues (2004) found that universal bullying prevention programs had small to modest effects in the reduction of bullying, challenging the clinical and practical significance of program implementation for the reduction of bullying. While Merrell and colleagues (2008) found that decreases in bullying behavior were not meaningful, their review suggests that improvements were made in student interpersonal and intrapersonal skills, as well as in teacher knowledge and skill related to intervention. Vreeman and Carroll (2007) found that programs utilizing a whole-school, systemic approach to address bullying were more effective in the reduction of bullying than curriculum alone or social skills training. More positive effects were demonstrated

for programs implemented with older students, and programs that involved multiple components in a more systemic approach (Vreeman & Carroll, 2007).

Ttofi and Farrington (2011) were more specific in their inclusionary criteria, targeting studies that specifically examined programs created to decrease the incidence of bullying. The review of these 53 studies suggests that bullying prevention programs are effective in the reduction of bullying and victimization (Ttofi & Farrington, 2011). On average, bullying was reduced in the reviewed studies of school-based prevention programs by 20-23% and victimization was reduced by about 17-20% (Ttofi & Farrington, 2011). These results suggest that it is possible for school-based, universal programs to assist in the reduction of bullying and victimization (Swearer et al., 2010). In their 2013 research brief for Child Trends, Lawner and Terzian reviewed the research evaluations for 17 bullying programs. Results suggest that eight of the reviewed programs work for at least one bullying-related outcome, seven demonstrated mixed results, and two were considered ineffective (Lawner & Terzian, 2013). Outcomes included perpetration, victimization, attitudes, and bystander status (Lawner & Terzian, 2013). Lawner and Terzian (2013) also found that no programs were effective in the reduction of social bullying. While there are mixed results regarding the effectiveness of packaged programs, the research suggests that there are program components that can assist in the reduction of bullying and victimization in schools.

Program components. In addition to reviews of overall program effectiveness, research has identified the important program components that are integrated into effective school-based bullying programs. In a 2004 review of 14 research-supported

programs, Rigby found that highly regarded programs incorporate teacher training as well as student training using educational and non-educational techniques. Ttofi and Farrington (2011) also identified the program components that contribute to the effectiveness of successful programs. These components include: (a) universal bullying policy; (b) increased supervision; (b) firm discipline; (c) consideration of the wider social-ecological system, including parents; (d) systems for rewarding appropriate social behaviors and punishing bullying behavior; (e) and additional training on an individual basis for students needing skill improvement (Ttofi & Farrington, 2011). Additionally, Ttofi and Farrington (2011) found programs that (a) occur over a longer period of time and are more intense, (b) are implemented with fidelity, and (c) target students age 11 and older are more likely to reduce bullying and victimization.

Hazler and Carney (2012) and Bradshaw (2015) also support the inclusion of systemic components such as (a) a social-ecological framework; (b) increased supervision and improved student connection with the school context; (c) universal policy and rules; (d) consistent discipline; (e) classroom management; (f) skill development for students, teachers, and parents; and (g) program evaluation. In their review of 17 programs, Lawner and Terzian (2013) found family involvement, whole-school approaches with a focus on climate, and staff modeling and reinforcement to be effective program components. Lawner and Terzian (2013) found mixed results for the effectiveness of (a) universal approaches, (b) long-term programs, (c) working with adolescents and elementary students, (d) social emotional learning, and (e) empathy training in the reduction of bullying. The incorporation of effective components can

assist in the improvement of knowledge, awareness, skills, and school climate as well as the reduction of bullying behavior (Hazler & Carney, 2012). Schools may engage in one or more of these strategies even if they are not implementing a packaged program. Packaged programs that are demonstrated to be effective in the reduction of victimization tend to utilize these components.

Evidence-based programs. Many national organizations such as the National Association of School Psychology, the Substance Abuse and Mental Health Services Administration, the Office of Juvenile Justice and Delinquency Prevention, and the University of Colorado Boulder Center for Study and Prevention of Violence endorse the use of specific evidence and research-based, whole-school bullying prevention programs. Suggested use of programming is contingent upon program components, documented effectiveness, target demographics, and outcomes. Other programs that target bullying in addition to other social, academic, and behavioral outcomes have also proven effective. The following recommended programs have been limited to those specifically targeting bullying as the primary outcome on a whole-school level. Felix and colleagues (2014) recommend Bully Busters (Newman-Carlson, Horne, Bartolomucci, 2000), Expect Respect (SafePlace, 2000), KiVa (Salmivalli, Karna, & Poskiparta, 2010), the Olweus Bullying Prevention Program (Olweus & Limber, 2007), Promoting Positive Peer Relationships: Stories of Us (Faull, Swearer, Jimerson, Espelage, & Ng, 2008), and Steps to Respect (Committee for Children, 2001) as research supported, universal programs for school-based implementation (Felix et al., 2014).

The most commonly endorsed programs include the Steps to Respect Program, the Olweus Bullying Prevention Program, and KiVa (Felix et al., 2014; Jones et al., 2012; OJJD, n.d.; SAMHSA, 2015; University of Colorado Boulder Center for Study and Prevention of Violence, 2015). Steps to Respect: Bullying Prevention for Elementary School is a universal program that involves policy development, assessment and monitoring of incidence, staff training, and classroom instruction for emotional recognition, awareness, and how to take appropriate action (Committee for Children, 2015). KiVa is a school-based program for children ages 6 to 12. This program utilizes both a prevention and intervention curriculum for students at the universal level and more targeted and differentiated strategies for addressing incidents of bullying (Salmivalli, Karna, & Poskiparta, 2010). The Olweus Bullying Prevention Program targets bullying systemically at the individual, classroom, school, and community levels (Hazelden Foundation, 2007). Districts or schools provide comprehensive intervention by (a) developing school wide policy and rules, (b) assessing bullying via Olweus questionnaires, (c) intervening appropriately and immediately, and (d) directly involving parents and community stakeholders (Hazelden Foundation, 2007).

Program selection. Most packaged programs will not meet every need that a school or district has identified. It is also possible that a school or district does not have the resources, time, and personnel to implement a program that does meet the needs of the school and its students. Thus, it is important to assess the most urgent needs and available resources, and select strategies, practices, or programming based on rigorous data-based analysis. With the support of the school administration, a school psychologist

can work with a team to use a problem-solving approach in the selection of an appropriate program likely to meet school and student needs.

In general, schools should follow a problem-solving approach to assess needs and select the program that is most appropriate, given student and school needs and available resources. According to Larson and Busse (2012), the problem-solving approach includes the following steps: (a) problem identification, (b) problem analysis and hypothesis development, (c) problem response proposals, (d) response implementation evaluation of prevention strategies, and (e) evaluation of prevention strategies. The first three steps of this process are used to assess school and student needs, verify and understand the problems, identify possible solutions, and propose prevention and intervention strategies (Larson & Busse, 2012). A school psychologist has the necessary training to conduct needs assessments, use data to determine needs and appropriate action, and lead the decision-making process for program selection. While a school building or district might select a program based on a problem-solving approach, or by identifying the most important needs of their students, it is likely that they will face challenges in implementation and maintenance of the program.

Challenges to sustained implementation. The effectiveness of school-based bullying prevention and intervention programs relies upon the fidelity and integrity with which a program is implemented (Bradshaw, 2015; Crosse et al., 2011; Orpinas & Horne, 2006; Plog et al., 2010; Ttofi & Farrington, 2011). Challenges to effective implementation and sustainability include (a) initial increase in reported bullying, (b) negative school climate, (c) staff perception and attitude, (d) lack of modification when

needs arise, (e) lack of targeted attention and intervention, (f) lack of social-ecological framework, and (g) lack of resources (Orpinas & Horne, 2006; Plog et al., 2010; Swearer et al. 2010).

One of the largest barriers to program success is a lack of resources including personnel, finances, and time (Plog et al., 2010). Without any one of these resources, a district or school cannot provide access to all students who are in need of programming, nor the consistency required for program success. Another common barrier to success is the inability to make changes based on continued assessment of needs (Plog et al., 2010). Should new needs arise, the administration must adjust the program accordingly to maintain progress.

When bullying prevention programs are implemented, it is common for the reported incidence of bullying to increase (Swearer et al., 2010). This might present as a problem, however, an increase in reporting suggests an increase in awareness, understanding of what bullying is, and capacity to seek assistance (Swearer et al., 2010). Students and teachers may initially report increases in the frequency with which victimization occurs, but they are also more likely equipped with strategies to address or deal with victimization as a result of program implementation.

Fidelity with which programs are implemented relies upon following the guidelines provided by packaged programs. Inconsistencies in delivery of and response to programming and premature program termination prevent access to consistent discipline and education needed to assist students in their awareness and skills for preventing bullying (Orpinas & Horne, 2006). Fidelity could be compromised if teachers

or staff members do not follow the prescribed instruction or if they do not engage in intervention strategies consistently or appropriately. In addition, teacher attitude or self-efficacy could impact their effectiveness in program delivery.

Implementation suffers when staff perceptions and attitudes are inconsistent with the goals of the program (Plog et al., 2010). When staff underestimate the problem of bullying, maintain that bullying is normative behavior for youth, or feel ineffective in their knowledge and skills, they are less likely to intervene in bullying situations in meaningful and effective ways (Bradshaw, Sawyer, & O'Brennan, 2007; Kochenderfer-Ladd & Pelletier, 2008). Staff perceptions are also key in terms of school climate. For effective intervention, the climate must support and sustain the goals of the program through staff modeling, staff support, and administrative leadership (Orpinas & Horne, 2006). Adult perceptions about victimization and accuracy in estimating prevalence will be addressed in subsequent sections.

Additionally, schools must take special interest in the individual and social-ecological factors that contribute to bullying behavior. Social-ecological factors are an individual's interactions with family, teachers, school, peers, and community and the interactions between these systems (Swearer et al., 2010). Schools must involve and address all systems in order to generalize success for students. Schools must also do more to provide targeted or individualized support for perpetrators and victims of bullying in order to promote change and growth (Swearer et al., 2010). School psychologists are trained to recognize, understand, and meet the needs of students, especially those who are at-risk academically, socially, emotionally, behaviorally, and

psychologically. School psychologists are also prepared to foster collaboration between school, home, and community in terms of bullying prevention efforts. School psychologists are also uniquely positioned to provide support to those implementing programs or strategies directly, and to assist with the process of monitoring progress to ensure effective implementation.

Student access to programming. The U.S. Department of Education surveyed the prevalence and implementation patterns of research-based programs to address student alcohol and drug use as well as school crime and aggression (including bullying) during the 2004-2005 school year (Crosse et al., 2011). This survey identified 2,500 districts around the United States and sampled 5,847 principals from schools in the identified districts (Crosse et al., 2011). The results of the survey suggest that elementary, middle, and high schools in the United States implement and average of 10 programs a year per building (Crosse et al., 2011). About 11% of principals reported use of 20 or more programs and about 14% of schools reported no use of prevention programming (Crosse et al., 2011). Crosse et al. (2011) also found that research-based interventions made up about 7% of programs implemented in schools, with less than 50% of those implementations meeting criteria for minimum fidelity.

While these are not specific to bullying prevention programs, this research suggests that schools are limiting student access to appropriate programming by (a) providing no programming, (b) using programs that are not evidence-based, (c) inappropriately implementing programs, or (d) limiting available resources with the application of too many programs (Crosse et al., 2011). The school psychologist can

work closely with school administration, staff, and other stakeholders in order to identify the most pressing needs of students via assessment. Based on established needs and problem analysis, committees may be able to select fewer programs, curricula, or training to better address student needs and focus resources more directly and efficiently.

The Role of the School Psychologist

According to the NASP Position Statement on bullying (2012), the school psychologist serves an important role in (a) the promotion of a positive school climate, (b) the assessment of needs, (c) selection and implementation of prevention programming or other efforts, (d) direct service to students, and (e) the provision of consultation and training to parents and teachers. School psychologists are also trained to support and advocate for all students, especially students of diverse backgrounds and students with diverse needs.

A trained school psychologist is able to provide individualized services to students identified as being involved in bullying situations; and universal services to promote prevention and intervention of bullying and victimization. A school psychologist may provide individualized counseling, social-emotional intervention, or recommend treatment that is beyond the scope of what the school is able to provide. Training in school psychology also prepares a practitioner for implementation and progress monitoring of individualized or whole-school prevention efforts, including program evaluation and program sustainability.

School psychologists are also tasked with the responsibility of understanding the bullying dynamic. This includes students who are more likely to be involved in these

dynamics as perpetrators, victims, bully-victims, and bystanders; the outcomes associated with perpetration and victimization; the socio-ecological factors that perpetuate bullying and victimization; and the research-supported methods of intervention and prevention. School psychologists must also share this understanding with educators and school staff members in order to raise awareness and increase the likelihood that victimization will be addressed appropriately, and in a consistent manner. School psychologists also understand the process involved in identifying and working to solve problems at a universal school or district level. School psychologists work collaboratively with other school and district staff members to understand the problem via assessment, identify possible intervention programs or strategies based on research, implement strategies, and assess for effectiveness and progress. The bullying research targets schools as a setting in which most perpetration of bullying occurs and a setting that can serve as a catalyst for intervention and prevention strategies.

Developmental Trajectory of Victimization

This section addresses the development of victimization and the trajectory of victimization as students age and progress through the school system. This section provides more specific information about the prevalence of victimization, especially as it relates to transition through puberty and to middle school and beyond. This section highlights the importance of contextual, social, and physical transitions in relation to victimization.

Prevalence of Victimization

There has been a slight decreasing trend in the prevalence of victimization over the past decade. The lowest prevalence of school victimization reported, was for the 2017 school year as indicated by the National Center for Educational Statistics (NCES), *Indicators of School Crime and Safety* survey (2018). This biennial survey (beginning in 1999) is a supplement to the *National Crime and Victimization Survey and* asks a nationally representative sample of students ages 12 to 18 to reflect on the preceding 12 months. Youth are asked to report on different measures of school environment, school safety, occurrence of criminal activity or violence, and occurrence of different types of victimization and aggression (Musu et al., 2019). The most recent survey includes information about school and electronic bullying and victimization reported for the 2017 school year.

Indicator 10 of the *School Crime and Safety* survey asked participants to consider victimization at school and cyber-bullying during the 2017 school year (Musu et al., 2019). Of the students surveyed, about 20% reported being victimized at school in 2017, a rate lower than other year surveyed since 1999, but not significantly different from the 21 percent reported in 2015 (Musu et al., 2019). The reported prevalence of victimization ranged from 22-32% in the survey years preceding 2015 of the *Indicators of School Crime and Safety* (2005, 2007, 2009, 2011, and 2013) (Zhang et al., 2016). This decrease suggests that research, practice, and policy efforts made on classroom-wide, school-wide, local, state, and national levels have contributed to a decrease in prevalence. It is also possible that more widespread use of an agreed upon definition by

researchers and practitioners has led to more accurate measurement of bullying and victimization prevalence in schools.

According to the *Indicators of School Crime and Safety*, about 24% of females reported being victimized at school; while about 17% of males reported being victimized at school in 2017 (Musu et al., 2019). Of those surveyed, sixth graders were more likely to report victimization in the 2017 school year than any other grade through twelfth grade (Musu et al., 2019) and sixth through eighth graders were more likely to report being victimized than students in grades nine through ten (Musu et al., 2019). Results suggest that 26.7% of middle school students report being bullied, the highest percentage among primary, high school, and other (Yanez & Seldin, 2019). For youth that reported being bullied, about 20% of middle school students reported being bullied more than ten times per in the 2016-2017 school year, with 36% of those victimized middle schoolers believing that the bullying would happen again (Yanez & Seldin, 2019). Sixth graders were more likely than seventh or eighth graders to report being victimized more than ten days during the school year (Yanez & Seldin, 2019). Further, students in rural schools (27%) were more likely to report victimization than those in suburban (20%) and urban (18%) schools (Musu et al., 2019).

Victims also reported on the type of victimization that they experienced in the 2017 school year. Victimization included experiences of verbal, physical, relational, and electronic bullying incidents. Examples of student experiences reported include: (a) being “made fun of, called names, or insulted” (13%); (b) being the “subject of rumors” (13.4%); (c) being “pushed, shoved, tripped, or spit on” (5.3%); (d) experiencing

purposeful exclusion (5.2%); (e) being “threatened with harm” (3.9%); (f) having others attempt to make them do things they did not want to (1.9%); or (g) experiencing the purposeful destruction of property (1.4%) (Musu et al., 2019).

When considering location of victimization, victims identified the halls and stairways (43.4% of victimization respondents) or the classroom (42.1% of victimization respondents) as the most common places where victimization occurred (Musu et al., 2019). Additional locations included the cafeteria, the bus, the bathrooms or locker rooms, and off-campus sites, and online or by text (Musu et al., 2019). Online or electronic victimization was reported by 15.3% of victimized respondents (Musu et al., 2019). While most students who reported being victimized at school indicated that it occurred once in the school year (31%), other students reported being victimized more frequently (Musu et al., 2019). For 18.5% of students, victimization occurred two days in the school year. For 30% of victimized students, victimization occurred three to ten days in the school year; while 20.4% of students report an occurrence of more than 10 days in a school year (Musu et al., 2019).

Further, the students who reported being victimized were asked to indicate the type of power imbalance they perceived between themselves and the buy; and if they felt that the bullying would happen again (Musu et al., 2019). About 41% of victimized youth reported that they thought it would happen again (Musu et al., 2019). The majority of youth who reported being victimized felt that the bully could influence what others thought of them (56.3%), followed by social imbalance (49.6%), physical imbalance

(40.3%), financial imbalance (32.5%) and other power imbalance (24.5%) (Musu et al., 2019).

The Importance of the Middle School Years

Overt victimization involves explicit or obvious forms of bullying victimization, including physical and verbal victimization. The research literature indicates an increase in overt victimization, in the transition to middle school (Dinkes, Kemp, Baum, & Snyder, 2009; Espelage & Horne, 2008; Hong & Espelage, 2012; Nansel et al., 2001; Pellegrini & Bartini, 2000; Smith, Madsen, & Moody, 1999). However, it is important to note that school structures and grade configurations vary from district to district across the United States and in other countries. While some students may make the transition to middle school in the sixth grade, students in other districts may make the transition in the seventh grade or later. It is possible for middle schools to include the sixth through ninth grade. Additionally, terminology depends upon district; middle schools may also be referred to as intermediate schools, or junior high schools.

From 1970 to about 1986, there was a national decrease in the number of junior high schools following the seventh and eighth grade configuration, in conjunction with an increase in the number of middle schools following the sixth to eighth grade configuration (Alexander & McEwin, 1989). In a review of research about the middle school years, Juvonen and colleagues suggest that this reorganization was the result of changes in the ages of student maturation and need for space in elementary buildings (Juvonen, Le, Kaganoff, Augustine, & Constant, 2004). According to national statistics gathered by the National Center for Educational Statistics (Common Core of Data) for

the 2000-2001 school year, American middle schools most commonly follow the sixth through eighth grade configuration across rural, urban, and suburban settings (Juvonen et al., 2004). For the purposes of this research, the transition to middle school is defined as transition from the fifth to the sixth grade. It is important to consider not only the developmental changes that are occurring for students during this time, but also the social and contextual changes that are occurring.

Survey research conducted by Forrest, Beavans, Riley, Crespo, and Louis (2013) provided insight into health and school outcomes during the transition to adolescence. The researchers followed more than 1,400 fourth, fifth, and sixth graders for three years and found that puberty and the contextual transition to middle school can negatively impact school outcomes including attendance, engagement and connection to the school and teachers, achievement scores, and grades (Forrest et al., 2013). Forrest and colleagues (2013) also found that students who were not the victims of bullying tended to have more positive school outcomes such as academic achievement, school engagement, and better relationships with teachers. This research supports the examination of the middle school years, as an important time for physical, social, and emotional development. Other research supports the importance of examining victimization during this developmental and contextual transition into adolescence.

Research suggests that victimization follows a trend depending on the form of victimization and the age of victims. In general, victimization is more prevalent during the middle school years (Dinkes, Kemp, Baum, & Snyder, 2009; Musu et al., 2019). Hong and Espelage (2012) suggest that victimization tends to steadily increase as

children transition from elementary to middle school, peak during the early middle school years (i.e. sixth grade), and decline as youth enter and progress through high school (Espelage & Horne, 2008; Nansel et al., 2001; Pellegrini & Bartini, 2000; Smith, Madsen, & Moody, 1999). Ryoo, Wang, and Swearer (2015) looked at victimization over three time periods and found that victimization tends to increase from the fifth to sixth grade. Research also indicates that children in elementary and high school report less severe victimization than youth in the middle school setting (Rivers, Poteat, Noret, & Ashurst, 2009).

Hong and Espelage (2012) suggest that some research demonstrates more frequent reporting of victimization among elementary school students rather than students in middle school (Beran & Tutty, 2002; Varjas, Henrich, & Meyers, 2009). However, the definition of bullying can be misunderstood or incomplete at this age. Children in early elementary grades may have a less well-developed understanding of bullying and victimization. Limited understanding of the definition of bullying may contribute to increased reporting among children of elementary age. For example, in their qualitative research, Guerra, Williams, and Sadek (2011) found that elementary age children explained bullying as a situation in which someone hurts you or your possessions; whereas high school students tended to define bullying in terms related to power and popularity. This is not to suggest that victimization does not occur in the elementary grades, but it does suggest that the severity of victimization and the stability of the victim role transition in a significant way as children move from elementary to middle school (Ryoo, Wang, & Swearer, 2015). Extant research suggests mixed results about the age in

which students are most likely to experience victimization. Reported victimization also varies by the type of victimization experienced.

The 2014 National Survey of Children's Exposure to Violence (NatSCEV) examined the exposure to or experience of "violence, crime, and abuse" for 4,000 youth ages zero to 17 (Finkelhor, Turner, Shattuck, & Hamby, 2015, p. 746). Results from the 2014 NatSCEV indicate that children under ten reported the highest prevalence of physical intimidation; relational aggression was reported to be most prevalent between the ages of ten and 13; while cyberbullying was most prevalent for youth ages 14 to 17 (Finkelhor et al., 2015). About 19% of youth ages two to five, and 18% of youth ages six to nine suggested that they had experienced bullying in the form of physical intimidation (Finkelhor et al., 2015). Finkelhor and colleagues (2015) found that about 48% of youth ages ten to 13, and 39% of adolescents ages 14 to 17 experienced relational bullying. Nine percent of 14 to 17-year-old youth reported experiencing cyber bullying via phone or internet (Finklehor et al., 2015).

Farmer and colleagues (2015) explored externalizing and internalizing difficulties experienced by 533 youth as they transitioned to middle school. For the purpose of their research, the transition was defined as the move from fifth to sixth grade. Their research reflected an increase in victimization as students transitioned to middle school, and they found that this increase was related to social relationships and membership in social groups (Farmer et al., 2015). Famer and colleagues (2015) suggested that difficulties related to victimization were related to individual factors as well as social factors. They noted that youth who remained victims during the transition to the sixth grade tended to

have internalizing difficulties as rated by peers and teachers; additionally, victims tended to associate themselves with other victimized peers during the transition (Farmer et al., 2015). For youth who became victims following the transition to middle school, Farmer and colleagues (2015) found that their association with victimized peers was significantly related to their status as a victim.

Pellegrini (2002) also suggested that middle school students are more likely to be victimized during their transition to a new school due to their position in the developmental trajectory of socialization. Pellegrini (2002) suggested that youth in the middle school or junior high grades are seeking *status* and wanting to demonstrate *leadership* among their peers as they transition to new buildings and are introduced to new peers. Pellegrini and colleagues (2010) also noted that students transitioning to middle school are seeking status in hopes of developing romantic relationships. Pellegrini and Long (2002) found that middle school males were likely to use physical bullying in order to gain access to contact with the opposite sex. In their research examining role stability over time, Ryoo and colleagues (2015) also note that the increase in victimization from fifth to sixth grade is due to the desire to gain status in a new social environment. This relates to the theory of social dominance, suggesting that some youth will utilize aggression in order to establish a hierarchy of power among peers, in order to exhibit dominance (Pellegrini, 2002).

Additionally, the middle or junior high school environment differs in that there are more students, more movement within the school building, movement between multiple teachers, and less supervision during unstructured time (Kasen, Berenson,

Cohen, & Johnson, 2004). Kasen and colleagues (2004) suggest that this creates a less protective climate that leads to increased vulnerability for victims. This environment provides more opportunities for youth to establish social hierarchies via victimization without staff interference, which in turn maintains a school climate that permits victimization.

Wang and colleagues (2016) compared the effect of puberty versus contextual transition on bullying victimization for about 700 students moving from the fifth to sixth grade. About half of the participants transitioned to a new building for the sixth grade, while the remainder of participants remained at their elementary building. Results indicated that a decrease in victimization could be predicted for girls transitioning to a new building, and that bullying perpetration remained stable during the transition for all students (Wang et al., 2016). The authors attest that changes in peer victimization can be attributed to contextual transitions, while changes in bullying perpetration may be related to more developmental transitions (Wang et al., 2016).

The 2018 *Indicators of School Crime and Safety* report, published by the Institute of Educational Sciences and the National Center for Educational Statistics, served to collect and analyze data about student safety and exposure to or experience with crime in the 2017 school year. Data from the 2018 *Indicators of School Crime and Safety* suggest that rates of victimization decreased from sixth grade to eighth grade, after the transition to middle school had occurred (Musu et al., 2019). About 29% of surveyed sixth graders were victimized; whereas about 24% of seventh graders and 25% of eighth graders reported victimization in 2017 (Musu et al., 2019). Additionally, the transition to middle

school and then high school often results in more movement within the school building and less structure and supervision; all of which were noted to contribute to increased victimization in the transition to middle school (Kasen et al., 2004). *Indicators of School Crime and Safety* results indicate a decrease in victimization as students transitioned from middle school to high school, but victimization was higher for ninth and tenth graders (19% for both years), than for eleventh graders (15%), and twelfth graders (12%) (Musu et al., 2019).

Changes in victimization experienced in high school grades can be attributed to the established increase in more covert forms of bullying, i.e. cyber and relational bullying. Increased exposure and independence in the use of technology, as well as increased awareness of social status may lead to increases in covert forms of bullying for older adolescents. Changes in the prevalence of victimization based on age and form of bullying were explored in a meta-analysis addressing the effectiveness of anti-bullying programs for older youth.

A 2015 meta-analysis conducted by Yeager, Fong, Lee, and Espelage explored the factors that contribute to the efficacy of bullying prevention program use with older youth. This meta-analysis provided trend data for victimization throughout the trajectory of the middle and high school educational setting. The authors utilized data provided by the 2009 and 2011 *United States National Crime and Victimization Survey* to understand the progression of two types of bullying across grade levels. Yeager and colleagues (2015) found that youth reports of direct victimization, defined as physical victimization and overt name-calling, tend to decrease from sixth grade to twelfth grade. The research

supports a sixth-grade peak in the trajectory of overt forms (physical and verbal) of victimization. Among sixth graders taking the survey, about 80% of students reported being the victim of direct victimization, while about 50% of twelfth graders report being the victim of direct bullying, what the authors define as hitting or insulting (Yeager et al., 2015). Based on their review of research, Yeager and colleagues (2015) also conclude that the form of bullying changes as students age and as their motivation for social status increases.

Yeager and colleagues (2015) also noted that youth reports of indirect victimization, defined as relational or social aggression, increase slightly across the middle school years (sixth, seventh eighth grade), declines from eighth to ninth grade, and increases more rapidly from ninth to twelfth grade. Overall, about 60% of sixth graders reported being the victims of indirect bullying, while about 75% of twelfth graders report indirect victimization (Yeager et al., 2015). Yeager and colleagues (2015) suggest that direct physical victimization increases during the transition to middle school, but that indirect victimization may be more prevalent during the high school years.

The researchers offer several explanations for the increase in more covert forms of bullying in high school. In high school, students have more social competence and more social motivation; thus, a change occurs in the types of victimization experienced, as well as the characteristics of those perpetrating acts of bullying (Yeager et al., 2015). In their meta-analysis, Cook, Williams, Guerra, Kim, and Sadek (2010) found that bullies in elementary and early middle school tend to have lower social status, and more difficulty with their behavior and with solving social problems. Characteristics of bullies

in high school grades were less significant but included desired popularity or motivation for increased social status based on social goals and social hierarchies (Cook et al., 2010; Faris & Felmlee, 2011; Yeager et al., 2015). Additionally, competition related to gaining romantic relationships can contribute to increased frequency of covert bullying in high school (Guerra et al., 2011). Research also demonstrates an increase in victimization of sexual minority, gender diverse, and racial and ethnic minority youth in high school (Yeager et al., 2015). Killen, Mulvey, and Hitti (2012) suggest that increased victimization for ethnic and racial minority students, as well as immigrant status students, can also be attributed to social status, as victimization may serve the purpose to protect status of the in-group.

Physical victimization is the form of bullying to most likely to peak during the middle school years. *The United States National Crime and Victimization Survey* data from 2009 and 2011 demonstrate that direct, overt victimization peaks in the sixth grade (Yeager et al., 2015). Despite discrepancy in reported frequency and form of victimization at different ages, the research demonstrates increased victimization as students make physical and social-cognitive transitions. Thus, the transition from elementary school to the sixth grade is an important phase for understanding factors that contribute to victimization. More research is needed for the identification of risk and protective factors in the elementary years and in sixth grade to garner a better understanding of the peak in direct victimization in sixth grade.

Puberty. The transition from elementary to middle school occurs as many youths are transitioning into physical maturation. Although puberty is a biological factor for

adolescents, Haynie and Piquero (2006) suggest that puberty, when late or early, has social consequences especially as it relates to victimization. Research suggests that adolescents who reach puberty before their peers may experience difficulties navigating physical maturation when they are socially and emotionally unprepared (Caspi & Moffitt, 1991). Silbereisen and Kracke (1997) also suggest that adolescents who reach puberty earlier or later than their peers are more vulnerable, and more at risk of victimization due to physical and psychosocial differences between the youth and their peers.

Craig, Pepler, and Connolly (2001) examined timing of puberty as it relates to victimization for 1,000 fifth to eighth graders. Results indicate that students who reach puberty early are at a greater risk for victimization from same and opposite gender peers than those who were late or on time in their maturation (Craig et al., 2001). Craig and colleagues (2001) also found that male students in grades five to eight experienced more harassment from their same gender peers than female youth experienced; whereas male and female youth experienced similar amounts of victimization from the opposite sex. Haynie and Piquero (2006) looked specifically at the role of puberty in physical victimization. The researchers examined survey responses of nearly 7,000 11 to 15-year olds in schools across the United States. Haynie and Piquero (2006) found that puberty has a significant association with physical victimization for male and female youth. Results suggest that reaching puberty earlier than peers puts a student at more risk for victimization, particularly physical victimization. Thus, puberty plays an important role in the transition to middle school, as well as the social experience of adolescence.

The Victim Experience

The following section provides an overview of the victim experience, including descriptions of characteristics of victims and students who tend to be at-risk for victimization. This section also provides more information about the negative outcomes associated with victimization and the social experiences of youth who are victimized. This section supports the importance of focusing on youth who are victimized when considering the factors that perpetuate or protect against the bullying dynamic.

Characteristics Associated with Victimization

Olweus (1993a) conceptualized that victims may demonstrate one or more of the following characteristics: (a) anxiety, (b) shyness, (c) lack of confidence, (d) low self-esteem, (e) lack of social relationships and power, and (f) other internalizing difficulties. Victims tend to be "passive or submissive" meaning that they are less likely to demonstrate assertiveness or confront maltreatment by peers (Shetgiri, 2013, p. 3). Victims are also more likely to demonstrate social difficulties with friendship development and maintenance, insecurity, sensitivity, lower social status, and loneliness (Nansel et al., 2001; Pellegrini, Bartini, & Brooks, 1999; Shetgiri, 2013; Smokowski & Kopasz, 2005). Children who exhibit one or more of these characteristics are more likely to experience victimization. The involvement in a bullying dynamic can also increase these characteristics in victims (Olweus, 1993a). According to results of a meta-analysis examining predictors of bullying and victimization, victims tend to experience internalizing thoughts and feelings inclusive of negative self-perceptions; have difficulty

with social skills and problem-solving; experience “negative community, family, and home” contexts; and are both “rejected and isolated by peers” (Cook et al., 2010 p. 75).

Research suggests that social difficulties can lead to victimization. These difficulties include being isolated from peers and having frequent negative interactions with peers (Kumpulainen, Rasanen, & Henttonen, 1999; Pellegrini et al., 1999). Pellegrini et al. (1999), found that friendships and being popular served as protective factors against victimization, thus youth without close friendships or youth who are not well liked by peers are at greater risk for victimization. Less support from peers may make youth more vulnerable to peer rejection and victimization and can also serve as an outcome of victimization (Kumpulainen et al., 1999; Pellegrini et al., 1999). Extant research indicates that victimization is associated with internalizing difficulties such as withdrawal, depression, anxiety, loneliness, social isolation, and suicidality; as well as school-based difficulties such as poor performance and truancy, aggression, and delinquent behavior (Swearer & Hymel, 2015). Swearer and Hymel (2015) note the importance of understanding that many characteristics associated with victimization can serve as both predictors and outcomes of being victimized. Thus, it is difficult to determine whether certain characteristics lead to victimization, are a result of being bullied, or both.

Social experiences of victims. The social experiences of victims directly reflect the type of victimization that is experienced. Victimization can occur verbally, physically, electronically, and socially/relationally (NASP, 2012). Thus, victims may experience physical victimization by being hit, kicked, pushed, punched, pinched, or

touched inappropriately. Victims may also experience being teased, ridiculed, picked on, called names, made fun of, or hearing negative things about themselves. Victimization may also take the form of exclusion, avoidance, not being chosen as a playmate, and being the subject of rumors.

At-risk students. Research suggests that some children and adolescents are more at-risk for victimization than their peers. Students who are perceived as being different from their peer group are more likely to be the victims of bullying perpetration (Tippett & Wolke, 2014). Thus, the most at-risk child and adolescent populations include children identifying as sexual minority and gender diverse; racial, ethnic, and religious minority students; students with disabilities; students of immigrant status; and students of lower social economic status (Due, et al., 2009; Finley, 2014; Scherr & Larson, 2010; U.S. Department of Health and Human Services, n.d.b; Swearer et al., 2010; Tippett & Wolke, 2014).

Socioeconomic status. In a review of research articles examining the relationships between socioeconomic status and roles in the bullying dynamic, Tippett and Wolke (2014) found that victims were more likely to come from low socioeconomic status backgrounds. Their review suggests that differences from peers, specifically limited access to material items and resources can lead to increased victimization among low socioeconomic status youth (Olweus, 1993a; Tippett and Wolke, 2014; Thornberg, 2010). The data could also be interpreted as suggesting a relationship between victimization and the family and home factors that are associated with a lower socioeconomic level (Tippett and Wolke, 2014). Specifically, parent and sibling

relationships, parenting and discipline style, and exposure to violence may impact a child's social and relationship skills (Bolger, Patterson, & Kipersmidt, 1998; Salzinger, et al., 2002; Tippett & Wolke, 2014). Further, youth from higher socioeconomic backgrounds were more likely to have the resources to support their effective use of problem-solving, coping, and social skills (Braveman, et al., 2005; Galobardes, Shaw, Lawlor, Lynch, & Smith, 2006).

Racial, ethnic, and racial minority. Research with focus groups examining slurs and stereotypes in schools suggest that ethnic minority students and students of non-Christian backgrounds are likely to experience verbal harassment, which can take the form of bullying victimization (Wessler & De Andrade, 2008). In an assessment of survey data for more than 17,360 students grades seven to 12, about 40% of students reported *bias-related* (Russell, Sinclair, Poteat, & Koenig, 2012, p. 493) harassment based on sexual orientation, race, religion, gender, and mental or physical disability. The increased likelihood of children from lower SES backgrounds being involved in the bullying dynamic is an international occurrence as supported by research conducted by Due et al. (2009). In North American and European countries where there was larger economic inequality and in schools where there were larger gaps in wealth, economically disadvantaged children were more likely to be victimized (Due et al., 2009).

Developmental disabilities. Liesman (2009) reviewed ten studies examining the victimization of children with developmental disabilities. In these studies, these children were two to three times more likely to experience victimization. Kaukiainen et al. (2002) found that students with disabilities are more likely to be involved in bullying as both

bully and victim. In a review of research, Blake, Lund, Zhou, Kwok, and Benz (2012) found increased rates of victimization among students identified as having a disability at all levels of schooling when compared to students without disabilities. Students identified as having an emotional disturbance, other health impairment, autism, and orthopedic impairments are more at-risk for bullying victimization due to visible differences, difficulty controlling impulses, social and emotional difficulties, and less acceptance among peer groups (Blake et al., 2012).

Gender diverse. More than 7,800 students completed the 2013 *National School Climate Survey* conducted by the Gay Lesbian and Straight Education Network. About 72% of students sampled identifying as sexual minority and 55% gender diverse reported being verbally harassed because of their sexual orientation and gender expression (Kosciw, Greytak, Palmer, & Boesen, 2014). About 36% reported physical harassment due to sexual orientation, and about 23% due to gender expression (Kosciw et al., 2014). About 49% of students who identify gender diverse or sexual minority experienced cyberbullying (Kosciw et al., 2014). The prevalence of victimization among at-risk children and adolescents demonstrates a need for improved school climate and increased capacity to address at-risk student needs. Schools must do more to increase knowledge, awareness, and sensitivity among students and staff members.

Outcomes. The negative short- and long-term social, emotional, physical, psychological, academic, and behavioral outcomes associated with victimization are well researched in the fields of education and psychology. Students who have been victimized by bullies often report difficulty sleeping; higher levels of stress and illness; and long-

term internalizing problems such as low self-esteem, anxiety, depression, and hopelessness which can lead to self-harm, self-medication, and suicide (Farrington & Baldry, 2010; Finley, 2014; Hawker & Boulton, 2000; Orpinas & Horne, 2006; Swearer et al., 2001; Swearer, Grills, Haye, & Cary 2004). For victimized children, low self-esteem, depression, and anxiety are not only outcomes of being bullied, but are also factors that can lead to children being targeted by bullies (Swearer et al., 2004). Additionally, victims suffer academically if they fear encounters with their bully and avoid certain areas or the school campus altogether, or even drop out (Hawker & Boulton, 2000; Finley, 2014).

Fullchange and Furlong (2016) found that victimization, no matter how frequent, has a negative impact on particular positive psychology constructs. The researchers demonstrated that ninth through twelfth graders exhibit decreased well-being even if they experienced low levels of victimization, and that well-being decreased as a function of more frequent victimization (Fullchange & Furlong, 2016). Thus, any amount of victimization was related to decreased belief in self, belief in others, and engaged living (defined as *optimism* and *gratitude*) (Fullchange & Furlong, 2016, p. 3). The authors also suggest that decreased belief in others can include the victim's family, teachers, and friends (Fullchange & Furlong, 2016).

Victims are also more likely to retaliate or protect themselves by using weapons or risking their own lives and the lives of others (Finley, 2014; Orpinas & Horne, 2006). Socially, peers may avoid victims because association with the victim could lead to victimization for that peer (Orpinas & Horne, 2006). Additionally, peers might believe

the things that perpetrators say about the victim in relational and verbal victimization, preventing relationships from forming or continuing.

The 2018 *Indicators of School Crime and Safety* also provided information about the impact on the lives of students who were victimized in the 2017 school year. The youth were asked to indicate the amount of impact that victimization had on different aspects of their lives including schoolwork, family and friend relationships, self-concept, and health (Musu et al., 2019). The majority of victimized youth reported no impact or very little impact of victimization on these aspects of their lives (Musu et al., 2019). For those who reported somewhat of a negative effect or a lot of negative impact on their lives, it most often was related to their feelings about themselves. About 27% of victims reported at least somewhat of a negative impact on their self-perception, followed by their schoolwork (19.4%), relationships (18.6%), and physical health (13.7%) (Musu et al., 2019).

Internalizing behavior. Research in the field suggests that negative outcomes are likely to impact both victims and perpetrators of bullying. However, victimization can result in more dangerous and life-threatening outcomes such as suicide, retaliation, and school violence; a trend that began in the 1990's and that continues today (Finley, 2014). Students who are victimized may feel unsafe at school, rejected by their peers, and perceive little social support. Swearer and Hymel (2015) note that victims experience depression; anxiety; social withdrawal, avoidance, and isolation; loneliness; and suicidal ideation.

Research indicates that students with internalizing difficulties or disorders are less likely to be referred for services because students with externalizing difficulties are more disruptive in the home and classroom setting (Gresham & Kern, 2004). Children who exhibit more disruptive behaviors are more likely to be referred for school- and community-based services, disciplinary action at school, counseling, or other types of behavioral intervention. Victimization most commonly occurs within the school environment (Musu et al., 2019). When overt, bullying can be disruptive in the school environment, and is more likely to result in a teacher or school staff member response. Victimization may be undetected, underreported by students, or perceived by adults to be taken care of by intervening and addressing the perpetrator.

In these situations, the perception may be that overt bullying behaviors require immediate attention and a swift response. Furthermore, it may be also assumed that reduction in overt bullying behavior results in a decrease in victimization. However, bullying may take on a different form and/or context in order to evade adult awareness. In addition, should internalizing difficulties experienced by the victims go unaddressed, the negative academic, social, emotional, and health outcomes can be significant. Sourander and colleagues (2016) suggest that experiencing victimization in youth can lead to significant psychiatric difficulties that require services as an adult. Given the impact bullying victimization can have on youth, it is important to not only make considerations for understanding the factors that lead to perpetration, but to also understand the factors that contribute to and maintain victim status. It is not enough to direct intervention and prevention toward the factors that lead to perpetration, but to also

understand and address the factors that are associated with increased victimization. Thus, it is important to understand the context in which characteristics of victimization are developed, maintained, and experienced at the individual, familial, social, and school levels. The following section addresses the factors that are related to the maintenance and protection against the negative outcomes of victimization

Development and Maintenance of Victimization

This section explains factors associated with youth involvement in victimization from the theoretical perspective of the social-ecological model. Factors are presented as risk or protective factors occurring within the social context of a student's life, with particular attention paid to the role of adults in the experience of victimization. This section provides information about the impact of risk and protective factors on youth experience and role within the bullying dynamic.

The Social-Ecological Model

The existing literature recommends a social-ecological model for understanding the development and maintenance of victimization (Espelage & Swearer, 2010). This model is based on Bronfenbrenner's (1979) ecological framework suggesting that individual behavior is directly influenced by the systems surrounding an individual, and the interaction of those systems (Espelage & Swearer, 2010). Specifically, the relationship between a child and their family, teachers, school, peers, and community as well as the interactions between these systems can influences social and psychological development (Espelage & Swearer, 2010). Espelage and Swearer (2010) further contend that family factors (e.g., parenting, attachment, social support, monitoring), peer factors

(e.g., friend selection), school factors (e.g., teacher engagement, climate, handling of victimization, social support), and community factors (e.g., safety and social support) interact to shape behavior. Thus, if a child or adolescent is being victimized, it is likely that this behavior is being maintained by social factors in one or more of the child's ecologies (Espelage & Swearer, 2010).

Social-ecological factors related to victimization. The social-ecological model recognizes the contextual factors that contribute to social development. What follows is an exploration of some of the familial, peer, and school-based factors that are associated with being at risk for bullying victimization. Then, potential protective factors at the familial, peer, and school level are provided. An understanding of the factors that contribute to victimization and non-victimization provides a frame of reference for the importance of studying the contexts in which victimization occurs, and the ways in which these contexts contribute to victimization.

Risk factors associated with victimization. A more comprehensive understanding of victimization comes from recognition of the interaction of the individual, familial, peer, school, community, societal, and cultural factors and how they contribute to the prevalence of victimization. In accordance with the social-ecological model, research conducted by Bowes and colleagues in 2009 suggests that there are specific family, school, and community factors related to involvement in the bullying dynamic as a victim or bully. Bowes et al. (2009) contend that family factors include low SES, parental psychopathology, violence in the home, negative parental interaction and engagement. School factors consist of the number of students receiving free and reduced

lunch and the size of the school population (Bowes et al., 2009). Bowes and colleagues (2009) define neighborhood factors as issues with neighbors and community vandalism.

Family. Social ecological factors that are related to the development of include family factors such as exposure to domestic violence, parental interactions with low warmth, and maltreatment or abuse of any form (Bowes et al., 2009; Shields & Cicchetti, 2001). Factors associated with victim status also include large school size and child maltreatment (Bowes et al., 2009). Children exhibiting the roles of both bully and victim were more likely to have had issues with their neighbors and have exposure to the following familial factors; maternal depression, child maltreatment, and limited parental engagement (Bowes et al., 2009).

Espelage and Swearer (2010) examined the existing research to identify specific social-ecological factors that contribute to a child's status as a victim; these include attachment, parenting, social support, and the influence of adults. Perry, Hodges, and Egan (2001) found that children who have an anxious resistant attachment become upset more easily and are more cautious within their environments than securely attached babies. These traits, if maintained into childhood, can become risk factors for victimization (Espelage & Swearer, 2010). Baldry and Farrington (2000) found that children who have authoritarian parents, meaning high structure and expectation with low warmth, are more likely to be involved in a bullying dynamic in any role. More specifically, Bowers, Smith, and Binney (1994) and Duncan (2004) found that male victims tend to have mothers that are *over-involved* and *overprotective* and fathers that are *critical* and *distant* (Espelage & Swearer, 2010, p. 63). Female victims tend to report

difficult relationships with their mothers, which may include rejection (Finnegan, Hodges, & Perry, 1998; Rigby, 1993). In a review of research, Duncan (2004) found that the families of male victims tend to be "cohesive, enmeshed, and warm" whereas family characteristics of female victims included "poor functioning, low communication, low affect, abuse, and neglect" (p. 240).

Peer relationships. In a review of bullying and victimization research conducted by Espelage and Swearer (2003), the authors provide three research-supported theories that provide explanations for the role that peer dynamics can play in victimization; they are the homophily hypothesis, dominance theory, and attraction theory. The homophily hypothesis suggests that adolescents who are within a group tend to demonstrate behavioral attitudinal similarities, and that there is a tendency to socialize with or initiate friendships with those who are similar (Kandel, 1978). Thus, youth who are victimized may be more likely to associate themselves socially with other victims. Additionally, those who are perpetrators are more likely to seek friendships with those who bully at similar levels (Espelage, Henkel, & Holt, 2003).

Dominance theory suggests that victimization may also be the result of attempting to establish a position within a social hierarchy (Espelage & Swearer, 2003). Pellegrini (2002) posits that during the transition to middle school, youth must establish a social hierarchy, and in turn must demonstrate dominance to gain power within new peer groups. Youth who do not demonstrate dominance may be the target of another peer's aggression and may have lower social standing as a result. Pellegrini and Long (2002) found that the display of dominance is associated with bullying behavior as students

transition to middle school, and that victimization likely occurs in order to establish status within the social hierarchy. Attraction theory suggests that in an effort to establish independence from parents, youth seek relationships with peers who are perceived as independent, and who demonstrate more aggressive behavior (Bukowski, Sippola, & Newcomb, 2000).

These theories tend to focus on the impact that social selection and interaction have on a student's engagement in perpetration of bullying. Less research examines the social relationships, skills, and interactions that influence victimization. Fox and Boulton (2005) found that students who were nominated as victims by their peers exhibited poor social skills based on self, peer, and teacher ratings. According to all raters, victims were most likely to display the following social vulnerabilities: "looks scared, stands in a way that looks like she/he is weak, and looks like an unhappy person (Fox & Boulton, 2005, p. 322). Self-raters and peer raters additionally noted that a victim likely: "gives in to the bully too easily when picked on, cries when picked on, and talks very quietly" (Fox & Boulton, 2005, p. 322). Peer and teacher ratings suggest that victims may engage in passive and/or proactive behaviors such as putting up with victimization without trying to stop it, showing that they are not affected by bullying, reacting to the bully, or getting on the nerves of other children (Fox & Boulton, 2005). The research by Fox and Boulton (2005) supports the hypothesis that victims may engage in passive or proactive behaviors that make them more vulnerable to being victimized (Olweus, 1978). For example, victims may provide bullies with a reaction encouraging them to continue, display behavior that is not assertive in reaction to the bully, engage in more social isolation and

withdrawal, and exhibit some externalizing behaviors (Hodges, Boivin, Vitaro, Bukowski, 1999; Perry, Willard, and Perry, 1990; Schwartz, Dodge, & Coie, 1993).

The research suggests that homophily takes place among victims. Sijtsema, Rambaran, and Ojanen (2013) suggest that due to decreased social status, victims have fewer peers to select from, and thus they tend to befriend peers who are also victims. Salmivalli, Huttunen, and Lagerspetz, (1997) found that victimized youth might select other victimized youth as friends due to the shared experience of being victimized. Thus, it is hypothesized that peers select friends based on the amount of bullying behavior that they engage in; but also, that victimized youth might select peers based upon the fact that they too are victimized (Lodder, Scholte, Cillessen, & Giletta, 2016).

Espelage and Swearer (2010) suggest that victims tend to place more importance on social support than bullies, bully-victims, and those not involved in a bullying dynamic, yet report that they do not receive said report from their peers. Rigby (2000) found that the lack of social support experienced by victimized youth in conjunction with the high importance assigned to said support often leads to negative outcomes for a victim's well-being. Additionally, research suggests that social and emotional loneliness as well as social anxiety are predictors of victimization (Acquah, Topalli, Junttila, Niemi, & Wilson, 2016). Ladd, Kochenderfer, and Coleman (1997) suggest that victims are often rejected by peers, but also lack friendships.

In a study of more than 20,000 middle school and high school students, Espelage and Swearer (2010) identified risk and protective factors of victimization within the social-ecological model based on survey responses. The researchers identified negative

family environments and school delinquency as significant predictors of victimization among surveyed youth (Espelage & Swearer, 2010). Negative family environments were defined as homes where the youth experienced or witnessed sexual and or physical violence or substance use and abuse (Espelage & Swearer, 2010). School delinquency items asked youth to recall the frequency with which they have witnessed the following at school: substance use including cigarettes, physical violence or possession of weapons, and gang activity (Espelage & Swearer, 2010). Espelage and Swearer (2010) found a significant relationship between students who indicated agreement that they had been exposed to these school and home-based factors and their role as a victim. A relationship was also indicated between victim status and less engagement in one's school (Espelage & Swearer, 2010).

School. The school setting serves as an important influence on a child's experience in school and on their status as a potential victim. The school climate consists of the aspects of a school environment that shape student experience. For example, student engagement in school, perceived support from their peers and adults in the school, perceived safety at school, as well as teacher involvement and attitude. Research suggests that school climate has an influence on the prevalence of victimization. School climate can be defined as student experiences within a school building, as defined by "norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures" (Cohen, McCabe, Michelli, & Pickeral, 2009 p. 180). By "tolerat[ing], ignor[ing], or dismiss[ing]" victimization; a school, its staff, and students

perpetuate a climate of aggression or tolerance for victimization (Espelage & Swearer, 2010, p. 65; Hoover & Hazler, 1994).

Research supports the impact of the school context on student experience with victimization. In their research, Cook and colleagues (2010) explored contextual and individual factors that predict being victimized, being a perpetrator, and holding dual roles via meta-analysis. This research found that school climate was the most significant contextual predictor for victimized students, followed closely by community factors (Cook et al., 2010). These predictors had a larger effect than the contexts of peer relationships and home life (Cook et al., 2010).

In a research study examining school-based factors that contribute to victimization, Muijis (2017) found that individual factors had the largest impact on prevalence of victimization, but that school level and classroom-level factors also contributed to prevalence. School level factors that accounted for the most variance included school leadership and management, building policies related to bullying, and quality of experiences and sense of social community (Muijis, 2017). Muijis (2017) found that schools with policies directed specifically toward bullying and behavior had lower levels of victimization. Especially when policy provided specific details and processes related to "recording, implementation, evaluation, adaptation, and involvement of pupils and parents," rather than broad or more general ideas (Kyriakides, Kaloyirou, & Lindsay, 2006; Muijis, 2017, p. 261). The research also supports the positive impact of policies that address parent involvement and teacher collaboration; however, the impact is not as strong as policies directed toward student behavior (Muijis, 2017). Additionally,

Muijis (2017) found that schools with lower levels of victimization were more likely to have student and staff collaboration in policy and code of conduct development, frequent evaluations of policy, professional development trainings, and specific guidelines about staff and student roles. Policies were also more likely to be adhered to, and implemented with consistency (Muijis, 2017).

Kyriakides and Creemers (2012) looked more specifically at the school-based factors that could influence the reduction of victimization. The researchers surveyed 1,500 students in Cyprus to examine classroom-level and school-level differences in reducing victimization. Results suggest that classroom-level factors such as student relationships with each other and with their teachers were related to a reduction in victimization (Kyriakides & Creemers, 2012). School-level factors related to a reduction of victimization included codes of conduct or student behavior, working collaboratively with parents and families and, evaluating the school environment (Kyriakides & Creemers, 2012). Research about the school-based factors beyond climate that impact victimization is more limited than the research about factors within other levels of the social-ecological model.

Student perception of school climate is also important for understanding the role of climate on victimization. Gage, Prykanowski, and Larson (2014) examined more than 4,700 third through twelfth grade students in one district across three school years to understand student perception of climate. The researchers examined elementary school students and secondary students; they also assessed perceptions of climate while students transitioned to middle school. Results suggest grade level differences in perception of

school climate among victimized students (Gage et al., 2014). Victims transitioning to middle school tended to report similar perceptions of school climate to those in secondary school, in that student respect for differences and peer support predicted significant decreases in bullying, while adult support was significantly associated with decreased victimization (Gage et al., 2014).

Waasdorp, Pas, O'Brennan, and Bradshaw (2011) also explored perceptions of climate and the association of these perceptions on victimization. In a review of student, parent, and staff perception on school climate the researchers found that higher levels of victimization were associated with lower student and teacher ratings of feeling safe or connected to the school, and increased ratings of witnessing bullying (Waasdorp et al., 2011). Participants in elementary buildings tended to indicate higher levels of feeling safe and feeling as though they belong than did those in secondary buildings (Waasdorp et al., 2011). In addition, the data indicate that staff and students were more likely to witness victimization in buildings that had higher teacher-student ratios (Waasdorp et al., 2011). This research provides further support for the link between perceptions of climate and victimization and the impact of changes in climate as students transition to middle school.

More research is needed in order to gain a better understanding of the classroom-level and school-level factors that can contribute to student victimization, especially for students who are transitioning from elementary school to middle school. More information about the school as a context within the social-ecological understanding of victimization is necessary. Future research should explore the risk and protective factors

within the school setting, interactions between the school and other contexts, and strategies for intervention and prevention.

Protective factors. Extant research has provided information about general individual, social, peer, familial, and school-based risk factors associated with bullying and victimization; less research focuses on the factors that protect a youth from being victimized. Less information is available about the factors that protect a child from becoming a bullying, and less still about the factors that protect a child from becoming a victim. Research tends to focus on the factors that lead to victimization, not on the factors that reduce the likelihood of victimization. What follows is a description of some of the social-ecological factors that have been identified as protective against victimization.

Family. Most research focuses on the family attachment, structures, behavior, and relationships that predict bully, victim, or bully-victim status. What can be inferred from this research is that children learn how to solve social problems and interact with peers and others based on the model provided by their families (Duncan, 2004). Thus, children who have more positive and secure relationships with family members are less likely to be involved in bullying dynamics (Duncan, 2004). For example, in a review of research, Ladd (1992) posited that securely attached, young children entering preschool were more likely to have more positive social experiences than peers with insecure attachments.

In a study of about 680 male high school students in Italy, Baldry and Farrington (2005) found that authoritative parents who demonstrated support for their child, and

increased social problem solving and social skills helped to protect students from victimization. Goldbaum, Craig, Pepler, and Connolly (2008) identified factors that protected fifth to seventh graders from victimization in a study of about 1,200 students. Protective factors included lower levels of parent anxiety, parent relationships inclusive of "affection and trust," (p. 152) and non-engagement in physical and verbal reactions to being bullied.

Social. Additional protective factors include close and reciprocal friendships (Hodges et al., 1999; Scholte et al., 2009), high self-esteem (Egan & Perry, 1998), and appropriate social skills (Fox & Boulton, 2005). In a review of the impact that social support has on the bullying dynamic, Malecki and Demaray (2004) suggest that social support has a positive impact on the lives of children and can serve as a protective factor from involvement in a bullying dynamic.

Demaray and Malecki (2003) compared perceived social support received and the importance of social support among about 500 sixth, seventh, and eighth graders who were classified as bullies, victims, bully-victims, and a comparison group. The comparison group perceived that they received more social support from peers, teachers, and parents than all other groups (Demaray & Malecki, 2003). The researchers also found that the comparison group (as well as the bully group) placed less importance on social support than did the victim and bully-victim groups (Demaray & Malecki, 2003).

Hodges and colleagues (1999) found that close, mutual peer relationships served to protect children from victimization over the course of the school year, as internalizing difficulties no longer predicted victimization. The research also supported the theory that

friendship quality, or the perceived level of protection offered, also played a role in reduced risk (Hodges et al., 1999). Additionally, Pellegrini, Bartini, and Brooks (1999) found that being liked by a number of peers as determined by nominations can moderate youth status as a victim. Friends can also serve to protect each other from being bullied (Hodges & Perry, 1999). In their research examining social skills, Fox and Boulton (2005) found that certain social difficulties were related to victim status. The authors did not overtly discuss the factors that predicted non-victim status, as they sought to identify the social skills problems that predicted victimization. However, from their research, it can be inferred that skills including not appearing scared or weak, looking happy, not giving into the bully or crying when bullied, and not talking very quietly are associated with non-victim status (Fox & Boulton, 2005). Lower scores on the social problem items associated with the preceding areas predicted membership in the non-victim group (Fox & Boulton, 2005).

School. The extant research demonstrates that positive teacher relationships, teacher training, effective teacher intervention and response, and appropriate teacher perceptions of victimization contribute to a lower prevalence of victimization (Bauman, Rigby, & Hoppa, 2008; Espelage & Swearer, 2010; Kochenderfer-Ladd & Pelletier, 2008; Olweus, 1993b; Olweus, Limber, & Mihalic,1999). In their research exploring the risk and protective factors associated with bullying and victimization, Espelage and Swearer (2010) identified associations between engagement in school and less self-reported victimization.

Additionally, components of school-based bullying intervention and prevention programming have been found to aid in the reduction of school-based perpetration and victimization. As previously indicated, Ttofi and Farrington (2011) identified program components that are associated with a decline in victimization, including: (a) universal bullying policy; (b) increased supervision; (b) firm discipline; (c) consideration of the wider social-ecological system, including parents; (d) systems for rewarding appropriate social behaviors and punishing bullying behavior; (e) and additional training on an individual basis for students needing skill improvement (Ttofi & Farrington, 2011). Additional research indicates that systemic approaches to improving school climate; student, staff, and family training; support for consistent whole school policy, rules, supervision, and discipline; and engagement of all contexts of the students' social-ecological framework are effective in reduction of victimization (Bradshaw, 2015; Hazler & Carney, 2012; Lawner & Terian, 2013).

Role Stability

There are many factors that contribute to a student's role as a victim and the maintenance of that role over time. Some research suggests that victimization is stable over time because youth continue to demonstrate the risk factors that contribute to their status as a victim (Kochenderfer-Ladd, Ladd, & Kochel, 2009). Other research suggests that being victimized serves as a risk factor for continued victimization in itself (Lauritsen & Quinet, 1995; Nagin & Patemoster, 2000). Many factors have been demonstrated to have an impact on the stability of one's role as a victim of bullying. Other research suggests that victimization is less stable.

Ryoo and colleagues (2015) examined victimization stability over three time points. For this study, victimization was defined by type of victimization and frequency. The authors found that infrequent victimization is the most stable status, while status as a frequent victim (weekly victimization) is less stable across time (Ryoo et al., 2015). This suggests that a child or adolescent's status as a victim is less stable than previously believed (Ryoo et al. 2015). Ryoo and colleagues (2015) also found that the instability of status was most prominent during traditional school transition.

In contrast to findings from Ryoo and colleagues; Cillesse and Lansu (2015) found stability in roles across transitions. Cillesse and Lansu (2015) examined longitudinal victimization data for more than 1,000 youth as they transitioned from fourth grade to twelfth grade. Cillessen and Lansu (2015) found that victimization was stable as students transitioned from elementary, to middle, to high school. This was determined based on student position within their group of peers, based on peer nomination. Each year, students were asked to nominate the peers in their grade who were victimized (Cillessen, & Lansu, 2015). The research also demonstrated more victim stability for males; stability across school transitions; and associations among internalizing and externalizing behaviors as well as lower academic and social skills with victimization, especially in late elementary grades to early middle school (Cillessen & Lansu, 2015).

Bettencourt, Farrell, Liu, and Sullivan (2013) examined stability of victimization among 477 middle school students in an urban and county school setting. Results suggest stability across four identified classes of students including victims who are less aggressive, victims who are more aggressive, non-victimized aggressors, and students

who did not self-identify as a victim or aggressor. The *well-adjusted* group of peers was determined to be the most stable, while the more passive victim group appeared to be least stable; however, all classes were found to be stable over time (Bettencourt et al., 2015 p. 431).

Research conducted by Averdijk, Malti, Eisner, Ribeaud, and Farrington (2016) examined longitudinal victimization data for more than 1,600 seven-year olds as they aged to 11-year olds. The purpose of the study was to examine the impact of internalizing and externalizing behaviors on the stability of victimization over time. Results suggest that victimized youth who experienced internalizing symptoms and who had a negative overt reaction to being victimized, tended to experience later victimization (Averdijk et al., 2016). This research supports the theory that internal responses and outward reactions to being victimized can lead to further victimization. Research conducted by Averdijk and colleagues (2016) adds to the body of research that supports victimization as a cycle; suggesting that youth demonstrate characteristics or behaviors that put them at risk for victimization, which then leads to victimization, and thus continued manifestation of the factors that put them at risk.

The existing body of research demonstrates that many variables contribute to the stability of one's role as a victim. Some research suggests that the role of victim is more stable, while other research indicates that it is less stable over time. The research does support that internalizing and externalizing behaviors are associated with youth roles as victims, aggressors, more aggressive victims, and those who are not involved in the bullying dynamic. Review of research also supports that there is a peak in difficulties

during the transition to middle school; however, there is less agreement regarding the stability of the victim role as students transition to middle school.

Adult Perceptions and Responses to Victimization

In a study of middle school students and their parents, Williams (2008) found low agreement between parent and child reports of involvement in bullying as a bully or a victim. In a study of rural elementary school students, teachers, and parents, Stockdale et al. (2002) concluded that both parents and teachers underestimated the prevalence of bullying as compared to student report. Whereas, Newgent et al. (2009) found that parents overestimated their child's role as victim and teachers overestimated student verbal bullying.

In research examining parents and their students in primary school and middle school, Eslea and Smith (2000) and Williams (2008) did not find significant alignment of attitudes about bullying. Further, Eslea and Smith (2000) and Williams (2008) concluded that the attitudes about bullying held by parents do not predict their child's bullying behavior. Not only are parents inaccurate in their estimation of bullying, but they also likely to hold different attitudes about bullying than their children (Elsea & Smith, 2000; Williams, 2008). This disconnect in attitude could result in a lack of communication and under-reporting of child bully behavior or victimization. It is also possible that parent attitude does not align with the behavioral expectations determined by school policy (Eslea & Smith, 2000).

The role of the teacher. School and staff responses to victimization may depend on an educator's perception of victimization or school policy. Some educators may also

adopt certain views of bullying behavior in their classroom, including the idea that victimization is developmental, that bullying victimization is a common part of the process of growing up, that victimization makes children tougher, that a child deserves to be victimized, or suggesting that words are less hurtful than overt violence (Beane, 1999). Some schools may not have existing or consistent policies and practices related to victimization, resulting in inconsistent or inadequate adult responses and consequences. Research has concluded that the beliefs held by students, teachers, and parents about bullying can impact the accuracy with which victimization is recognized; and how victimization is perceived, perpetrated, and addressed (Bradshaw et al., 2007; Demaray, Malecki, Secord, & Lyell, 2013; Kochenderfer-Ladd & Pelletier 2008; Espelage & Swearer, 2010).

Research by Bauman and colleagues (2008) asked teachers across the United States to report on the actions taken when victimization occurred. This research found that teachers who received training in bullying prevention, or who were in schools with school-wide policies to address bullying were more likely to intervene (Bauman, Rigby, & Hoppa, 2008). However, there was inconsistency across techniques used to address victimization, and some techniques reflected strategies that are unsuccessful in the reduction of bullying behavior, like zero-tolerance policies (Bauman et al., 2008). Additionally, teachers and staff members who had received training or were implementing a program were still uncertain of the appropriate action to take when addressing victimization (Bauman et al., 2008). Thus, teachers with higher self-efficacy for addressing victimization were more effective in intervening.

A study by Bradshaw, Waasdorp, O'Brennan, and Gulemietove (2013) found that educators and staff members desire more training in bullying intervention, especially in working with students who are more at-risk for victimization. However, when assessing the opinions of students, Crothers and Kolbert (2004) found that students were *pessimistic* about the effectiveness of programs and the likelihood of teachers being able to help. The teachers in this study felt that students do not ask for assistance from them, for fear that they will make the situation worse (Crothers & Kolbert, 2004). Teachers also reported that students do not always correctly label or even notice victimization because they are not involved (Crothers & Kolbert, 2004). Bradshaw, Waasdorp, O'Brennan, and Gulemietove (2013) suggest that school staff members tend to underestimate the severity and incidence of victimization. Additionally, when looking at teacher perceptions about different types of victimization, research shows that teachers demonstrated less concern for students who were being socially excluded as compared to students being verbally or physically victimized (Yoon & Kerber, 2003).

Research supports the relationship between firm discipline and school-wide rules and consequences with lower levels of victimization (Ttofi & Farrington, 2011; Vreeman & Carroll, 2007). Teachers and school staff members are relied upon to carry out and reinforce discipline, rules, and consequences within the school building. These practices are reflected in teacher classroom strategies and discipline practices and are shown to be influenced by their attitudes regarding victimization.

In a review of research examining classroom management as it relates to bullying, Allen (2010) found that the research supports a link between management, practices, and

discipline strategies and victimization. Roland and Galloway (2002) found that teacher classroom management, including "caring, teaching, monitoring, and intervention," (p. 302) was correlated with lower levels of victimization. The class social structure was also found to mediate this relationship, suggesting that classrooms that promote positive peer relationships are less likely to experience victimization (Allen, 2010; Roland & Galloway, 2002).

Kochenderfer-Ladd and Pelletier (2008) found that teachers' individual attitudes about victimization were reflected in their classroom management and bullying intervention practices. Based on these beliefs, teachers might suggest that a student 'stand up' for himself or herself', make coping recommendations, assist a child in distancing them from a bully, or involve the students' parents (Kochenderfer-Ladd & Pelletier, 2008). However, when a teacher felt that bullying was normal behavior, they were less likely to intervene and assist the victimized child (Kochenderfer-Ladd & Pelletier, 2008). Teacher training, attitude, and willingness to intervene have been associated with teacher self-efficacy, and further to reported victimization in classrooms.

Teacher self-efficacy. According to Bandura (1977), self-efficacy can be defined as the perception of one's own ability to do something. Within the context of education, teacher self-efficacy often examines overall efficacy in terms of "instructional practices, classroom management, and student engagement," (Zee & Koomen, 2016, p. 984) or self-efficacy related to a specific area or practice. According to a review of teacher self-efficacy research, self-efficacy is linked to student academic instruction and outcomes, student motivation, classroom management and processes, and teacher well-being (Zee

and Koomen, 2016). In consideration of theory, more knowledge and training specific to bullying prevention and intervention strategies should lead to more self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2007), and higher levels of self-efficacy should predict responses or effort in managing particular situations (Hawley & Williford, 2015). However, research suggests that the relationship between victimization and self-efficacy is more complicated.

When considering teacher self-efficacy related to bullying and victimization, much of the research focuses on teacher efficacy for implementing programs and efficacy related to teacher ability to prevent or intervene when bullying occurs. While research supports that teacher beliefs can affect likeliness and willingness to intervene when these situations occurs (Kochenderfer-Ladd, & Peltier, 2008; Hawley & Williford, 2015); there are mixed results when examining the impact of teacher self-efficacy on student victimization (Gregus et al., 2017). Some research suggests that there is not a link between teacher self-efficacy and teacher responses (Yoon, 2004), while other research supports that students of teachers who report very high self-efficacy are more likely to identify as victims (Oldenburg et al., 2015). According to Oldenburg and colleagues (2015), this is thought to be as a result of over-confidence in skill and underestimation of the difficulty of these situations (Oldenburg et al., 2015). Other research supports that teacher self-efficacy can serve as a protective factor for students who are vulnerable to victimization (Guimond, Brendgen, Vitaro, Dionne, & Boivin, 2015), and that student perceptions of teacher self-efficacy were linked to personal bullying attitudes and behavior (Veenstra et al., 2014).

Gregus and colleagues (2017) contend that mixed results may be influenced by methodological differences in the measurement of victimization and differences in the conceptualization of bullying and self-efficacy. In an effort to address methodological issues, Gregus and colleagues (2017) developed a self-efficacy scale measuring teacher self-efficacy specific to bullying and victimization and intention to use strategies. Based on their research, Gregus and colleagues (2017) found that higher levels of student victimization were associated with very low or very high teacher self-efficacy; unless the teacher had strong intentions to use prevention and intervention strategies. Further, they found that teacher self-efficacy did not predict levels of victimization as reported by the teacher, but did impact levels of victimization as reported by students (Gregus et al., 2017).

Research has examined general teacher self-efficacy as it relates to student outcomes, as well as teacher intervention self-efficacy as it relates to student victimization. More information is needed in order to understand the relationship between teacher self-efficacy for general classroom practices such as discipline and climate and student levels of victimization. This would provide an understanding of how general classroom practices influence student levels of victimization, even if a teacher has not had exposure to training for particular strategies.

Student-teacher relationships. Not only are teachers' classroom practices and attitudes associated with victimization; research suggests that the relationship between a student and their teacher also has important implications for victimization. Positive connections between students and teachers can protect a student from experiencing

victimization or from the negative impact of victimization (Elledge et al., 2016; Di Stasio, Savage, & Burgos, 2016; Lucas-Molina, Williamson, Pulido, & Perez-Albeniz, 2015); Murray-Harvey & Slee, 2010). The research suggests that increases in conflict between students and their teachers and ineffectively managed conflict between peers can lead to increased disruption, difficulties with conduct, aggression, and victimization in schools (Brendgen et al., 2011; Kasen, Berenson, & Cohen, 2004; Kasen, Cohen, & Brook, 1998; Kasen, Johnson, & Cohen, 1990).

International research reflects associations between positive student-teacher relationships and lower levels of victimization. Murray-Harvey and Slee (2010) found an indirect association between positive and supportive relationships of Australian fifth through ninth graders with peers, teachers, and family and reduced victimization; however, the strongest effect was found for a positive student-teacher relationship. Lucas-Molina and colleagues (2015) found that eight to 13-year-old students in 27 schools in Spain self-reported that student relationships with teachers had an effect on reported victimization in their schools. Inversely, students indicated an association between negative student-teacher relationships and increased peer victimization (Lucas-Molina et al., 2015).

Research in the United States has examined student-teacher relationships among elementary students, late middle school students, and high school students. In a longitudinal study of 1,700 first, third, and fifth graders, Seridouk, Berry, and Gest (2016) found that children who indicated more positive relationships with their teachers in turn reported less victimization in all three grades. Similarly, Di Stasio, Savage, and

Burgos (2016) examined the individual and classroom-level factors associated with victimization at grades seven and eight for more than 670 students. Di Stasio and colleagues (2016) found that competitive classrooms and the use of social comparison were associated with victimization; whereas lower levels of victimization were associated with more positive perceptions of relationships between students and teachers. For the purposes of their study, students rated student-teacher relationship based on a teacher's fairness, friendliness, equal treatment of students, level of criticism, and if the teacher appeared to care about how the student felt (Di Stasio et al., 2016).

More information is needed in order to understand the importance of the student-teacher relationship as students transition from fifth grade to sixth grade. The research suggests that students are particularly vulnerable to victimization during the transition to middle school where students may experience less protective school environments and increased social conflict (Farmer et al., 2015; Kasen et al., 2004; Pellegrini, 2002; Pellegrini et al., 2010). Given the support for positive student-teacher relationships, more research is needed to explore this important relationship during this transitional stage.

Accuracy of estimations. Research examining parent, student, and teacher reports of victimization suggest that teacher and parent estimations of victimization frequency are not in agreement with student reports of perpetration and victimization (Bradshaw et al., 2007; Newgent et al., 2009; Stockdale, Hangaduambo, Duys, Larson, & Sarvela, 2002). In a study of rural elementary school students, teachers, and parents, Stockdale et al. (2002) concluded that both parents and teachers underestimated the prevalence of victimization as compared to student report. Thus, it is difficult to properly

address victimization when the adults around victimized youth do not have an accurate understanding of who is being victimized and how often. In a study of more than 1,200 sixth graders, Norwalk, Hamm, Farmer, and Barnes (2016) found that overall, teachers tended to not demonstrate *attunement* defined as the accurate identification of students who self-identified as victims. The researchers found that in schools where teachers were attuned to students who identified as victims, students indicated that peers were more likely to take action when someone was being victimized (Norwalk et al., 2016). The research demonstrates that teachers can have a positive impact on the social culture and response to bullying within a school by being aware of victimization.

Importance of systemic factors in schools. Given the existing literature, there is a potential for the adults in children's lives to maintain misperceptions about severity, outcomes, and response to victimization; be inaccurate in their estimation of victimization prevalence; be perceived as unable to assist in victimization situations; and be inconsistent and ineffective in their responses to a student being victimized. However, strong relationships with parents and teachers that are supportive and authoritative can protect students from victimization. As victimization most commonly occurs in the school context, it is especially important to understand more about the role that adults in schools play in the trajectory of victimization. In addition, the role of adults in contributing to systemic school-based factors that have an impact on bullying and victimization merits attention.

Systemic school factors such as prevention program implementation (including specific bullying programs or Positive Behavior Interventions and Supports), the creation

and utilization of school policies, and improved school climate have been shown to influence the prevalence of victimization in schools in a positive way. More research is needed in order to understand the impact of school-based factors on the prevalence of victimization. Namely, how can the systems of support in schoolwork increase or decrease the likelihood of victimization.

Summary

The existing research literature has advanced our understanding bullying and victimization dynamics; namely by providing more research about definitions, forms, those at-risk, individual and systemic factors that lead to and maintain bullying and victimization, and strategies for intervention and prevention. It is well understood that bullying consists of multiple components including negative aggressive acts intended to cause harm, that are perpetrated frequently by a peer or group of peers with more perceived social power (Bovaird, 2010; Cornell & Bandyopadhyay, 2010; Cornell & Cole, 2012; Espelage & Swearer, 2003; Olweus, 1993a, 1993b, 1993c, 1994, 2010; Smith et al., 2002; Swearer et al., 2010). Youth may be involved in a bullying dynamic by being a perpetrator, victim, both, or bystander (Espelage & Swearer, 2003). Victimization can be understood as the experience of children and adolescents who are exposed to these repeated negative acts at the hands of chronic aggressors. Bullying victimization can be physical, verbal, social or relational, and electronic in nature (NASP, 2012). Victimization can occur anywhere but is most likely to occur in the school-based setting (Musu et al., 2019).

The extant research provides information about those students who are most likely to be targeted by bullying, individual characteristics that lead to being victimized, and outcomes associated with victimization. Youth who are perceived as different from their peers are more likely to be victimized. Research suggests that this includes sexual minority youth, racially and ethnically diverse students, immigrant and religious minority students, students with disabilities, and students of lower social economic status (Due et al., 2009; Finley, 2014; Scherr & Larson, 2010, U.S. Department of Health and Human Services, n.d.b; Swearer et al., 2010; Tippett & Wolke, 2014). Students who are victimized also tend to demonstrate the following social difficulties: friendship maintenance, insecurity, sensitivity, lower social status, and loneliness (Nansel et al., 2001; Pellegrini, Bartini & Brooks, 1999; Shetgiri, 2013; Smokowski & Kopasz, 2005).

Overall, overt victimization tends to peak as students move to the sixth grade due to a desire to establish social power as well as developmental, social, and contextual changes (Dinkes et al., 2009; Kasen et al., 2004; Pellegrini, 2002; Ryoo et al, 2015; Wang et al., 2015). As students age, overt victimization decreases and covert forms of victimization increase (Yeager et al., 2015). Students who are victimized experience short- and long-term negative outcomes that can include depression, anxiety, low self-esteem, academic difficulties, belief in the self and others, (Farrington & Baldry, 2010; Finley 2014; Hawker & Boulton, 2000; Orpinas & Horne, 2006; Swearer et al., 2001; Swearer et al., 2004).

The social-ecological model provides a helpful framework for understanding the development and maintenance of bullying and victimization, risk and protective factors,

and therefore ways to prevent victimization and intervene effectively. The research demonstrates that negative parenting styles and attachment styles, violence in the home, social difficulties, peer selection, social dominance, and school climate are associated with bullying victimization (Bowes et al., 2009; Espelage & Swearer, 2003; 2010; Fox & Boulton, 2005; Shields & Cicchetti, 2001). Social-ecological factors such as positive and secure relationships, close friendships, social problem-solving skills, school prevention techniques, and relationships and training of teachers can aide in the reduction of victimization (Farrington & Baldry, 2005; Bauman et al., 2008; Duncan, 2004; Fox & Boulton, 2005; Kochenderfer-Ladd & Pelletier, 2008; and Ttofi & Farrington, 2011).

Rose, Nickerson, and Stormont (2015) suggest that more research is needed to identify the risk factors and protective factors that are based within the social-ecological model. Specifically, Rose et al. (2015) indicate that more knowledge is needed about the "individual and broader systemic issues" (p. 342) that can lead to increased bullying behavior and victimization. Hong and Espelage (2012) suggest that a better understanding of the systemic factors based within the school and community contexts is needed in order to understand the risk factors that perpetuate victimization.

Rose et al. (2015) suggest that future research must include a better understanding of the protective factors and risk factors associated with victimization within the social-ecological model. Furthermore, Espelage and Swearer (2010) indicated that more research is needed in order to more clearly understand the role that parents, teachers, and schools play in the development and maintenance of victimization.

While practitioners and researchers alike have more information about how parents, siblings, peers, friends, and individual factors contribute to both bullying and victimization, more information is needed about the school-based factors. The research has identified those students who are more likely to be victimized, the characteristics that put them at risk of victimization, and the outcomes associated with being victimized. It is also well understood that victimization is most likely to occur within the school setting, most often in the classroom and hallway or stairwells (Musu et al., 2019). Thus, further information about school-based factors that impact prevalence of victimization is needed.

Statement of the Problem

Bullying is a social, developmental, and public health concern at the individual, school, community, and national levels. Bullying has been well-researched, leading to a better understanding of the factors that impact the development and maintenance of bullying behavior. Research has also resulted in the development of programs and strategies to address bullying, particularly in the school-based setting where it is most likely to occur. Less research has focused on the trajectory, experience, and contextual factors associated with victimization; especially within the context of the transition to middle school where a peak in overt victimization is observed.

The extant bullying and victimization research has identified many contextual factors that contribute to the likelihood of an individual engaging in bullying behavior and experiencing victimization. Contextual factors can be understood within the social-ecological model, which posits that development is influenced by the interaction of individual, peer, familial, school, and community factors over the course of development

(Bronfenbrenner, 1979). The school-based context is of particular importance given that bullying victimization is most likely to occur within the confines of a school building (Musu et al., 2019). However, research suggests that more information is needed to understand the impact that larger, systemic characteristics that schools have on bullying and victimization alike (Hong & Espelage, 2012). Research that does address school-based factors tends to focus on those that are associated with the development and maintenance of bullying behavior with the goal of reducing incidence. More research is needed to understand factors that are associated with the trajectory and experience of being victimized. This suggests that a more complete understanding of the trajectory of victimization and the school-based factors that are associated with victimization is crucial in order to better understand and prevent victimization in the schools.

More research about how general, school-based factors such as student perception of climate, teacher perception of efficacy for classroom discipline and environment, and student-teacher relationship impact student victimization when it is most likely to occur. Much research has focused on the impact of these types of factors within the context of a bullying prevention program implementation, rather than the general or typical school context. Other research focuses on victimization within a narrower context of only elementary students or middle school students, rather than the transition from elementary to middle school. In general, bullying and victimization research has produced mixed results given the difficulty of conceptualizing the definitions of bullying and victimization as well as accurately measuring these constructs. More research is needed

to support our collective comprehension of the trajectory of overt victimization during the transition to middle school, and how the school context plays a role in this trajectory.

Rather than focusing on the strategies, program implementation, or experiences within one school, district, or region; this research aimed to use national data in order to support a broader understanding of systemic school factors that impact victimization. The goal of the current study is to address this gap and provide a better understanding of the trajectory of victimization throughout the elementary years and into the sixth grade year, as well as the impact of school based factors at the sixth-grade level, given the peak of frequency at this time of developmental and contextual change for most students.

Rationale for the Current Study

Victimization is most prevalent during the middle school years; increasing as students reach upper elementary grades and peaking during the early middle school years (Dinkes et al., 2009; Hong & Espelage, 2012; Ryoo, Wang, & Swearer, 2015). Rivers and colleagues (2009) found that children in middle school report more severe victimization than those in high school and elementary school. Thus, it is critical to examine the factors that are associated with victimization as students transition to middle school. Research must explore the experience of students at this time of transition in order to understand the environmental changes occurring at the school level, and the impact that these changes have on victims and non-victims alike. Identification of factors that are associated with victimization at this transition can support systems-level changes to reduce victimization and improve student experience.

The extant research has identified individual, peer, familial, school, and community-based factors within the social-ecological model that contribute to bullying and victimization. In two reviews of research, Swearer and Hymel (2015) and Swearer and colleagues (2010) identified factors at each level that contribute to victim status. Factors that are associated with the school context include school climate, student engagement in their school, school-based efforts for prevention, peer relationships within the school setting, students who appear different among peers at school, student-teacher relationships, and family involvement in school (Swearer et al., 2010; Swearer & Hymel, 2015). What follows are descriptions of the school-based factors that the research has identified as being associated with victimization in the school setting, especially as students transition from fifth to sixth grade.

Pellegrini (2002), Pellegrini and colleagues (2010), and Ryoo and colleagues (2015) examined the developmental transition from elementary school to high school and found that increases in victimization in middle school can be associated with the desire to gain social status within the middle school hierarchy. When they compared the developmental and contextual transition, Wang and colleagues (2015) found that changes in peer victimization can be associated with changes in a student's physical context, in moving from one school building to another. Kasen and colleagues (2004) posit that as students physically transition to a new building, they transition to a climate that offers less protection for vulnerable students. The existing research literature also suggests that teacher engagement, response, and attitude contribute to school climate and thus the maintenance or reduction of victimization (Biggs, Vernberg, Twemlow, Fonagy, & Dill,

2008; Swearer & Hymel, 2015). Existing research suggests that the developmental and physical transition from fifth grade to sixth grade has significant social implications for student involvement in victimization. This line of research suggests that students who are more vulnerable to victimization due to social standing may also experience compounding difficulties related to a less supportive climate in the middle school setting. It is important to understand how school-based factors can predict student experience, and to understand how the climate experience might differ from fifth to sixth grade.

Knowing that the sixth-grade year is defined by social, developmental, and contextual changes, more research is needed in order to understand the impact of these changes as it relates to victimization. School-based factors are particularly important due to the nature of bullying and the likelihood that victimization is experienced in the school setting. A better understanding of the school-based experiences and practices that are associated with victimization, allows for change and development of strategies that are aimed at improving the experience of victimized youth and ultimately reducing the likelihood that students are victimized. The current study provides information to support our understanding of school-based predictors in sixth grade. These factors were explored outside of the context of program implementation to support knowledge about more general and systemic school-based experiences that impact victimization.

Muijis (2017) identified school-based factors related to particular conditions, policies, and processes to provide insight about how schools and classrooms can influence the prevalence of bullying and victimization. Muijis (2017) found that school level factors including policies for bullying and behavior and home-school collaboration,

being in a faith-based school, leadership and management, and targeting groups about bullying and dealing with bullying had a positive impact on victimization. Muijis (2017) also found that teacher collaboration and partnership with parents were associated with decreases in victimization, though the relationship for these factors was weaker. More specific information about systemic, school-based factors, as well as teacher factors and their association with student vulnerability is needed (Hong & Espelage, 2012; Rose et al., 2015). For example, consideration of teacher self-efficacy as it relates to general classroom practices including discipline and creation of a positive environment for their students. In addition, an understanding of the school climate from the perspective of the student in terms of their attachment to and attitude toward school; and the teacher's perspective of their relationships with students. The current study provides further examination of these factors from the perspective of teachers and students, during the time in which research suggests that victimization is most likely to occur.

Research has also identified school-based factors that relate directly to school-based efforts to prevent victimization such as fidelity of implementation of programming, school policies, teacher professional development and efficacy in addressing bullying, and student training (Ttofi & Farrington, 2011). Other factors related to broad school-based systems and management have been associated with prevalence of victimization, including peer conflict, discipline, supervision, student-teacher relationships, home school collaboration, and school climate (Swearer, Espelage, Vaillancourt, & Hymel, 2010; Swearer & Hymel, 2015). These factors as well as other social-ecological factors have implications for impacting the level of victimization experienced in the school-

based setting. The current study aims to provide further information about the impact that school-based factors can have on student victimization, especially as students transition from fifth to sixth grade.

Ttofi and Farrington (2011) examined the effectiveness of school-based prevention programs and strategies and identified school-based factors that contributed to a decrease in victimization. Research suggests that some school-based, systems-level factors are related to decreases in bullying and victimization in the school setting. These factors include program implementation and fidelity, school- or district-wide policy to address bullying and behavior, school climate, staff self-efficacy in addressing bullying victimization, and social relationships within schools (Hazler & Carney, 2011; Ttofi & Farrington, 2011). Other school-based factors that have been identified to be associated with bullying victimization include school climate, discipline, supervision, parent involvement, social support, student-teacher relationships, staff training, bystander response, and classroom management and rules (Hazler & Carney, 2011; Swearer, et al., 2010; Swearer & Hymel, 2015; and Ttofi & Farrington, 2011).

Research conducted by Ttofi and Farrington (2011), Hazler and Carney (2011), and others provides important information about the effectiveness of school-based anti-bullying programs and strategies. However, not all districts or buildings are in a position to implement a packaged program to assist in their efforts to reduce victimization. Thus, having an understanding of the effectiveness of programming is important for those districts who are engaged in program implementation; but it might not be as useful for a district or building that cannot support or afford a packaged program. While

implementation of school-based programming is considered a best practice, it is not mandated and may not be feasible. Thus, it is important to identify the general school-based factors that impact victimization, regardless of whether or not specific strategies or programs are in place. Research about school-based factors that predict victimization has centered around general factors related to implementation of bullying prevention programs, rather than factors that could be measured in most schools regardless of whether or not a school has implemented prevention strategies. Further exploration of school-based factors that may be predictive of student victimization status can address current gaps in the research literature and help identify processes related to bullying victimization. Existing research supports our understanding of the importance of school factors such teacher relationships, prevention program implementation, the importance of school climate, social functioning within the school environment, and risk and protective factors for victimization.

The research also provides an understanding of the effects that bullying and victimization can have on school-based indicators such as achievement, behavior, attendance, and social functioning. What is less well known are the specific factors that contribute to our understanding of victimization within the school and classroom contexts as students transition to sixth grade and experience a peak in victimization. This could include student-teacher relationships, teacher self-efficacy in relation to discipline and creating a positive environment, and student perceptions of school climate. More information is needed in order to understand how specific school-based factors can lead to the increase of victimization prevalence in the transition to middle school.

The purpose of the present study was to explore the association between victimization and specific systemic, school-based factors such as teacher self-efficacy, school climate, and student-teacher relationships. Further understanding of these specific factors may contribute to the current understanding of school-level systems and how they impact the development and maintenance of victimization, especially in the transition to middle school. These school-based factors are at the foundation of school climate, school organization, and school management; and are factors that have significance in all schools and districts. The current study examined several key facets of the school setting to better understand the impact of general school-based factors on student victim status.

The present study examined the trajectory of victimization from grades three through six and the experience of victimization in the sixth grade. Sixth grade represents a period of physical and developmental transition as students move from elementary grades to middle school grades and establish new social hierarchies for the purpose of developing relationships (Pellegrini, 2002). Following the fifth grade, the majority of American children transition to a new building following the six to eighth grade configuration of middle school (Juvonen, Le, Kaganoff, Augustine, and Constant, 2004). The existing body of research has identified individual, familial, social, and school-based factors that contribute to bullying and bullying victimization within a Social-Ecological Model (Bronfenbrenner, 1979). However, more information is needed to support our understanding of the interaction between specific school-based factors such as teacher self-efficacy, student perception of climate, and student teacher relationship and

victimization in the sixth grade, given the importance of this transition period and social relationships during this time.

The current study utilized generalized linear mixed modelling, McNemar's test, and binary logistic regression analysis to better understand the stability or instability of student role as victim from third to sixth grade. Data analysis allowed for an exploration of role stability over time. The study utilized data analysis to compare the level of victimization measured at fifth grade and sixth grade in order to determine if a significant difference existed among the study participants. The study then explored the relationship between systemic school-based factors and victimization in the sixth grade after controlling for research-supported factors. Data analysis assisted in determining if specific school-based factors in the sixth grade were predictive of victim status in the sixth grade. This study addressed a gap in the research by exploring the trajectory of victimization across elementary school and into the sixth grade and exploring the association between general school-based factors and victimization.

Research Questions

To address the gaps in the existing research about school-based factors that contribute to victimization, the current research study answered the following research questions.

I. Question one: For participants who were identified as victims in grade three, to what extent is the role of victim stable from grades three to six?

II. Question two: When exploring the sample as a whole, is there a significant difference between overall levels of Victimization for participants in the sixth grade versus the fifth grade?

III. Question three: To what extent are school-based factors in the sixth grade predictive of victim status in the sixth grade? The following variables were used for this research question:

1. Dependent Variable
    a. Victimization
2. Control Variables
    a. Social Support
    b. Puberty
    c. Socioeconomic Status
3. School-based Independent Variables
    a. Teacher Self-Efficacy for Positive Climate
    b. Teacher Disciplinary Self-Efficacy
    c. Negative Attitude Towards School
    d. School Attachment
    e. Student-Teacher Relationship

CHAPTER II

METHODOLOGY

Overview

The purpose of the current study was to expand upon knowledge about the role that school-based factors play in youth experiences of victimization associated with bullying in the transition to the sixth grade. This study aimed to explore the stability of the victimization in elementary school, the overall level of victimization in fifth grade compared to sixth grade, and the impact of school-based factors on victimization in the sixth grade. This study explored student victim status in the third through sixth grades to understand the stability of victimization as students progress through elementary grades. Differences between victim status for fifth and sixth graders were investigated to determine if there is a significant difference between overt victimization at both grade levels. The predictive role of school-based factors, including student-teacher relationships, school climate, and teacher self-efficacy for creating a positive climate and for discipline was explored during sixth grade to determine the degree to which these factors can predict victim status in grade six. This chapter will describe the participants selected for the study, the instruments utilized for data collection, description of instruments, procedure, methods selected for data analysis, and research questions.

Participants

The National Institute of Child Health and Human Development (NICHD) initiated the Study of Early Child Care, which eventually became the Study of Early Child Care and Youth Development (SECCYD). According to the SECCYD study

overview, this study was initiated in 1991 and was completed in 2009 after collecting longitudinal data about child development from birth through ninth grade, in four phases (United States Department of Health and Human Services [US DHHS], National Institutes of Health [NIH], and the Eunice Kennedy Shriver National Institute of Child Health and Human Development [NICHD], 2008). The SECCYD followed 1,009 children through all four phases of the study. Phase I collected data for 1,364 children ages zero to three from 1991 to 1994. Phase II examined 1,226 of the phase one children ages three to first grade from 1995 to 1999 (US DHHS, NIH, and NICHD, 2008). From 2000 to 2004, Phase III data collection took place with 1,061 of the original youth when they were in second through sixth grade (US DHHS, NIH, and NICHD, 2008). The fourth and final phase took place from 2005 to 2007 and collected data for 1,009 youth from seventh to ninth grade (US DHHS, NIH, and NICHD, 2008).

Purpose

The purpose of the study was to collect longitudinal data about child development from birth to high school in order to provide more information about the associations between early experiences and developmental outcomes. Specifically, the research aimed to provide data to better understand associations between childcare experiences and "social, emotional, intellectual, and language development" as well as "their physical growth and health" (US DHHS, NIH, and NICHD, 2008). This research database has been utilized in numerous studies that examine child and adolescent development.

Study Participants

In 1991, SECCYD recruited a total of 1,364 families of healthy babies in the United States (U.S.) to participate in data collection for the research study (NICHD Early Child Care Research Network, 2005). Participants were selected from one of 10 hospitals across the U.S. (NICHD Early Child Care Research Network, 2005) that served as data collection locations for the study. There was a total of 8,986 mothers who gave birth at the 10 collection hospitals during the time of recruitment (NICHD Early Child Care Research Network, 2005). Each data collection site utilized its own time period of recruitment within the year 1991. Each collection site enrolled participants based on a conditional, random sampling procedure. Participants were selected to represent a range of anticipated experiences related to childcare within the first year (NICHD Early Child Care Research Network, 2005). The samples were also selected to be demographically representative of the data collection location. The samples did not include newborns who had an extended hospital stay, who had a disability at birth, who were born to mothers with limited English proficiency, whose mother had an identified difficulty with substance abuse, or whose mother did not to live near the data collection site (NICHD Early Child Care Research Network, 2005).

Phase III. The sample of interest for the current study was gathered from Phase III of the SECCYD dataset. Of the original 1,364 participant children, 1,061 continued engagement in data collection during Phase III. Phase III examined developmental markers from second through sixth grade. This phase was selected for analysis based on the inclusion of participants who were within the developmental period of interest.

Research suggests an increase and peak in overt forms of victimization, defined as physical and verbal victimization, as youth transition into middle school (Espelage & Horne, 2008; Nansel et al., 2001; Pellegrini & Bartini, 2000; Smith, Madsen, & Moody, 1999). While grade levels within a building vary by school district, the majority of American children transition to a new building for the sixth grade (Juvonen, Le, Kaganoff, Augustine, and Constant, 2004). The transition to middle school also represents a developmental transition as youth engage in behavior that assists in the development of social dominance (Pellegrini, 2002; Ryoo et al., 2015). Phase III also includes data collected in early to late elementary grades, which allowed for an exploration of factors that may predict or contribute to victimization status in the sixth grade.

Description of Instruments

In order to answer this study's research questions, the following dependent variables, independent variables, and control variables were created based on data available from the NICHD SECCYD Phase III dataset. What follows is a description of each variable and information about the development of each variable. Information about why the variable was selected is also provided.

Dependent Variable

Victimization served as the dependent variable. The Victimization variable developed for the current study represents youth who experienced overt physical or verbal victimization, using data triangulation. The NICHD SECCYD measured the social behavior of participants using multiple scales from multiple perspectives; this

included experiences with bullying victimization. For the purposes of the current research, two sources of data were utilized to create the dependent variable, 'Victimization.' Social experiences of the study participants were measured by the participant's mother and teacher. The current analysis utilized parent and teacher ratings of victimization provided on corresponding scales of peer interaction and behavior.

Parent input was derived from the measure titled *My Child's Behavior with Other Children*, which asked mothers to estimate how often their child engaged in a behavior and was the target of peer behavior. Responses reflected adult agreement with child behavior or experience. Possible responses fell on a three-point Likert scale, 0 = Not True, 1 = Sometimes True, and 2 = Often True. Seven items of the scale were identified as items related to overt physical or verbal victimization (Table 1). An instrument titled *Interactions with Other Children* asked teachers the same set of questions as *My Child's Behavior with Other Children*. Teachers were also asked to indicate how often (0 = Not True, 1 = Sometimes True, 2 = Often True) the study youth engaged in a behavior or experienced a behavior from a peer. Seven items (Table 1) of this scale were identified as items related to overt physical or verbal victimization. *Interactions with Other Children* and *My Child's Behavior with Other Children* were measured by the study child's mother and teacher in third, fourth, fifth, and sixth grade.

The seven victimization items on both scales were adapted from Kochenderfer and Ladd's 1996 Peer Victimization Scale. The selected items were measures of frequency of overt physical and verbal victimization from peers. The seven victimization items on the parent scale, *My Child's Behavior with Other Children*; and on the teacher

scale, *Interactions with Other Children*, are identical. Cronbach's alpha was calculated for the Victimization and ranged from .88 to .90 for each grade. Chronbach's alpha was .88 for grade three, .89 for grade four, .89 for grade five, and .90 for grade six.

Table 1

Items from My Child's Behavior with Other Children and *Interactions with Other Children*

Child's behavior with peers (Likert scale from 0 to 2; Not True to Often True)
Items
Is ridiculed by peers
Is picked on by other children
Is called names by peers
Is pushed around by other children
Peers say negative things about him/her to other children
Is teased or made fun of by peers
Is hit or kicked by other children

Note. Adapted from Peer Victimization Scale (Kochenderfer & Ladd, 1996)

For the current research study, a victimization score was calculated for parent ratings and for teacher ratings independently, for each participant, in each year of the study phase (grades three through six). For each rater, level of victimization was calculated by averaging the scores for the seven victimization items. Average scores ranged from 0 to 2, with higher scores indicating greater frequency of victimization. Given that the data were skewed, and the majority of participants averaged zero in the calculation of Victimization, a decision was made to consider all participants with an average rater score of zero as a non-victim; and those with an average rater score of more than zero as a victim. This decision was made for each participant, at each grade level of

interest. For a student to be considered a victim for a given year, both parent and teacher average ratings had to have been greater than zero. The Victimization variable was dichotomous, and a score was assigned based on the decision rule of parent and teacher ratings. Victimization scores of zero suggested the student was not victimized in that year and Victimization scores of one suggested that the student was victimized that year. Thus, the Victimization variable reflected an overall representation of victim status for a given grade as observed by parent and teacher. Victimization scores were calculated for all participants when they were in the third, fourth, fifth, and sixth grade. Victimization was used as the dependent variable for all research questions. Victimization in each grade was analyzed in question one, Victimization in grades five and six was explored in question two, and sixth grade Victimization was analyzed in question three.

Independent Variables

What follows is a description of the variables of interest that were further explored to determine predictive impact of school-based factors on bullying victimization in the sixth grade. Independent variables included grade (or time) and school-based factors of interest. School-based factors included Teacher Self-Efficacy for Positive Climate, Teacher Disciplinary Self-Efficacy, Negative Attitude Towards School, School Attachment, and Student-Teacher Relationship. School climate is defined as the school experience including "norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures (National School Climate Center, n.d.). For the current study, school climate is reflected in teacher and student responses to items in the included rating scales. The independent variables were developed using existing

scores calculated from teacher and student ratings on scales administered in Phase III of the NICHD SECCYD.

Grade. Student grade was an important factor for each research question, but served as a fixed effect variable for the first question. For the SECCYD, data were collected and organized annually based on the study year and student grade. Grade was determined based on the year that Victimization data were collected for each participant. Parent and teacher responses were collected in grades three, four, five, and six for each student to allow for longitudinal comparisons of individual students. Victimization scores were calculated for each student at each grade level. Time, or grade level, was used in the first research question as a fixed effect variable to explore the longitudinal impact of grade on victimization.

Teacher self-efficacy related to school climate and discipline. The *Teacher Self Efficacy Scale* (Bandura, 1986) required participants' teachers to rate their own level of efficacy in terms of decision-making, school resources, instruction, discipline, and positive school climate. Teachers were asked to rate their self-efficacy for 21 items on a nine-point Likert scale (1= Nothing, 3 = Very Little, 5 = Some Influence, 7 = Quite a Bit, 9 = A Great Deal). During Phase III of the SECCYD dataset, teachers of participant children were asked to complete this scale when the child was in third, fourth, fifth, and sixth grade. For this rating scale, responses were combined to create scores including Instructional Self-Efficacy, Teacher Disciplinary Self-Efficacy, Teacher Efficacy for Positive School Climate, and Total Self-Efficacy. For the purposes of the current study, Efficacy to Create a Positive School Climate was used as the measure for the variable

titled, Teacher Self-Efficacy for Positive Climate. This variable was selected based on the association between school climate and peer victimization. Teacher Self-Efficacy for Positive Climate score for the SECCYD was calculated by creating a sum of six items (Table 2), the sum was imputed with proportional weighting with higher scores suggesting more self-efficacy for creating a positive climate. The Cronbach's alpha for Teacher Self-Efficacy for Positive Climate was .81.

Table 2

Items from Teacher Self-Efficacy Scale (Positive Climate)

Teacher opinions about efficacy (Liker scale from 1 to 9; Nothing to A Great Deal)
Items
How much can you do to make the school a safe place?
How much can you do to make students enjoy coming to school?
How much can you do to get students to trust teachers?
How much can you do to enhance the collaboration between teachers and the administration to make the school run effectively?
How must can you do to get students to believe they can do well in schoolwork?

Note. Adapted from the Teacher Self Efficacy Scale (Bandura, 1986)

Teacher Disciplinary Self-Efficacy was measured by the *Teacher Self-Efficacy Scale* (Bandura, 1986). This scale measured teacher self-efficacy for instruction, discipline, creating a positive school climate, and a total self-efficacy score. Teachers were asked to rate their efficacy for 21 items on a nine-point Likert scale (1= Nothing, 3 = Very Little, 5 = Some Influence, 7 = Quite a Bit, 9 = A Great Deal). For the purpose of understanding teacher self-reported efficacy for classroom discipline, the Teacher Disciplinary Self-Efficacy score was utilized as the measure for the variable titled, Teacher Disciplinary Self-Efficacy. The Disciplinary Self-Efficacy score was computed

based on the sum of responses for three items (Table 3), with higher scores reflecting more self-efficacy related to discipline. Cronbach's alpha for Teacher Disciplinary Self-Efficacy was .74. This independent variable was selected due to the association between school discipline and victimization.

Table 3

Items from Teacher Self-Efficacy Scale (Discipline)

Teacher opinions about efficacy (Likert scale from 1 to 9; Nothing to A Great Deal)
Items
How much can you do to get children to follow classroom rules?
How much can you do to control disruptive behavior in the classroom?
How much can you do to prevent problem behavior on the school grounds?

Note. Adapted from the Teacher Self Efficacy Scale (Bandura, 1986)

School climate: School attachment and negative attitude towards school. School climate was evaluated using the School Attachment and Environment Scale, adapted from Ad Health and the New Hope Study (Cernkovik & Giordano, 1992; Houston, Duncan, Granger, McLoyd, Mistry et al., 2001). During Phase III of the SECCYD study, students in the sixth grade completed this scale. The scale was titled *What My School is Like* for the SECCYD study, and asked the student to respond to 19 items about their perceptions of the school, teachers, and their study activities on a four-point Likert scale (1 = Not at all True, 2 = Not Very True, 3 = Sort of True, 4 = Very True). Item responses for this rating scale were combined to create four scores including School Attachment, Teacher Bonding, School Activity Partition, and Negative Attitude Towards School. For the purpose of the current study, student perception of school climate represented by the scores for School Attachment and Negative Attitude Towards

School were used as variables of the same name. School Attachment was measured by averaging the participant's responses to five items (Table 4), with higher values suggesting more positive attachment to their school. This variable was selected for its importance related to student perception of school climate, and the association between school climate and victimization. Cronbach's alpha for School Attachment was .74.

Table 4

Items from What my School is Like (Attachment)

Student opinions about school (Likert scale from 1 to 4; Not at all True to Very True)
Items
I am happy to be at my school
The teachers at my school treat students fairly
I feel close to others at my school
I feel safe at my school
I feel like I am a part of my school

Note: Adapted from The New Hope Study (Huston, Duncan, Granger, Bos, McLoyd, Mistry, et al., 2001), and The National Longitudinal Study of Adolescent to Adult Health (Harris, Halpern, Whitsel, Hussey, Tabor, & Udry, 2009)

Negative Attitude Towards School was computed by averaging the participant scores for six items of the *What my School is Like* rating scale (Table 5). Higher scores on this scale suggested a more negative attitude toward school. Chronbach's alpha was .71 for Negative Attitude Towards School. This variable was also selected for its importance related to student perception of school climate.

Table 5

Items from What my School is Like (Negative Attitude)

Student opinions about school (Likert scale from 1 to 4; Not at all True to Very True)
There are too many kids at my school
I have too many different classes
There are too many kids that I don't know
The work is too hard
I feel lost at my school
Teachers ask me to do things that I don't know how to do

Note: Adapted from The New Hope Study (Huston, Duncan, Granger, Bos, McLoyd, Mistry, et al., 2001), and The National Longitudinal Study of Adolescent to Adult Health (Harris, Halpern, Whitsel, Hussey, Tabor, & Udry, 2009)

Student-teacher relationship. Student-teacher relationships were measured using the *Student-Teacher Relationship Scale: Short Form* (Pianta, 2001). The scale used in the study was a 15 item (Table 6) five-point Likert rating scale that asked teachers to reflect on their relationship with the study child (1 = Definitely Does not Apply, 2 = Not Really, 3 = Neutral, Not Sure, 4 = Applies Sometimes, 5 = Definitely Applies). Responses on items of this scale were combined to create the following scores: Teacher Conflict with Child, Teacher Closeness with Child, and Teacher Total Positive Relationship with Child.

For the purpose of the current study, the Teacher Total Positive Relationship with Child Score was utilized to represent the Student-Teacher Relationship variable. Teacher Total Positive Relationship was calculated as the sum of fifteen items, with eight items being reflected before inclusion. This score was assigned proportional weighting, with higher scores representing a more positive overall relationship between teacher and student. This variable was selected based on the association between student teacher

relationships and victimization. Chronbach's alpha was .88 for Student-Teacher Relationship.

Table 6

Items from Student-Teacher Relationship Scale: Short Form

Teacher relationship with student (Likert scale from 1 to 5; Definitely does not apply to Definitely Applies)
Items
I share an affectionate warm relationship with this child
This child and I always seem to be struggling with each other
If upset, this child will seek comfort from me
This child is uncomfortable with physical affection or touch from me
This child values his/her relationship with me
When I praise this child, he/she beams with pride
This child spontaneously shares information about himself/herself
This child easily becomes angry with me
It is easy to be in tune with what this child is feeling
This child remains angry or is resistant after being disciplined
Dealing with this child drains my energy
When this child wakes up in a bad mood, I know we're in for a long and difficult day
This child's feelings toward me can be unpredictable or can change suddenly
This child is sneaky or manipulative with me
This child openly shares his/her feelings and experiences with me

Note: Adapted from Student Teacher Relationship Scale (Pianta, 2001)

Control Variables

What follows are descriptions of the variables that were used as control variables in the current research. For the current study, extant research was reviewed, and control variables were selected based upon research support for a relationship between the variable and victimization. Control variables included Social Support, Socioeconomic Status, and Puberty. Research suggests that social support from peers can serve as a protective factor against victimization (Demaray and Malecki, 2003), and that victims

highly value social support from peers but are less likely to report having support (Espelage & Swearer, 2010; Rigby, 2000). Research also indicates that students who are perceived as being different are more likely to be victimized (Tippet & Wolke, 2014). This applies to students of lower socioeconomic status who are less likely to have access to resources and material goods, and more likely to experience negative environments that impact their social skills (Tippett & Wolke, 2014). Research also supports that students who enter puberty early or late, are more likely to be victimized due to physical differences and social implications (Craig, Pepler, & Connolly, 2001; Haynie & Piquero, 2006).

Social support. Student Social Support was measured using the *Kids in My Class at School Scale*. *Kids in My Class at School* asked the study child to indicate how often their peers engaged in certain prosocial behaviors. This scale included 18 items (Table 7) from three different scales created by Gary Ladd and colleagues (Kochenderfer & Ladd, 1996; 1997; Ladd, Kochenderfer, & Coleman, 1996; 1997). Response options were on a five-point Likert rating scale (1 = Never, 2 = Hardly Ever, 3 = Sometimes, 4 = Most of the Time, and 5 = Always).

Ratings form this scale were used to form three scores, Social Support from Peers, Perceived Victimization, and Engagement in Bullying Behavior. For the purposes of the current study, the Social Support from Peer Score was utilized to develop the Social Support control variable. Social Support from Peers was calculated as the weighted average of ten items that asked a child to indicate how often students in their class engaged in supportive and social behaviors with the student. Higher scores suggested

more perceived social support from peers. For the purpose of the current study, the Social Support from Peer Score served as a control variable. This control variable was selected due to the association between peer support and victimization. Chronbach's alpha for Social Support was .92.

Table 7

Items from Kids in my Class at School

Are there kids who (Likert scale from 1 to 5; Never to Always)
Items
Tell you you're good at doing things
Make you feel better if you're having a bad day
Let you play with them
Explain the rules to a game if you don't understand
Make you feel happy
Share things like stickers, toys, and games with you
Help you if you hurt yourself on the playground
Tell you you're their friend
Help you if kids are being mean to you
Ask you to play with them

Note: Adapted from Perceptions of Social Support (Ladd, Kochenderfer & Coleman, 1996;1997)

Socioeconomic status. Socioeconomic Status was measured by the Mother and Partner Household and Income section of the *Social Age Interview* completed by study mothers during the study child's second, third, fourth, fifth, and sixth grade years. This questionnaire asked mothers to indicate the range that reflected their household income. An Income to Needs Ratio was then calculated based on the pre-tax income of the adults living in the home, the number of children living in the home, and the poverty threshold

for the 2002-2003 year. Respondents selected a range that reflected their income. The median income from the selected range was utilized for the income to needs ratio calculation. According to the United States Census Bureau (n.d.), the census bureau measures poverty by dividing a family's income by the national poverty threshold for that year. The Income to Needs Ratio was presented as a continuous variable, with ratios of 1.00 or above suggesting the family was above the poverty line, and ratios below 1.00 suggesting that the family was below the poverty line. The Income to Needs Ratio score was used to develop the Socioeconomic Status variable. This control variable was selected based on research suggesting that students of lower socioeconomic status experience more victimization than peers of higher socioeconomic status.

Puberty. Pubertal history was measured both by mother report and physical exam. For the purposes of the current research, the Puberty variable was measured by the *Clinical Assessment of Child Health and Physical Development*, that took place in the sixth grade. During the physical exam, a nurse was asked to provide direct observational data about physical growth and development. To determine pubertal development, the Tanner Staging for girls and boys (Sexual Maturity Rating) was utilized. Marshall and Tanner (1969, 1970) developed a classification system to track pubertal development based on the development of secondary sex characteristics of adolescents. The Tanner Scale measures development of female breast development and male genitalia, and pubic hair growth for both sexes (Emmanuel & Bokor, 2019). There are five possible stages for the development of secondary sex characteristics on the Tanner Scale, with Stage 1 indicating that the youth is pre-pubescent, and Stage 5 indicating that full physical

maturation has been achieved (Emmanuel & Bokor, 2019). As a part of the physical exam, nurses indicated what stage of development the male or female study participant was in, based upon Tanner criteria. If a child was observed to be between Tanner stages, they were rated as the lower stage. For the purposes of this study, male and female sixth grade participants rated to be in Tanner Stage 2 or higher for breast or genital development were considered to have entered puberty. Scores ranged from 1 to 5 for female participants, and 1 to 4 for male participants. Puberty was selected as a control variable given the association between pubertal development and victimization.

Procedure

Data from the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development were utilized to answer the research questions. A database of victimized youth was developed based on responses for rating scales from the third phase of the study taking place from 2000 to 2004. Analysis was based on a derived, dichotomous variable (Victimization), for which parent and teacher ratings of victimization in the third, fourth, fifth, and sixth grades were averaged, for each year. Sample selection differed for each research question based on the question and grade of interest. Inclusion was based upon a student having a score for the Victimization variable, a variable derived from the average scores of two raters on 14 items. Possible scores range from zero to two with a zero indicating no victimization, and higher scores indicating more frequent victimization. For a given grade, both of the individual parent and teacher ratings had to be greater than zero for a student to be considered a victim in that grade. Students were assigned a status (yes victimized; or no,

not victimized) for each school year. The samples were analyzed to determine the stability of victim status across grades beginning in the third grade, to compare the level of victimization at fifth and sixth grade, and to examine the predictability of victimization in sixth grade based on sixth grade school factors. The first question explored the stability of victim role for third grade victims as they transitioned to the fourth, fifth, and sixth grade. Question two examined the level of Victimization for all fifth and sixth graders, in order to compare the difference in level of victimization in the transition to sixth grade. Finally, question three explored the level of Victimization for all students in the sixth grade in order to identify predictors of student victimization. Questions were asked within the research lens of understanding the trajectory of the role of victimization across upper elementary grades, and during the transition to middle school. Data were analyzed using the Statistical Package for the Social Sciences (IBM SPSS Statistics, 2019).

Research Questions

Question one: For participants who were identified as victims in grade three, to what extent is the role of victim stable from grades three to six?

Hypothesis: Based on research about the stability of victim status, it was hypothesized that the role of victim would not be stable across third, fourth, fifth, and sixth grade (Ryoo et al., 2015).

Statistical Method: A generalized linear mixed model was utilized to explore change or stability of youth victim role over time, for students identified as victims in the third grade. For this model, the analysis examined change within the individual across

time points, or grades, using third grade as a point of comparison. Thus, this question explored within-person change in relation to Victimization over time. This analysis allowed for examination of role stability across individuals, over time.

For question one, Victimization was analyzed across individuals at level two, and over time at level one, where repeated measures are nested within the individual (Heck, Thomas, & Tabata, 2012). Multilevel modeling accounts for the hierarchical relationship of repeated measures data for an individual, or data for observations within groups, while allowing for the analysis of variability that exists among groups and levels (Heck et al., 2012). Generalized linear mixed models support the analysis of repeated measures or hierarchical data with a dichotomous outcome, which impacts the normal distribution of the data of interest (Heck et al., 2012). Mixed models also support the analysis of observations that may vary across individuals (Heck et al., 2012). In the current research, the outcome is dichotomous, as students are categorized as victimized/not victimized; or victim/non-victim. In addition, the distribution of data was not observed to be normal suggesting the need for a model to account for the lack of normality. It is also important that the data be considered within the hierarchy of different observations of students across grades, and the variation that may occur for individuals across time.

Question two: When exploring the sample as a whole, is there a significant difference between overall levels of Victimization for participants in the sixth grade versus the fifth grade?

Hypothesis: Extant research suggests that developmental changes and changes in setting from fifth to sixth grade appear to lead to increased overt victimization in sixth

grade. Thus, it was hypothesized that there would be more reported victimization for study children in the sixth grade, as opposed to the fifth grade.

Statistical Method: For this question, McNemar's test was used. McNemar's test is similar to a paired-samples t-test in that it supports analysis of differences among related groups; however, it allows for the analysis of a matched-pair, repeated measure on a dichotomous variable (Laerd, 2015). For the second question, fifth and sixth grade students who were assigned Victimization status were analyzed from one year to the next. McNemar's test allowed for examination of differences in status for the same individuals from one year to the next. It also supported comparison of victim status at the fifth grade and sixth grade levels to determine if there was a significant difference in the proportion of victimization from grade five to grade six.

Question three: To what extent are school-based factors in the sixth grade predictive of victim status in the sixth grade?

Hypothesis: After controlling for Socioeconomic Status, Puberty, and Social Support, it was hypothesized that school-based factors including Teacher Disciplinary Self-Efficacy, Teacher Self-Efficacy for Positive Climate, Student-Teacher Relationship, Negative Attitude Towards School, and Negative Attachment would contribute significantly to the prediction of student Victimization. Research has suggested that school climate and student teacher relationships can have a protective effect on Victimization. Thus, it was hypothesized that negative views of school climate and positive relationships with teachers would be predictive of student victim status. Additionally, research suggests that teacher-self efficacy for implementation of

prevention strategies has an impact on victimization, thus it was hypothesized that Teacher Self-Efficacy for Creating a Positive Climate and Teacher Disciplinary Self-Efficacy would also be predictive of student victim status. It was hypothesized that these school-based factors would predict Victimization beyond that of the control variables.

Statistical Method: The dependent variable for this question was Victimization status based on parent and teacher rating of overt physical and verbal victimization. There are many school-based factors that are correlated with levels of bullying victimization and perpetration in schools. More specific information about school-based factors at the sixth-grade level could lead to a better understanding about the peak in victimization at the sixth grade. School-based variables that were examined in the current study include Teacher Disciplinary Self-Efficacy, Teacher Self-Efficacy for Positive Climate, Negative Attitude Towards School (climate), School Attachment (climate), and Student-Teacher Relationship.

Binary logistic regression was utilized to examine the predictive quality of school-based factors on Victimization in the sixth grade. After controlling for Socioeconomic Status, Social Support, and Puberty; binary logistic regression was used to determine if Teacher Disciplinary Self-Efficacy, Self-Efficacy for Positive Climate, Negative Attitude Towards School, School Attachment, and Student-Teacher Relationships predict student levels of Victimization in the sixth grade. This supported the understanding of the effect that school-based variables have on Victimization after controlling for variables that the research suggest are associated with bullying victimization.

The control variables and predictor variables were grouped into two separate steps allowing the data analysis to determine the amount of variance that is associated with the control variables; and the amount of variance that each predictor accounted for beyond that of the control variables. The control variable subset was entered into the equation first, allowing for an analysis of the relationship between school-based factors and Victimization when holding Socioeconomic Status, Puberty, and perceived Social Support constant. The 'Block-Wise' method of sequential variable entry allowed for analysis of the predictive quality of independent variables on Victimization beyond that of the control variables. The 'Block-Wise' method means that variables are sequentially entered in different steps or blocks based on theoretical decision-making or psychometric properties (Statistics Solutions, 2020). For the current research, all control variables were entered into the equation, first. Then all control and independent variables were entered into the equation together. This allowed for an understanding of which variables accounted for more variance within the outcome, beyond the control variables.

Data Analysis

Data for the current research were analyzed using the Statistical Package for the Social Sciences (IBM SPSS Statistics, 2019). In order to answer the research questions, generalized linear mixed modeling, McNemar's test, and binary logistic regression were selected for analysis. Generalized linear mixed modeling allows for the prediction of individual changes over time, with consideration of repeated measures nested within individuals. Generalized linear mixed models also allow for the use of non-normal and non-continuous dependent variables. McNemar's test allows for the comparison of a

paired group on a repeated, dichotomous measure. Binary logistic regression allows for exploration of the predictive power of nominal and/or continuous variables on a dichotomous outcome. These methods were selected to provide information about the trajectory and experience of bullying victimization in the transition from elementary to middle school.

Generalized Linear Mixed Model

For the first research question, a generalized linear mixed model was selected for the prediction of role status over time. Generalized linear mixed models go beyond that of generalized linear models by incorporating both fixed and random effects with the linear predictor (McCulloch & Neuhaus, 2005). Specifically, generalized linear mixed models allow for the analysis of repeated measures of hierarchical data with a dichotomous outcome when the data are not normally distributed (Heck et al., 2012). This type of model allowed for the examination of Victimization across grade level for individual study youth.

For the current analysis, a generalized linear mixed model was selected given that the observations of Victimization were observed over time, within the individual study youth. For level one, time observations (grade levels) were nested within individuals, while level two examined between-individual variation. The analysis for question one examines within person change over time (or grade). Initially, a null model was used to examine the proportion of the dichotomous outcome (Victimization), across level two units (individuals). Time was then added as a predictor to create a model for the examination of Victimization over time, using third grade as a point of reference.

McNemar's Test

McNemar's test is a variation of a paired-samples t-test that allows for the comparison of two groups. Specifically, McNemar's test provides a statistical analysis of the difference in proportion of two groups measured on a dichotomous outcome, when the two groups are matched pairs (Laerd, 2015). McNemar's test lends itself to the comparison of two matched groups when the possible outcomes measured are mutually exclusive (Laerd, 2015).

For the second research question, McNemar's test was an appropriate measure of the differences in the proportion of Victimization between different years of interest. For each grade level, a student was assigned a Victimization status: 'yes' they were considered victims for that year, or 'no' they were not. This was based upon triangulation of parent and teacher rating scale data. Both raters had to be in agreement that overt physical or social victimization occurred in the year of interest for study youth to be considered a victim. This allowed for the direct comparison of student status from one grade level to the next, with information about changes in status for the group as a whole. Study youth had to have a Victimization score or assignment for each grade of interest to be included in the comparative analysis for one year compared to another. This analysis assisted in the exploration of status in the transition from one grade to the next, for fifth to sixth graders. McNemar's test was also utilized to provide information about the proportion of victimization for each grade in question one.

Binary Logistic Regression

To answer the third research question, binary logistic regression was utilized. Regression analysis allows for the modeling of the relationships between variables, and the prediction of one value using the value of another (Cohen & Holliday, 1996). Binary logistic regression is a variation of linear regression, which is an analysis tool used for prediction of a continuous outcome, based on the value of a continuous independent variable (Cohen, Manion, & Morrison, 2015). Binary logistical regression allows for the prediction of a dichotomous outcome, in this case victim or non-victim (Laerd, 2017). Logistic regression also differs from linear regression in terms of how it predicts outcomes. Binary logistic regression does not predict the value of an outcome given that this analysis does not require continuous variables. Rather, this method predicts the probability that an observation is categorized within one of the dichotomous outcome options (Laerd, 2017). Further, it accounts for the combination of different independent variables, and the amount of variance associated with the combination, to assist with identifying the strongest model of prediction (Laerd, 2017).

For research question three, the control variables were first entered into the binary logistic regression model with Victimization at grade six (serving as the dependent variable) as a control model for the prediction of Victimization status at that grade level. Control variables included Puberty, Social Support, and Socioeconomic Status. Then, a full model was run with all control and independent variables of interest in the same step, using the 'Enter' method. These variables included Teacher Disciplinary Self-Efficacy, Teacher Self-Efficacy for Positive Climate, Student-Teacher Positive Relationship,

School Attachment and Negative Attitude Towards School. After reviewing the significance of the included variables, variables were gradually removed to determine the best combination of predictors.

In the following chapter, results of the data analysis are provided in table and written form. Additional information about exploratory analyses, methodology selection, assumption criteria, and model development are further explained. In addition, the procedures and results of analysis are provided, with further interpretation following in Chapter IV, Discussion.

CHAPTER III

RESULTS

Overview

This chapter provides the procedures and results for the analyses completed for the research questions of interest. What follows is a description of each research question, hypothesized outcomes, justification for the analyses used, description of assumptions, explanation of procedures, as well as results from analyses. A comprehensive review of this study's findings is presented in this chapter. Interpretation of results as they connect with existing literature is presented in the Discussion chapter.

Victimization Variable

Victimization was determined for each participant based on parent and teacher rating on seven items (14 items total). The seven parent and teacher items were from the following scales: *My Child's Behavior with Other Children* and *Interactions with Other Children*. The seven items were the same for parent and teacher raters, and were administered in third, fourth, fifth, and sixth grades in the second phase of the SECCYD study.

For the purposes of the current research, the Victimization variable for a subject for any given year was developed as follows. Parent and teacher ratings on the seven selected items were averaged separately. A status decision was made if the average score for the rater was zero, or greater than zero. If the score for a rater was zero, the youth was determined to be a non-victim based on that observer's rating. If the score for a rater was greater than zero, the youth was determined to be a victim based on that observer's

rating. For a given grade, students for whom both raters indicated victim status were classified as victims. Youth for whom only one rater indicated victimization, or neither rater indicated victimization were classified as non-victims. Ratings must have been given for both raters for a student to be classified as victim or non-victim for a given school year. For a youth to be included in analysis for the research questions, they must have had a Victimization score for the grades being explored in the question.

A total of 1,061 youth were included in the third phase of the NICHD SECCYD. Of these youth, 933 third grade youth were assigned a Victimization status, 198 as victims, and 735 as non-victims. There were 876 youth classified in the fourth grade, 145 as victims and 731 as non-victims. In grade five, 890 students were classified, 164 as victims and 726 as non-victims. There were 833 students in grade six who were classified under Victimization status, 160 as victims and 673 as non-victims.

A total of 606 youth were classified as victims or non-victims for all four years of Phase III. Of the subjects who were classified each year, in third grade there were 124 victims and 482 non-victims. In grade four there were 97 victims and 509 non-victims. For the subjects in grade five there were 102 victims and 204 non-victims. Finally, for the students who were classified all four years, in six grade there were 107 victims and 499 non-victims.

Missing Data

The current research examined parent and teacher responses to seven Likert rating scale items; 14 items when considering both respondents. The seven questions reflected characteristics of youth victimization and were identical for both sets of respondents.

These questions asked the respondents to reflect on the frequency with which the following occurred for the study youth: is ridiculed by peers, is picked on by other children, is called names by peers, is pushed around by other children, peers say negative things about him/her to other children, is teased or made fun of by peers, and is hit or kicked by other children. For the current research analysis, missing data were identified on a subject basis, separately for parent and teacher ratings on these items. Victimization served as the dependent variable for each research question, and missing data were removed at the subject level if too many teacher and/or parent ratings were missing for any grade.

Data exploration occurred to determine if certain rating scale items had missing responses, or if certain cases were missing many data points; and if missing data were missing at random, missing completely at random, or nonignorable missing (Heck et., 2012). Descriptive statistics, specifically frequencies, were run for parent and teacher ratings of each question, at each grade level of interest. Descriptive statistics provided reasons why a rating was missing, including: "Don't know," "Question not asked or not answered," or "Refusal." Visual inspection of the frequencies of missing data for items suggested that the percentage of missing data for each question, for each rater, at each grade was below 5%. This did not warrant further exploration of missing data for specific questions. Next, the randomness of missing data was analyzed. Case frequencies suggested that there were 11 cases across all four years of interest (one in grade three, two in grade four, two in grade five, and six in grade six) missing all seven items. Cases missing all items for one rater were for teachers only; no cases were

missing all items from a parent rater. Item responses for each case were merged across grade level, and an analysis for missing data was conducted using Little's MCAR. This test uses expectation maximization to test the hypothesis that the values are missing completely at random (Little, 1988). Results of Little's MCAR test suggested that the null hypothesis must be rejected, as the data were not missing completely at random (p = .000). In conducting descriptive statistics on missing Victimization data, there were only 11 instances in which the study youth was missing all seven items from the teacher respondent, across all four years. No participants were missing all parent Victimization items. missing all data points for teacher across all four years. The majority of missing Victimization data was for one respondent for one item. Listwise deletion of cases was selected as a strategy for handling missing data given the higher power of the current study. For each year of interest, there were more responses from parent raters than there were for teacher raters; meaning that five to 16% of cases in each grade was missing bullying victimization ratings from a teacher. In general, there was more participation for parents in each year of the study, than teachers; however, case selection was based upon having ratings for both parent and teachers at the grade of interest. Thus, cases missing seven response items from a rater for the year(s) of interest were eliminated; also excluding those cases from analysis for the question of interest based on not having ratings from both parents and teachers for that year. Given the higher power of the current study, and the longitudinal nature of two of the three research questions, the researcher did not select a method for estimating or replacing missing values; and deleted cases listwise.

As a first step, the number of missing responses for the seven items of interest was determined for the parent and teacher separately. If the number of missing items was less than seven, the mean score was calculated for that rater. If the number of missing items for either rater was seven, that subject was filtered out for that particular grade level or time point. Cases were selected if the number of missing items from the parent was less than seven, and the number of missing items from the teacher was less than seven. The current analysis included participants who were believed to have data missing at random. For included participants, the mean score of seven items was calculated for the parent and teacher rating separately. The Victimization variable score for a given year was determined based on the parent mean score and teacher mean score both being greater than zero. For each research question the population varied based on the grade or grades of interest, the purpose of the research question, and the number of subjects with missing data for a given grade.

When comparisons were made across grade levels for questions one and two, analyses required that a subject had a Victimization score for each grade of interest. Thus, a student could not be included if they had missing Victimization data for any of the grade levels being studied in a particular research question. For the generalized linear model developed for question one, students with missing Victimization scores for any of the four grades of interest were excluded from the analysis. For the third question, all cases were included.

Research Question One

Question one: For participants who were identified as victims in grade three, to what extent is the role of victim stable from grades three to six? Based on research about the stability of victim status, it was hypothesized that the role of victim would not be stable across third, fourth, fifth, and sixth grade (Ryoo et al., 2015); that those students identified as victims in the third grade would not be identified as victims in the sixth grade; and that their role as victim was likely to change year to year.

Analysis

For the purpose of exploratory analysis, crosstabulation analyses were completed using McNemar's Test. McNemar's test is similar to a paired-samples t-test allowing for analysis of a repeated measure on a dichotomous outcome variable (McNemar, 1947). Crosstabulation analyses were completed in order to compare the change in proportion of victims as students transitioned from grade to grade; and the change in proportion of victimization when looking specifically at grades three and six.

For primary analysis, a generalized linear mixed model was performed to determine the stability of students' role as victim from grade three to grade six, using grade three as a reference point. This analysis explored the victim status of students in grades three, four, five, and six; and allowed for the binary nature of the dependent variable (victim or non-victim). Multilevel modeling accounts for the hierarchical relationship of repeated measures data for an individual, or data for observations within groups while accounting for the variability that exists among groups and levels (Heck et al., 2012). Generalized linear mixed models support the analysis of repeated measures or

hierarchical data with a dichotomous outcome, which impacts the distribution of the data of interest (Heck et al., 2012). Mixed methods allow for the inclusion of fixed effects and random effects for exploration of role stability over time using grade three as a point of comparison.

Assumptions. Statistical assumptions of McNemar's test include a dichotomous dependent variable, mutual exclusivity among the dependent variable groups, and a random sample (McNemar, 1947). Victimization, the dependent variable of interest, was a dichotomous variable in this study. Participants were identified as a victim or non-victim based on parent and teacher survey item responses. The dependent variable was also mutually exclusive, as all participants were categorized as either victim or non-victim at both grade levels. In addition, the sample for which the analysis was completed was collected randomly as a part of the Study of Early Child Care and Youth Development. Participants were selected after birth at 10 hospitals across the United States using a conditional random sampling procedure. McNemar's test allows for comparison of repeated measures using a dichotomous dependent variable. All assumptions were assessed and determined to be met.

A generalized linear mixed model was selected as it allows for the linear modeling of relationships between independent and dependent variables, even though the assumptions of a linear mixed model are not met (Heck et al., 2012). Generalized linear mixed models are multilevel models, which account for multiple observations analyzed in relation to their hierarchical relationships (Heck et al., 2012). The generalized linear mixed model is an extension of a linear model that allows for linear relationships among

variables, correlation between observations, use of dichotomous variables, and data that are not normally distributed (Heck et al., 2012). The generalized linear model is the model of choice when predicting the probability of a categorical outcome, and when observations are longitudinal and nested within the individual (Heck et al., 2012). Assumptions including non-normal distribution of data, a categorical outcome, and hierarchical grouping of data have been met.

Exploratory analyses. A total of 1,061 youth were included in the third phase of the NICHD SECCYD. For the third phase of the study, youth outcomes were measured in grades two, three, four, five, and six. Bullying and bullying victimization data were not collected for students in the second grade, so the current research focused on grades three through six. The process of creating the Victimization variable for the current study is described in depth in the methodology chapter. The Victimization variable represents a triangulation of parent and teacher ratings to determine student victim or non-victim status for a given grade. Descriptive statistics for the Victimization variable for each grade are provided in Table 8.

Table 8
Descriptive Statistics for Victimization

Grade	*n*	*Prop.*	*SD*	*Min.*	*Max.*	*Skew.*	*Kurt.*
Third	933	.2122	.4091	.00	1.00	1.410	-.012
Fourth	876	.1655	.3719	.00	1.00	1.803	1.254
Fifth	890	.1843	.3879	.00	1.00	1.631	.633
Sixth	833	.1921	.3942	.00	1.00	1.566	.454

Note. Victimization statistics for the indicated grade are provided for subjects with parent and teacher ratings for that grade level.

Overall for youth in grade three, 933 were assigned a Victimization classification, 198 youth as victims and 735 as non-victims. There were 876 youth classified in the

fourth grade, 145 as victims and 731 as non-victims. In grade five, 890 students were classified, 164 as victims and 726 as non-victims. There were 833 students in grade six who were assigned Victimization classifications, 160 as victims and 673 as non-victims.

The results of the McNemar Tests for the proportion of Victimization across grade transitions are summarized in Table 9. It is important to note that percentages presented in the crosstabulation results differ from proportions presented as part of descriptive statistics. This is because the number of participants changed for each crosstabulation analysis based on the number of subjects assigned a classification for both time points (i.e., grades three and six). A crosstabulation was conducted using McNemar's test for transitions between grades, and to compare the proportion of victims in grades three and grade six for those with classifications in both grades. Crosstabulation in IMB SPSS (2019), is a technique that allows the researcher to analyze the "relationship between two categorical variables" (IBM Knowledge Center, 2019a). Exploratory analysis results suggested a significant difference in the proportion of students classified as victims in grade three versus grade four, but non-significant differences in the proportion of victimization for any other grade comparison.

A McNemar's test determined that there was a statistically significant difference in the proportion of victims identified in the third grade versus the fourth grade. There were 796 subjects with Victimization classifications scores for grades three and four. In grade three, 168 of 796 subjects (21.1%) were classified as a victim based on parent and teacher rating; whereas in grade four, 133 (16.7%) were classified as a victim. The proportion of victims decreased from 21.1% in grade three to 16.7% in grade four, a

statistically significant difference, $p = .009$. The proportion of victims for the fourth to fifth grade transition and fifth to sixth grade transition were not significant ($p > .05$). In addition to these transitional comparisons, a crosstabulation was used to compare the proportion of victims in third grade versus sixth grade, for students with victim classification for both years. The change in proportion of victimization between third (21.3%) and sixth grade (18.4%) was not significantly different.

Question one asks about the stability of role from grade three to grade six, particularly for those identified as victims in grade three. When considering the sixth-grade victim status of those identified as victims in grade three, 42% of the youth identified as a victim in grade three maintained their victim status in grade six. Crosstabulation analysis suggests that of the 157 students who were classified as a victim in third grade, 66 (42%) remained at a victim in grade six while 91 (58%) youth changed to non-victim status. The longitudinal role of time on victimization status was then analyzed using a generalized linear mixed model.

Table 9
Proportion of Victimization for Grade Level Changes

		Victims in Y1		Remained Victims Y2		Change to NonVictim Y2		
Grade	N	n	%	n	%	n	%	*p*
Time 1	796	168	21.1	65	38.7	103	61.3	.009**
Time 2	775	123	15.9	61	49.6	62	50.4	.235
Time 3	750	132	17.6	68	51.5	64	48.5	.549
Time 4	738	157	21.2	66	42	91	58	.115

Note. McNemar's test used for this analysis. Time 1 = Grade 3 to Grade 4; Time 2 = Grade 4 to Grade 5; Time 3 = Grade 5 to Grade 6; Time 4 = Grade 3 to Grade 6; Y1 = first year in comparison; Y2 = second year in comparison

Procedure for primary analysis. A total of 606 youth were classified as victims or non-victims at all four grade time points. Of the 606 subjects who were classified each year, 124 were victims and 482 were non-victims in grade three. In grade four there were 97 victims and 509 non-victims. For the subjects in grade five there were 102 victims and 204 non-victims. Finally, for the students who were classified all four years, 107 subjects were victims and 499 were non-victims in grade six. Table 10 provides frequency data for the subjects who were classified as victim or non-victim in grades three through six.

Table 10
Overall Victimization Status for Subjects Classified Each Year (N = 606)

Status	Grade 3		Grade 4		Grade 5		Grade 6	
	n	%	N	%	n	%	n	%
Victim	124	20.5	97	16.0	102	16.8	107	17.7
Non-Victim	482	79.5	509	84.0	504	83.2	499	82.3
Total	606	100.0	606	100.0	606	100.0	606	100.0

A generalized linear mixed model was used to analyze the predictive capacity of a longitudinal model that used grade level to predict Victimization. For the current study, Victimization was analyzed across individuals at level two, and over time at level one, where repeated measures were nested within the individual (Heck et al., 2012). For the current research question, two models were run; a null, unconditional model without predictors, and a multilevel model with a random effect. For level one, time observations (grade levels) were nested within individuals, while level two examined between-individual variation. Victimization was analyzed for students who were classified as victim or non-victim for each year from third to sixth grade. Victim status was

determined by a researcher-based decision criterion using a method of triangulation of parent and teacher victimization ratings.

Null model for victimization. The analysis for question one examined within person change over time. Thus, question one sought to examine the individual level change in Victimization across grade levels. Initially, an unconditional model without predictors was used to examine the proportion of variability in the dichotomous outcome (Victimization), across level two units, or individuals. The null model estimated two parameters including the variance for individuals, and the Level 2 intercept variance. The null model estimated one fixed effect and one random effect; time the individual probability of victimization and the individual probability of victimization at each time period, respectively. The z-test results for the unconditional model indicated that there was significant variation in the intercept variance between level two units, or individuals ($z = 10.053$, $p < .001$). These results supported the development of a multilevel model, given the significant variability across individual subjects (Heck et al., 2012).

Random intercepts model with time predictor. Time (grade) was added as a fixed predictor to create a multilevel model for the examination of the proportion of victimization in grades four, five, and six compared to the first year of measurement, grade three. For the multilevel model, grade was selected as the fixed effect; the random intercept for subjects allowed for subject-level variation of victimization levels. The proportion of victimization in each grade compared to grade three, model fit, and predictive capacity of the model were then assessed. An individual, person-specific random intercept was significant; however, the overall model was nonsignificant. The

intercept was a baseline for victimization for the study youth. The baseline was the probability of victimization in grade three. The model's fixed coefficients compared the proportion of Victimization for each grade level in comparison to grade three. Results of the model suggested that there was a significant decrease in the overall proportion of victimization in fourth grade when compared to the proportion of victimization in grade three (OR = .705, p = .007). The odds ratio of .705 suggests that for the study population, a one unit increase in grade level corresponded with .705 reduction in odds. Further, the odds were about 29.5% lower of being a victim in the fourth grade than being a victim in the third grade. The proportions of victimization were not significant (p > .05) for grades five and six in comparison to grade three.

The overall proportion of victimization decreased for each grade level in comparison to grade three, but the decrease was only significant when comparing the proportion in third and fourth grade. Based on estimated means for each grade level; the model estimated about 18.9% victimization overall in grade three; 14.1% victimization in grade four; 16.1% victimization in grade five; and about 16.7% victimization in grade six. For comparison, descriptive statistics for subjects classified as victim or non-victim for each of the four years indicated 20.5% victimization in grade three, 16% victimization in grade four, 16.8% victimization in grade five, and 17.7% victimization in grade six.

When considering the predictive capacity of the model as a whole, results of the generalized linear mixed model with grade as a fixed effect suggested that there was no significant association between grade and Victimization for the population of interest, $F(3, 3528) = 2.449$, p = .062. The current model classified 85.6% of all cases, 24.9% of

victim status cases, and 99.7% of non-victim status cases. A total of 166 'true' victim cases (identified as both parent and teacher as victim) were identified as having victim status in the current model; whereas, 501 'true' victim cases (75.1% of true victims) were incorrectly classified as a non-victim in the current model.

Based on the current analyses, the longitudinal relationship between grade level or time and Victimization as determined by parent and teacher observation, was not significant. There was a significant decrease in victimization in the transition from grade three to grade four. However, the change in proportion of victimization in grades five and six as compared to grade three were not significant. Please refer to Table 11 for results of the multilevel model.

Table 11
Random Intercepts Model with Time as Predictor

Covariates	*Est.*	*SE*	*95% CI*	*OR*	*p*
Time 1	-.350	.1305	(-.606, -.094)	.705	.007**
Time 2	-.197	.1273	(-.446, .053)	.821	.122
Time 3	-.151	.1291	(-.405, .102)	.859	.241

Note. *Est*. = Estimates for Fixed Coefficients; *SE* = Standard Error; *CI* = Confidence Interval; *OR* = Odds Ratio. Time 1 = Grade 3 versus Grade 4; Time 2 = Grade 3 versus Grade 5; Time 3 = Grade 3 versus Grade 6

Classification comparison. In the analysis of the longitudinal relationship of grade and victimization using a generalized linear mixed model, a standard classification cutoff value of .50 was used. The alpha level reflects the value used to determine predicted probabilities for categorical targets. Values larger than the cutoff value are classified as positive while values below are classified as negative. Predicted probabilities in generalized linear mixed models reflect the probability that an

observation or case will be classified as positive using the model's prediction and the alpha cutoff. For the current research question, the model was predicting the probability that an observation of an individual at a given grade will be classified as a victim observation.

For research question one, a comparison threshold value of .10 was selected. This was based upon extant prevalence research from the years in which the SECCYD study took place. During the time period of 2000-2004, bullying victimization research was often focused on youth ages 12 to 18. In addition, there was limited research about the prevalence of victimization among elementary age children. A review of the literature for this period in time resulted in the identification of research articles that analyzed the prevalence of victimization in elementary students. These articles suggested a range in victimization rates for students in grades three through six, in urban and rural settings. The rates of victimization were reported to be 6% for third to fifth graders in an urban setting (Glew, Fan, Katon, Rivara, & Kemic, 2005), 14% for fifth graders in a rural setting (Pellegrini, Bartini, & Brooks, 2001), and 9% for sixth graders in a low socioeconomic urban setting (Juvonen, Graham, & Schuster, 2003). The mean prevalence rate was calculated using the prevalence rates reported in these three studies ($\mu = 9.67$). The rounded mean value (10) was used as the threshold value for comparison to the default .50 alpha value.

A crosstabulation was used to provide information about the correct classification of observations when considering a different threshold for classification. When using a threshold of .10 to reflect the prevalence of victimization for third through sixth graders

in the early 2000s, there was 53.9% correct classification. In comparison, the full model with the .50 threshold had an 85.6% correct classification rate. For the full model using the default alpha value of .50, 24.9% of 'true' victim cases were predicted to be victim observations; and 75.1% of 'true' victim cases were predicted to be non-victim observations. Conversely, 99.7% of 'true' non-victims were predicted to be non-victims. For the threshold value of .10, there were fewer false negatives, but a greater number of false positives, meaning that more 'true' victims were identified with the .10 cutoff value, but at the cost of misidentifying 'true' non-victims as victims. For the comparison classification value of .10, 100% of 'true' victim cases were predicted to be victim observations, but 56.8% of 'true' non-victim observations were predicted to be victim observations.

Research Question Two

Question two: When exploring the sample as a whole, is there a significant difference between overall levels of Victimization for participants in the sixth grade versus the fifth grade? It was hypothesized there would be a significant difference between the levels of bullying victimization reported among students in the fifth compared to those same students in the sixth grade, with more study youth being identified as a victim in the sixth grade.

Analysis

McNemar's test was used to analyze and compare the proportion of students who were identified as victims in the fifth grade and sixth grade. As noted previously, McNemar's test is used for analysis of a repeated measure on a dichotomous outcome

variable. McNemar's test was selected to determine if there was a significant change in the proportion of students identified as a victim in the fifth grade compared to those same students in the sixth grade. The fifth and sixth grade levels were chosen for comparison based on extant research suggesting an increase in victimization in the sixth grade, as students are presumed to transition to middle school (Dinkes, et al., 2009; Espelage & Horne, 2008; Hong & Espelage, 2012; Nansel et al., 2001; Pellegrini & Bartini, 2000; Smith, Madsen, & Moody, 1999).

Assumptions. As previously noted, statistical assumptions of McNemar's test include: a dichotomous dependent variable, mutual exclusivity among the dependent variable groups, and a random sample (Laerd Statistics, 2015). All assumptions were met for analysis of question two. The dependent variable of interest was dichotomous and mutually exclusive. In addition, the sample for which the analysis was completed was collected at random. McNemar's test allows for the comparison of repeated measures of a dichotomous dependent variable.

Procedure. For question two, a crosstabulation was completed using McNemar's test. The Victimization variables for fifth grade and sixth grade were entered for analysis, and the percentages of proportion change were selected for both variables. The proportions of Victimization were compared for each grade, and information about the change in proportion was analyzed. In addition, the off diagonal for the crosstabulation was analyzed to provide data about those students whose status remained stable. A total of 750 students were included in the analysis for question two. Included subjects were required to be classified as victim or non-victim in both grades.

Proportion comparison. An exact McNemar's test was used to compare the proportion of students identified as victims in fifth grade to the proportion of students identified as victims in sixth grade when considering the same sample. This analysis was completed to determine if a significant difference in the proportion of Victimization was present for these two grades. The exact McNemar's test determined that there was not a statistically significant difference in the proportion of victims identified in the fifth grade versus the same subjects in the sixth grade. A total of 750 youth from the sample were assigned a victimization status (either victims or non-victims) in both fifth and sixth grade as a result of triangulating parent and teacher rating scale scores.

Of the 750 youth measured in grade five, 132 (17.6%) were identified as victims and 618 were identified as non-victims (82.4%). In grade six, the total number of victims increased to 140 (18.7%), with a concomitant decrease in the number of non-victims to 610 (81.3%). When considering the 132 youth identified as victims in grade five, 68 youth (51.5%) maintained their victim status, while 64 (48.5%) youth changed from victim to non-victim. When considering the 618 youth identified as non-victims in grade five, 546 (88.3%) youth maintained their status as a non-victim, while 72 (11.7%) youth changed from non-victim status to victim status.

Of the 750 students overall, 132 students were identified as victims in grade five and 140 students were identified as victims in grade six. The proportion of victims increased from a value of 0.18 at time one to 0.19 at time two; however, the difference in the proportion of victimization between grades was not significant, $p = .549$. The results of the exact McNemar's test suggest that when considering students with Victimization

ratings for both grades, there was an increase in the proportion of victims from grade five to grade six; however, this increase was not statistically significant.

Research Question Three

Question three: To what extent are school-based factors in the sixth grade predictive of victim status in the sixth grade? After controlling for Socioeconomic Status, Puberty, and Social Support, it was hypothesized that school-based factors related to student perceptions of climate would predict student levels of Victimization. The school-based factors examined at sixth grade were Negative Attitude Towards School, School Attachment, Student-Teacher Relationship, Teacher Self-Efficacy for Discipline and Teacher Self-Efficacy for Positive Climate. It was hypothesized that more positive attitudes towards school, more positive ratings of school attachment, more positive teacher relationships, and higher levels of teacher self-efficacy for discipline and positive climate would predict lower levels of victimization in the sixth grade.

Analysis

For the purpose of exploratory analysis, a Mann-Whitney U-test and correlation coefficients were run to provide inferential information about the data for grade six. The Mann-Whitney U-test is similar to a t-test but allows for the violation of some assumptions required for a t-test. This test was used to determine if there were differences in control and independent variables of interest among victims and non-victims. Correlation coefficients were calculated to provide information about the associations between the independent variables, control variables, and the dependent variable. The rank biserial, Spearman rho, point-biserial, and biserial correlation

coefficients were selected based on the scales of measurements used for variables of interest.

A binary logistic regression was performed in order to determine whether or not sixth grade school-based factors of interest were predictive of victim status in grade six. Control variables entered in the model were Socioeconomic Status, Puberty, and Social Support. A binary logistic regression was selected as it allows for the prediction of membership within a dichotomous outcome category, using independent variables of interest (Laerd Statistics 2017; Lewis-Bek, Bryman, & Liao, 2004; McCullagh & Nelder, 1983). A logistic regression model was completed to explore the predictive capacity of selected school-based factors on victimization status in the sixth grade.

Assumptions. Assumptions of the Mann-Whitney U-test include a dichotomous independent variable, a continuous or ordinal dependent variable, independence of observations, and determination of shape similarity for the distribution of scores for each group on the dependent variable (variable of interest). All assumptions were satisfied. In order to determine if the distribution of data shape was similar or dissimilar for each variable of interest, visual analysis and a test of homogeneity of variance was executed for each variable. All assumptions were met for this analysis. The type of correlation coefficient run was based on the scale of measurement for each variable.

There are several assumptions that must be met in order to use a binary logistic regression for data analysis. First, a dichotomous dependent variable must be used for a binary logistic regression. Second, there must be independence of observations, meaning that measures are not repeated nor are the data matched. Third, observations must be

mutually exclusive and exhaustive, meaning that cases cannot be represented in more than one category for the all variables. Fourth, there is an assumption that the data do not have multicollinearity, meaning that the independent variables are not highly correlated. Fifth, the sample size should also be larger for a binary logistic regression, with about 15 cases or more per independent variable (Laerd Statistics, 2017). Finally, binary logistic regression requires that there is a linear relationship between continuous independent variables and log odds transformations of the dependent variable.

All assumptions were analyzed and met. The dependent variable was dichotomous, with youth being assigned to victim or non-victim status based on parent and teacher rating. The independent variables were ordinal as they are Likert scale items but were treated as nominal variables for the purpose of the regression. The dependent variable, control variables, and independent variables were mutually exclusive and exhaustive, suggesting that a subject could not be represented by more than one response. In addition, there was independence of observations, meaning that the data were not repeated or matched. Multicollinearity was measured using the variation inflation factor (VIF) for each independent variable in comparison to the others. All VIF collinearity statistics were between 1.03 and 1.59, suggesting some correlation, but not high correlation. There were more than 840 valid cases per independent variable; thus, the ratio of observations to each independent variable exceeded 15. Finally, because none of the independent variables were continuous, the linearity assumption was not tested.

Exploratory analyses. A Mann-Whitney U-test (1947) was run to analyze differences between the scores on the control and independent variable measures of

interest, as a function of victim status. The variables of interest had outliers, and data did not represent normal distributions thus violating the assumptions of an independent samples t-test. Therefore, the non-parametric Mann-Whitney U test was selected to determine if group differences were indicated for scores on variables of interest. All assumptions for the Mann-Whitney U-test were satisfied. Results were interpreted as a function of distribution shape. Thus, results are presented as differences between victim and non-victim median scores if distribution shapes are similar, or differences in the median distribution of scores if distribution shapes are not similar. Please refer to Table 12 for the results of the Mann-Whitney U-test.

Table 12
Mean Values for Predictor and Control Variables as a Function of Victim Status

	Non-Victim				Victim						
Variable	*N*	*M*	*SD*	*MR*	*N*	*M*	*SD*	*MR*	*U*	*p*	η^2
1. Puberty	631	3.00	1.57	385.78	147	3.22	1.75	405.47	-1.53	.322	.001
2. Social Support	663	4.38	.57	436.51	157	3.93	.83	300.68	8.04	.000	.051
3. Socio-economic Status	653	4.75	3.99	424.18	153	3.31	2.68	315.24	4.23	.000	.034
4. Teacher Self-Efficacy (Discipline)	661	21.70	3.29	410.62	158	21.54	3.69	407.40	.50	.877	0
5. Teacher Self-Efficacy (Climate)	666	41.96	6.41	412.28	159	42.14	5.86	416.03	-.34	.858	0
6. Student-Teacher Relationship	673	62.41	8.62	445.96	160	56.48	10.12	295.18	7.55	.000	.061
7. School Attachment	663	3.50	.48	430.44	160	3.25	.61	326.29	5.59	.000	.03
8. Negative Attitude	663	1.78	.57	394.65	157	1.99	.61	477.43	-3.80	.000	.019

Note. Mann-Whitney U-test used for this analysis. *MR* = Mean Rank, *U* = Mann-Whitney U statistic, η^2 = effect size.

Based on visual analysis and results of the Mann-Whitney U-test, the distribution of scores for victims and non-victims on Puberty, Teacher Self-Efficacy for Positive Climate, and Negative Attitude Towards School were similar. The distribution of scores for victims and non-victims was not similar for Social Support, Socioeconomic Status, Teacher Disciplinary Self-Efficacy, Student-Teacher Relationship, and School Attachment. Results of the Independent Samples Mann-Whitney U-test suggest that that difference in Social Support scores were statistically significant among non-victims (*Mdn* = 4.50) and victims (*Mdn* = 4.10), *U* = 34,803, *z* = -6.479, *p* < .001. Results also indicate that there were statistically significant differences among Socioeconomic Status scores between non-victims (mean rank = 424.18) and victims (mean rank = 315.24), *U* = 36,450, *z* = -5.211, *p* < .001). The difference in Student-Teacher Relationship scores for non-victims (mean rank = 445.96) and victims (mean rank = 295.18) were also statistically significant, *U* = 34,348 , *z* = -7.130, *p* < .001) A statistically significant difference existed for School Attachment scores among non-victims (mean rank = 430.44), and victims (mean rank = 326.29), *U* = 38,824.500, *z* = -5.018, *p* < .001. Finally, there was a statistically significant difference between non-victims (*Mdn* = 1.67) and victims (*Mdn* = 2.0) on Negative Attitude Towards School, *U* = 62,553, *z* = 3.954, *p* < .001. There were not statistically significant differences between victims and non-victims for Puberty (*p* = .322), Teacher Disciplinary Self-Efficacy (*p* = .877), and Teacher Self-Efficacy for Positive Climate (*p* = .858).

Correlation coefficients were run to explore intercorrelations between the dependent, control, and independent variables. The Pearson correlation coefficient (*r*) is

a statistic that explains the strength of the relationship between two variables, and whether the relationship is positive or negative (Hinkle, Wiersma, & Jurs, 2003). Correlation coefficients used to explain the strength and direction of a relationship between variables are selected based upon how the data were measured for the variables of interest. Rank biserial, Spearman rho, point-biserial, and biserial correlation coefficients were selected for the current research question to assess the relationships between variables. These coefficients allow for the comparison between nominal and ordinal variables (rank biserial, r_{rb}); ordinal variables (Spearman rho, ρ); nominal and interval variables (point-biserial, r_{pb}); and dichotomous and continuous variables when the dichotomous variable is 'artificially' dichotomized (biserial, r_b). Hinkle and colleagues (2003) suggest that correlation values of .00 to.30 suggest little if any correlation; .30 to .50 low correlation; .50 to .70 moderate correlation; .70 to .90 high correlation; and .90 to 1.00 very high correlation (p.109). Negative or positive correlation values suggest whether the relationship is positive (as one variable increases, so does the other) or negative (as one variable increases, the other decreases).

What follows is a discussion of the correlation coefficients for the variables used in this research question. Table 13 presents correlation coefficients for control variables and independent variables examined as part of this research question. Correlation analyses for control variables resulted in a significant, negative correlation between student perception of Social Support and Victimization in sixth grade ($r_{rb}(N = 820) = -.271$, $p < .001$); and a significant, negative correlation between Socioeconomic Status and Victimization ($r_{rb}(N = 806) = -.147$, $p < .001$). The correlation between Puberty and

Victimization was not significant (r_{rb}(N = 778) = .127, p = .055). These correlations suggest that increases in perceived social support and socioeconomic status, were correlated with decreases in victimization in sixth grade.

Table 13
Intercorrelations for Victimization, Control Variables, and Predictor Variables

Variable	1	2	3	4	5	6	7	8	9
1. Victimization	1.0								
2. Puberty	.06	1.0							
3. Social Support	-.27**	-.12**	1.0						
4. Socioeconomic Status	-15**	-.12**	.10**	1.0					
5. Teacher Self-Efficacy (Discipline)	-.02	-.04	-.001	.12**	1.0				
6. Teacher Self-Efficacy (Climate)	.01	-.06	-.02	.07*	.60**	1.0			
7. Student-Teacher Relationship	-.25**	-.07*	.14**	.10**	.22**	.22	1.0		
8. School Attachment	-.19**	-.06	.49**	.17**	.10**	.08*	.24**	1.0	
9. Negative Attitude	.14**	-.04	-.23**	-.22**	-.06	-.02	-.17**	-.31**	1.0

Note. *p < .05. **p < 0.01. Correlation coefficients used for this analysis include rank biserial (r_{rb}); Spearman rho (ρ); point biserial (r_{pb}); and biserial (r_b). 1 = Victimization in Grade 6; 2 = Puberty; 3 = Peer Social Support; 4 = Income to Needs Ratio; 5 = Teacher Disciplinary Self-Efficacy; 6 = Teacher Self-Efficacy to Create a Positive School Climate; 7 = Teacher Positive Relationship with Student; 8 = School Attachment; 9 = Negative Attitude Towards School.

When considering the independent variables of interest, correlation analyses resulted in a significant, negative correlation between teacher perceived Student-Teacher Relationship and Victimization (r_{rb}(N = 833) = -.253, p < .001); and student School Attachment and Victimization (r_{rb}(N = 820) = -.192, p < .001). Correlation analyses resulted in a significant, positive correlation between Victimization in sixth grade and

student Negative Attitude Towards School (r_{rb}(N = 820) = .137, p < .001). The relationships between Victimization and Teacher Disciplinary Self-Efficacy (r_{rb}(N = 819 = -.019, p = .594), as well as Teacher Self-Efficacy for Positive Climate (r_{rb}(N = 825) = .011, p = .748) were not significant. Positive increases in Student-Teacher Relationship and School Attachment were correlated with decreases in victimization; while increases in Negative Attitude Towards School were correlated with increases in Victimization in grade six.

Procedure for primary analysis. Binary logistic regression analysis was used to explore factors that were hypothesized to predict victimization status in the sixth grade. A regression equation was developed for the dichotomous dependent variable, Victimization; while accounting for control variables associated with bullying victimization, and exploring factors believed to predict bullying victimization in sixth grade. Analysis of model fit was completed to determine the success of the equation in its predictive capacity.

The 'Block-Wise' method of variable entry was selected so that all control variables were entered into the model first, and then independent variables were added in the second step or block for the full model. For this method of variable entry, variables are entered in separate steps or blocks based on theoretical decisions or psychometric properties (Statistics Solutions, 2020). The independent variables of interest included school-based factors that are hypothesized to impact student victimization. The control variables represented factors that extant research suggests are correlated with student bullying victimization. Initially, only the control variables were entered into the equation

using a hierarchical model-building method. Control variables were entered first for the purpose of examining the predictive capacity of control variables on the dependent variable, to analyze correlation between controls and the dependent variable, and to provide a baseline of understanding for the full model. Then, all variables were entered together to analyze the predictive capacity of proposed school-based factors when controlling for research supported factors. It was hypothesized that all independent variables would have a significant impact on the prediction of victimization in the sixth grade; thus, all variables were entered in a single step.

For research question three, Victimization in grade six was the dependent variable of interest (dichotomous variable; 0 = non-victim; 1 = victim). Victimization was based on the mean of seven items for both parent and teacher raters. For the selected items (7 items per respondent, 14 items total; three-point Likert Scale), higher ratings suggested more frequent victimization. If the mean of the seven-item Likert scale was greater than 0 for the parent or teacher rating, then the student was identified as being victimized according to that rater. A mean of 0 indicated that the student was not victimized. For the student to be identified as a victim (0 = non-victim; 1 = victim) for any given grade, the ratings of both parent and teacher must have exceeded 0. Control variables included Puberty, Social Support, and Socioeconomic Status. Independent variables included Teacher Self-Efficacy for Positive Climate, Teacher Disciplinary Self-Efficacy, Student-Teacher Relationship, Negative Attitude Towards School, and School Attachment.

Classification comparison. For the current binary logistic regression, a .0628864 classification cutoff value was used for regression control variables. The

classification cutoff value determines the number used as a point of reference, for which predicted probabilities greater than that value are assigned to the group labeled as "1" and predicted probabilities less than that value are assigned to the group labeled "0." The .0628864 cutoff value was selected using a process of visual inspection of predicted probabilities and ROC Curve Analysis. The researcher ran the model with cutoff points from .01 to .10 and used visual inspection of predicted probabilities. A cutoff of .06 was selected for further analysis given that the percentage of victims incorrectly classified as nonvictims (false negative) was below a beta of .05 (Banerjee, Chitnis, Jadhav, Bhawalkar, & Chaudhury, 2009). This means that less than 5% of victims were incorrectly identified as nonvictims using this cutoff. For the current research, the reduction of false negatives was prioritized over reduction of false positives.

A Receiver Operating Characteristic, or ROC Curve, allowed analysis of model prediction accuracy by charting model sensitivity and specificity (Zweig & Campbell, 1993). When running a ROC Curve, the area under the curve (AUC) statistic is provided to assist in determining the model's ability to predict outcomes. For the ROC Curve analysis, the standard cutoff of .50 was used, and predicted probabilities at this cutoff point were saved. The AUC for this curve was .740, suggesting that there is a 74% chance that the model will able to distinguish between victims and nonvictims. Visual inspection of the coordinates of the curve was completed to explore the sensitivity and specificity at multiple cutoff points at .062. Five potential cutoff points were identified from the ROC curve (ranging from .0623936 to .0628864). Sensitivity was prioritized,

and the model was rerun with each potential cutoff point. The cutoff point of .0626526 was selected as it was under beta .05 and also minimized the number of false negatives.

The default classification cutoff value for a binary logistic regression is .50 in SPSS (IBM Corp., 2019). The cut value of .062 was selected in order to decrease the odds of identifying a 'true' victim as a non-victim; and to reflect a nationally representative percentage of victimization reported for the year that sixth grade data were collected for the database used. According to the IBM Knowledge Center (2019b), predicted values above the selected cutoff (which can range from 0.01 to 0.99) are considered positive. Selection of a lower cutoff value decreases the specificity, but improves sensitivity; thus, the model is less likely to misidentify victims as non-victims, decreasing the chance of false negatives.

The selected model (using a .062 cutoff value) correctly identified 30% of victim/non-victim status as compared to the model run with the default .50 cutoff, which correctly predicted 82.5% of victims/non-victim identification. Although fewer students were correctly identified overall, the .062 cutoff model allowed for more 'true' victim status students to be correctly identified as victims. For the model using a .062 cutoff, 95.6% of victims were correctly identified, compared to the .50 model which only correctly identified 9.4% of 'true' victim-status students correctly.

Control model for victimization. For the first model, only the control variables were entered with Victimization as the dependent variable in the binary logistic regression. Control variables included Puberty, Socioeconomic Status, and student perception of Social Support. Entering the control variables into the model first allowed

for exploration of the proportion of variance in victimization explained by the control variables. Results of this regression analysis suggested that the model was statistically significant; χ^2 (3) = 64.29, $p < .001$. Results indicated that the model including only control variables had the capacity to predict Victimization status in the sixth grade. Using this model, 13% of the variability in victimization status was accounted for by the control variables (Nagelkerke pseudo $R^2 = .13$). Pseudo R^2 results provided a goodness of fit measure for the model and information about explained variance. True R^2 measures cannot be provided for a binary regression given the dichotomous nature of the dependent variable, thus R^2 results must be interpreted with caution. The Nagelkerke R^2 (Nagelkerke, 2001) was selected for interpretation as it allowed for the explained variation statistic to range from 0 to 1. This model correctly classified 49.5% of all cases, and 76.1% of victim status cases. This was an increase from the step 0 model, or null model (no variables included), which correctly predicted 18.5% of all cases.

The Hosmer and Lemeshow Test tests the linearity assumption. The Hosmer and Lemeshow test asks how poorly the model predicts the outcome (Hosmer & Lemeshow, 1989). Thus, a statistic that is significant suggests poor model fit, while a non-significant statistic suggests that the model is not a poor fit. The Hosmer and Lemeshow Test was not significant for the control model, suggesting that the model was not a poor fit. Of the three control variables, Social Support from peers (OR = .45; $p < .001$) and Socioeconomic Status (OR = .84; $p < .001$) were predictive of victim status. Puberty was not found to be significantly predictive of Victimization status (OR = .99; $p = .92$). Please refer to Table 14 for binary regression results of the control model.

Table 14
Binary Logistic Regression Model for Control Variables

Variable	*B*	*SE*	*OR*	95% CI	Wald Statistic	*p*
1. Puberty	-.01	.06	.99	[.88, 1.12]	.01	.916
2. Social Support	-.79	.14	.45	[.34, .60]	32.07	.000
3. Socioeconomic Status	-.18	.04	.84	[.77, .91]	17.31	.000

Note. CI = confidence interval for odds ratio (OR). 1 = Puberty (control); 2 = Peer Social Support (control); 3 = Income to Needs Ratio (control)

Full model with independent variables. For the full model, the control variables and independent variables were entered into the model together using the 'Enter' method. This model was used to determine if the independent variables could predict Victimization beyond the predictive capacity of the control variables, and if that prediction was significant. The model including all control and independent variables was statistically significant; χ^2 (8) = 87.44, $p < .001$. About 18% of the variability in Victimization was accounted for by the addition of the independent variables to the model (Nagelkerke pseudo $R^2 = .18$). The full model correctly classified 58.4% of all cases and 77.2% of victim status cases. This was an increase from the null model or step 0 (no variables included), which correctly predicted 18.6% of all cases. This was also an increase from the control variable model which correctly classified 49.5% of all cases, 76.1% of victim cases, and accounted for 13% of the variance in the Victimization variable. The Hosmer and Lemeshow Test was not significant, suggesting that the full model was not a poor fit for the data.

The positive predictive value of 15% for the full model reflected the percentage of cases correctly characterized as non-victims compared to the total number of cases predicted to be non-victims. Thus, of all cases predicted to be non-victims, 15% were correctly predicted. Conversely, the negative predictive value of 95.6% represents the percentage of those cases correctly categorized as victims compared to the total number of cases predicted to be victims. Of all the cases predicted to be victims, 95.6% were correctly predicted. Refer to Table 15 for results of the full binary logistical regression.

Table 15
Full Binary Logistic Regression Model for Victimization

Variable	*B*	*SE*	*OR*	95% CI	Wald Statistic	*p*
1. Puberty	-.014	.062	.986	[.873, 1.114]	.049	.825
2. Social Support	-.753	.166	.471	[.341, .652]	20.659	.000
3. Socioeconomic Status	-.153	.043	.858	[.788, .934]	12.604	.000
4. Teacher Self-Efficacy (Discipline)	.005	.037	1.005	[.934, 1.081]	0.18	.893
5. Teacher Self-Efficacy (Climate)	.029	.020	1.029	[.989, 1.071]	2.021	.155
6. Student-Teacher Relationship	-.050	.011	.951	[.931, .972]	20.540	.000
7. School Attachment	.033	.225	1.033	[.664, 1.608]	.021	.884
8. Negative Attitude	.167	.177	1.181	[.834, 1.673]	.882	.348

Note. CI = confidence interval for odds ratio (OR). 1 = Puberty (control); 2 = Peer Social Support (control); 3 = Income to Needs Ratio (control); 4 = Teacher Disciplinary Self-Efficacy; 5 = Teacher Self-Efficacy to Create a Positive School Climate; 6 = Student-Teacher Relationship; 7 = School Attachment; 8 = Negative Attitude Towards School.

Results of the full binary logistic regression model suggested that one variable was able to significantly predict Victimization after controlling for Puberty, Peer Social

Support, and Socioeconomic Status. This variable was Student-Teacher Relationship (OR = .95; $p < .001$). The odds ratio of .95 suggests that the odds are 4.9% lower of being a victim when there is a one unit increase in positive Student-Teacher Relationship. No other school-based factors were able to significantly predict Victimization in grade six.

Gradual variable removal from model. Following review of the results for the full model, the researcher engaged in gradual removal of independent variables based on the significance of the Wald Statistic for each independent variable. Independent variables were removed from the model one by one based on the Wald Statistic, until the results of the Hosmer and Lemeshow test required that the model be rejected (statistically significant Hosmer and Lemeshow test result). 'Backward Elimination (Wald)' is the method of stepwise removal of variables from the equation sequentially based on the "probability of the Wald statistic" (IBM Knowledge Center, 2019b). The control variables and significant predictor (Student-Teacher Relationship) were retained, and the other independent variable terms were removed one at a time based on the significance of the Wald Statistic. An independent variable is statistically significant in a model if the Wald Statistic is significant. Thus, the least significant independent variable was removed first, and the other independent variables were removed until only Student-Teacher Positive Relationship remained in the model with the three control variables. The independent variables were removed in the following order: (1) Teacher Disciplinary Self-Efficacy, (2) School Attachment, (3) Negative Attitude Towards School, (4) Teacher Self-Efficacy for Positive Climate.

The model was statistically significant after removal of Teacher Disciplinary Self-Efficacy (χ^2 (7) = 90.36, $p < .001$); the Hosmer and Lemeshow Test was not significant suggesting the model was not a poor fit for the data. This model explained about 19% of the variance in Victimization (Nagelkerke pseudo R^2), and correctly classified 59.1% of cases. Next, School Attachment was removed in addition to Teacher Disciplinary Self-Efficacy. For this model, the Hosmer and Lemeshow Test was not significant. The model was statistically significant (χ^2 (6) = 90.35, $p < .001$), correctly explained about 19% of the variance (Nagelkerke pseudo R^2), and correctly classified about 59% of cases. The third variable to be removed was Negative Attitude Towards School. This model was statistically significant (χ^2 (5) = 89.49, $p < .001$), and explained about 19% of the variation in the dependent variable (Nagelkerke pseudo R^2). The Hosmer and Lemeshow Test for this model was not significant, suggesting that the model was not a poor fit. The model with control variables, Teacher Self-Efficacy for Positive Climate and Student-Teacher Relationship correctly classified about 58% of cases. Finally, Teacher Self-Efficacy for Positive Climate was removed from the model, leaving only Student-Teacher Relationship and the three control variables. This model was rejected based on a significant Hosmer and Lemeshow Test ($p < .05$), suggesting that this model was a poor fit for the data.

Given that the model for Student-Teacher Relationship was rejected, it was hypothesized that Teacher Self-Efficacy for Positive Climate either explained more variance in the dependent variable when considered in the model individually, or that it stabilized the impact of Student-Teacher Relationship when considered together in the

model. In order to further assess this hypothesis, a model was analyzed for which Teacher Self-Efficacy for Positive School Climate was entered individually with the control variables. This model also had a significant Hosmer and Lemeshow test result, suggesting that the model was a poor fit for the data. Thus, the model with only the Student-Teacher Relationship variable was not a better fit for the data than the model with only the Teacher Self-Efficacy for Positive Climate variable. Neither predictor resulted in a good fit for the data when considered individually. Results also suggest that Teacher Self-Efficacy for Positive Climate does not have a more significant relationship with Victimization than Student-Teacher Relationship when considered individually with the control variables. This supports the hypothesis that Teacher Self-Efficacy for Positive Climate stabilizes the effect of Student-Teacher Relationship on Victimization. The combination of the two variables together in the model enhanced the predictive capacity of Victimization. Further the model examining the predictive capacity of Student-Teacher Relationship by itself was a poor fit for the data, suggesting that Teacher Self-Efficacy for Positive Climate could be a mediator for the relationship between Student-Teacher Relationship and Victimization in sixth grade.

Based on analysis of each model using the Nagelkerke R^2, Hosmer and Lemeshow Test, and percent of correct classifications, the model that represented the best fit for the data was the model that included the control variables, and all independent variables with the exception of Teacher Disciplinary Self-Efficacy. This model accounted for about 19% of the variance in the change of Victimization, represented 59.1% correct classification of cases; and had a non-significant Hosmer and Lemeshow

Test result, suggesting that the model was not a poor fit. Thus, this is the model that represents the best prediction of the dependent variable. For this model, Student-Teacher Relationship was the only variable beyond Social Support and Socioeconomic Status to have a significant effect on the dependent variable (OR = .95; $p < .001$). However, the inclusion of Teacher Self-Efficacy for Positive Climate in the model with the control variables, and Student-Teacher Relationship is noted to positively impact the relationship between Student-Teacher Relationship and Victimization, suggesting potential mediation.

Taken together, the analysis for this model suggested that the non-significant variables (with the exception of Teacher Disciplinary Self-Efficacy) add to the predictive capacity of the model, and that the combination of variables supports the model's significance. Further, findings suggest that Teacher Self-Efficacy for Positive Climate has a positive impact on the ability of Student-Teacher Relationship to predict victimization.

Summary

In summary, the analyses suggested that time was not a significant predictor of student status as a victim or non-victim in grades three to six. In addition, there was not a significant difference in the proportion of youth identified as a victim in the fifth grade versus the sixth grade. Finally, beyond the impact of control variables, Student-Teacher Relationship was found to predict Victimization scores in the sixth grade. More positive relationships had a protective effect against victimization. The predictive relationship between Student-Teacher Relationship and Victimization was enhanced by the addition of Teacher Self-Efficacy for Positive Climate in the model. In the following chapter,

results will be discussed and interpreted based on existing research. Implications, future directions, and limitations will also be provided in the following chapter.

CHAPTER IV

DISCUSSION

Overview

This chapter provides an overview of the rationale for the current study. What follows is a discussion of the results for each question and general conclusions. The results are interpreted within the context of previous research. In addition, theoretical, research, and applied implications are discussed. The last sections of this chapter address limitations of the current study and future directions for victimization research.

The purpose of this study was to expand the research literature pertaining to the trajectory and experience of bullying victimization within the context of the transition to middle school. Studies have reported increased prevalence and severity of victimization as students progress toward middle school (Dinkes, Kemp, Baum, & Snyder, 2009; Espelage & Horne, 2008; Hong & Espelage, 2012; Nansel et al., 2001; Pellegrini & Bartini, 2000; Smith, Madsen, & Moody, 1999). One aspect of the current study sought to explore previous research findings in relation to the stability and trajectory of the victim role. The purpose of the current study was also to investigate school-based factors related to student climate and experience in middle school that may be associated with increased victimization upon the transition to middle school. The present study aimed to explore the association between systemic, school-based factors related to teacher self-efficacy, climate, and relationships that contribute to our understanding of the impact that school-level systems have on the victim experience in middle school.

Discussion of the Findings

What follows is a description of the purpose of each research question, and an explanation of hypothesized outcomes. This information is followed by a review of the results in relation to the hypotheses. The results are then discussed in the context of previous research.

Question One Conclusions

The first research question aimed to provide information about the trajectory of bullying victimization for elementary age youth as they transition to higher grades. This question specifically asked about the stability of role for youth identified as victims in the third grade, as they transitioned through grades three, four, and five; to grade six. It was hypothesized that the role of victim would not remain stable as youth transitioned from third-to-fourth, fourth-to-fifth, and fifth-to-sixth grade.

In order to answer these questions, parent and teacher ratings of youth behavior were reviewed and combined and averaged to determine student victim or non-victim status at each grade level. Victimization was then analyzed at each grade level to provide more information about the changes in role as students transitioned into higher grades. Analyses compared youth identified as victim or non-victim during each grade transition, and for all four years. For the first question, differences between grades were analyzed; and grade was used to predict victimization status over time.

Grade transitions. To better understand the differences in the number of students identified as bullying victims over time, student data were explored on a grade-by-grade basis. First, the percentage of students who were victims or not victims were

compared across different grade transitions. Findings revealed that the differences in victimization levels at each grade were not meaningfully different for most grade transitions, with the transition to fourth grade being the exception. Further, when considering the percentage of bullying victims from one grade to the next, the percentage of victims overall tends to be similar. However, another important factor that was considered was the makeup of the victim group. This question also analyzed the number of students whose status as a victim or non-victim remained the same or changed from one year to the next.

When comparing the percentage of youth identified as a victim for each grade level, less than 52% of students maintained their status as a victim from year-to-year. The data suggest that for most grade level comparisons, the overall percentage of students who were identified as victims did not change significantly. What tended to change was the group of students who were victimized, with about 50% change in victim group makeup one year to the next. In consideration of each grade transition of interest, about 40% of victims in third grade were also victims in fourth grade; about 50% of victims in fourth grade were also victims in fifth grade, and about 51% of victims in fifth grade were described as a victim in sixth grade. While students tended to change status year-to-year, the overall percentage of students who were victimized remained similar.

For the current study population, the difference in overall victimization from grade three to grade four was statistically significant. There was a meaningful decrease in the overall number of students who were identified as victims in the fourth grade as compared to grade three. According to the parent and teacher report, about 27% of third

grade students who were measured in both the third and fourth grade were victims, whereas only about 17% of the same students were victims in grade four. The overall percentages of victimization between fourth (~19%) and fifth grade (~18%), and fifth (~21%) and sixth grade (~19%) were not meaningfully different. Even still, between 40 and 51% of students maintained their role as a victim in a bullying relationship from one grade to the next.

In line with the hypothesis for role stability during grade transitions, about 50 to 60% of students whose parents and teachers identified as victims in one grade, were no longer victims in the following grade. While overall, the number of students identified as victims tended to stay about the same (with the exception of grade three to four), roughly half of those students changed role from victim to non-victim and vice versa. These results support the idea that students' role in a bullying dynamic are less likely to remain the same over time.

Identification at grades three and six. It was also hypothesized that students who were initially identified as victims in third grade, would not be identified as victims in grade six. A comparison of the percentage of students who were assigned victim or non-victim status in both grades three and six, suggests that 42% of students who were victims in grade three were again victims in grade six. This suggests that almost 60% of third grade victims were no longer victims in the sixth grade. Like other grade comparisons, the overall percentage of victimization did change from about 21% in third grade to about 18% in sixth grade, but this decrease was not statistically significant.

Stability of role. To further explore the long-term relationship between grade and student victim status, grade was used to try to predict student victim outcome, with grade three as a point of comparison. When examining student status longitudinally, or across grades, there was evidence to support meaningful differences in victimization across students, across time individually. It was hypothesized that the role of victim would not be stable across grades when considering students identified as victims in the third grade.

Overall, grade was found not to be a good predictor of student role as a victim or non-victim. The analysis of the generalized linear mixed model examined the impact of grade on victim status, and only correctly predicted about 25% of victims for any given grade. Thus, about 75% of true victims were predicted to be non-victims at any given grade, based on this analysis. There was not a significant association between grade and student victim status for the current research. The longitudinal results were also in line with the exploration of grade comparisons, suggesting a meaningful decrease in the overall percentage of victims from grade three to grade four. This analysis also supported that there were similar overall levels of victimization when comparing victims in grade three to grades five and six.

Meaning of findings. Overall, the results for question one are in line with the hypothesis that student role as victim is not likely to remain stable across grades. Further, the data support that students who were identified as victims in grade three were less likely to continue to be victims in the sixth grade. As predicted, only 42% of students who were victims in grade three, were also victims in grade six. However, it is

possible that this subset of students was not a victim in grade four and or grade five. When analyzing the information for students across grades, about 39-52% of students who were victimized in one grade, were rated to be victims again in the following grade, which was in line with the hypothesis that student role was likely to change year to year.

While the percentage of victimization remained similar for most grade comparisons, the makeup of the group of students identified as victims tended to change year-to-year, with about 50% of students changing status from victim to non-victim or vice versa. The only significant change in victimization occurred in the transition to grade four, and a significant decrease in victimization was noted. Further, when using grade to predict victim status, results showed that grade level was not a good predictor of status at any given grade point. This finding is supported by the results of transition comparisons suggesting that the makeup of the victim group tends to change by about half, in grade transitions.

Overall, the results for question one suggested that grade was not a good predictor for victimization status at grades three, four, five, or six as reported by parents and teachers. When considering the same group of students measured across four grades, the overall number of victims tended to be about the same each year, but the actual students who made up the group of victimized students changed by about half, each year. There was not a meaningful difference in the level of victimization from one grade to the next, except when looking at the transition from grade three to four. The factors associated with the meaningful change in grade four were not specifically studied, but previous research can provide suggestions as to why this pattern may have been present in the

current research. In addition, results related to the stability of role can be understood within the context of the research literature.

Integration with previous literature. The extant research literature suggests that many factors relate to the stability of a student's role in a bullying dynamic over time. The stability of victim role has been contested. Some research suggests that the role of victim is stable due to the continued demonstration of risk factors, internalizing characteristics, and externalizing characteristics within the framework of the Socio-Ecological Model (Cillesse & Lansu, 2015; Averdijk, Malti, Eisner, Ribeaud, & Farrington, 2016; Kochenderfer-Ladd, Ladd, & Kochel, 2009). Other research contends that the role is less stable over time, particularly in transitions, citing the impact of victimization type and frequency (Ryoo, Wang, & Swearer, 2015). Further, Ryoo and colleagues (2015) found that the more frequent the victimization, the less stable the role over time.

The current research looked specifically at grade (or time) as a predictor of victim status for a nationally representative sample; whereas previous research has focused on student-specific factors or factors related to the victimization dynamic to predict longitudinal status as a victim. The purpose of using time as the sole predicting factor was two-fold. It allowed for an analysis of victimization over time, without consideration of potential confounding variables unique to the student. In addition, using time as a predictor variable in examining a nationally representative sample allowed for analysis of role longitudinally across grades, without the impact of specific district and state regulations and programming. This study allowed for a more generalizable

understanding of victim role stability in the transition from grade three to six. The current study found that grade (or time) was not a significant predictor of victim status over time. This study looked specifically at the transition through upper grades in elementary school, and the transition into sixth grade. Previous research supports an increase in overt victimization in the transition to middle school (Dinkes, Kemp, Baum, & Snyder, 2009; Espelage & Horne, 2008; Nansel et al., 2001; Pellegrini & Bartini, 2000; Smith, Madsen, & Moody, 1999). The current research found that there was not a significant difference in the proportion of overt victimization from grades four to five or five to six. The results of a generalized linear mixed model suggest that grade was not a significant predictor of victim status for the current sample.

Differences between subject characteristics in previous research studies and the current research study should be considered. The sample used in this study was nationally representative, and measured youth across the country in different types of schools, districts, and states. Thus, there are many differences between the subjects included in the Study of Early Child Care and Youth Development in terms of their experiences in school. Whereas, other longitudinal research studies examine subjects who are more educationally, demographically, or geographically similar to one another; the current study focuses on the experiences of victims more generally. This study is more representative of the general experience of victims in school, regardless of program implementation, school policies and practices, or certain school or geographic characteristics.

The tools used to measure victimization as well as the statistical procedures used to determine status, vary across studies which impacts interpretation and generalization. In addition, victimization varies in definition, degree, type, and frequency, requiring researchers to make measurement and inclusion decisions that are inconsistent across studies. Further, rater understanding, perception of, and conceptualization of bullying and victimization vary considerably. Differences in how victimization is understood by the rater; and measured and triangulated by the researcher across studies results in inconsistencies in our understanding of prevalence, trajectory, and experience. For the current study, victimization was operationalized and measured in a specific way that affects the reported prevalence, trajectory, and experience of victimization.

In considering the significant decrease in victimization from grade three to grade four in the current research study, it is important to reflect on the understanding and experience of victimization over time. While teacher and parent ratings of overt victimization were used in the current study to determine victim status, raters may have relied on information relayed to them from the child participant. Research suggests that younger children do not have an accurate understanding of what bullying is and is not, thus their reports of bullying victimization may not be accurate (Bovaird, 2010; Cornell & Bandyopadhyay, 2010; Cornell & Cole, 2012). While the current research did not depend upon self-report, it is possible that parent and teacher raters relied upon information reported to them from the child participant. Thus, the significant decrease in victimization from grade three to four may be a function of better understanding of what bullying victimization is and is not.

It is also important to consider the political context of the time period of study. The NICHD Study of Early Child Care and Youth Development took place during the years of 1991 to 2007. Particularly, the phase of interest for the current research study took place from 2000 to 2004. In the late 1990's and early 2000's there was an increase in organized efforts to understand, measure, and combat bullying at a state, national, and international level. Thus, national attention and varied district and state efforts may have impacted rating behavior over time.

Question Two Conclusions

The purpose of question two was to examine the overall amount of Victimization in grades five and six and provide information to support or refute the idea that victimization tends to peak in the sixth-grade year. Given that students are likely to experience a physical transition to a new building, and a transition in social dynamics, it was hypothesized that there would be more overall victimization in grade six as reported by parents and teachers. It was also hypothesized that the difference between levels of bullying victimization in these two grades would be significant. It is important to note that not all students make a physical building change in the transition to sixth grade, but this was the assumption for the current research.

In order to answer this question, a comparison was made between the overall levels of victimization for both grades. This question examined students who had a victimization status rating in both the fifth and sixth grades. A comparison was then made between student victimization in the fifth and sixth grade years.

Transition to grade six. To understand the difference in victimization in the transition from grade five to grade six, the percentage of victims was compared for each grade. The comparison of study students in their fifth-grade year and sixth-grade years suggested that there was a small increase in those identified as victims from grade five to six. However, the difference in overall victimization year to year was not meaningfully different. In grade six, only eight more youth were rated as victims, for a total of 140 victims in grade six which equates to about a 1% increase in the total number of students identified as victims in the transition. This difference was not statistically significant.

While the findings were in line with the hypothesis that the number of students identified as victims would increase in grade six, the increase was small and was not significantly meaningful. In the group of 750 students measured in both years, only eight additional students, for a total of 140, were identified as victims in grade six, when compared to the 132 victims identified in grade five. The comparison also suggested that the makeup of students identified in both years changed by about half; meaning that about 50% of students who were victims in the fifth-grade year, were not victims in the comparison year of sixth grade.

Meaning of findings. The findings for the second question suggested that for the current sample, there was an increase in the number of victims in grade six, by about 1%. This increase was not meaningfully important. Review of the students identified as victims indicates that only about 50% of students maintained victim status from grade five to grade six. This suggests that there was a change in the overall makeup of those identified as victims each year, but that the overall percentage was very similar. The

findings for the fifth and sixth grade transition shed new light on the trajectory of victimization, especially the sixth-grade peak identified in other research studies. Analysis of the data suggest a similar percentage of victimization in both grades five and six. When considering longitudinal analysis of overall victimization for each grade level of study completed for the first research question, results suggested that the only significant change in overall victimization was from grade three to grade four, which saw a significant decrease. These findings may refute previous research suggesting a significant increase in the amount of victimization experienced in sixth grade. The results of question two can be understood within the context of previous literature.

Integration with previous literature. Extant literature suggests mixed results for the peak or increase in victimization in the transition to middle school. Some research suggests that there is a significant peak of bullying victimization in the transition to middle school (Espelage & Horne, 2008; Farmer et al., 2015; Kase, Berenson, Cohen, & Johnson, 2004; Nansel et al., 2001; Pellegrini, 2002; Pellegrini & Bartini, 2000; Smith, Madsen, & Moody, 1999; Wang et. al. 2015); while others suggest that there is more victimization reported in elementary school (Beran & Tutty, 2002; Varjas, Henrich, & Meyers, 2009); and that prevalence depends on the type of victimization experienced (Yeager, Fong, Lee, & Espelage, 2015) or the severity of victimization experienced (Rivers, Poteat, Noret & Ashurst, 2009). Despite some variation in prevalence research, most results support the peak of overt victimization in the sixth grade due to the contextual transitions experienced in the transition to sixth grade. Contrary to the results of previous research and the hypothesized change in victimization in the transition to

sixth grade, current results did not support a significant difference in the level of victimization from fifth to sixth grade. In the current research study, the difference in victimization for grades five and six was not statistically significant. Of the 750 students examined across these two years, about 18% of students were considered to be victims in both years; 132 in grade five and 140 in grade six. While there was an increase in the percentage of those bullied, this increase was slight and non-significant.

It is again important to think about the contextual factors of the current research study in comparison to other research. The students in the current study were recruited from ten hospitals around the country, rather than from schools in a specific area. Thus, children in the current study are representative of many different types of school experiences. It is also important to consider the way in which victimization was operationalized and measured for the current research study. The current study provides new insight for victimization research as it looks at the trajectory of victimization among students across the country, rather than students in one geographic area, state, district, or school. Additionally, the current study compares the same students in the transition from fifth to sixth grade; rather than comparing fifth and sixth graders within the same year of study. This longitudinal comparison allowed for a better understanding of individual changes in victimization across time.

Question Three Conclusions

Question three sought to explore school-based factors suspected to be associated with an increase in victimization for grade six. It is important to note that a significant increase in victimization for grade six was not supported by the current research study.

Thus, the results will be interpreted as understanding how school-based factors are associated with victimization in grade six. It was hypothesized that the following school-based factors would assist in the prediction of student levels of victimization in the sixth grade: student perceptions of climate (Negative Attitude Towards School and School Attachment), Student-Teacher Relationship, and Teacher Self-Efficacy (Disciplinary Self-Efficacy and Self-Efficacy for Positive Climate). Further, it was hypothesized that more positive attitudes towards school, more positive ratings of school attachment, more positive teacher relationships, and higher levels of teacher self-efficacy would predict lower levels of Victimization in the sixth grade for the study sample.

To answer these questions, the researcher developed a model to use the identified school factors to try to predict victim status in grade six. This model of prediction included the school-based factors of interest, as well as three factors that research suggests are associated with victimization. The analysis aimed to provide data to suggest that the school factors of interest could predict victimization beyond factors that are expected to predict victim status. The predictive power of the factors of interest were explored in several combinations to provide information to enhance our understanding of the role of school-based factors in sixth grade victimization.

Research-supported variables. Puberty, student perception of peer support, and socioeconomic status had been identified as protective factors in the bullying victimization research (Craig, Pepler, & Connolly, 2001; Demaray & Malecki, 2003; Tippett & Wolke, 2014). Thus, these variables were selected as control variables. The ability of these factors to predict victimization status in the sixth grade was measured

first. In line with previous research, perceived social support from peers and socioeconomic status were both noted to have a protective effect against victimization. This means that as socioeconomic status and perceived peer support increased, the likelihood of being victimized decreased. Contrary to previous research findings, results indicated that puberty was not predictive of victim status in grade six.

School-factors. The factors of interest were then analyzed in a model that combined the research-supported control variables and variables of interest. After examining the predictive nature of teacher self-efficacy, student perceptions about school, and student-teacher relationship beyond the control variables; only Student-Teacher Relationship was a predictor of victim status for subjects in the sixth grade. Student-Teacher Relationship was the only school-based factor that was found to have a predictive relationship beyond Social Support and Socioeconomic Status. Further, Teacher Self-Efficacy for a Positive Climate had a positive impact on the ability of Student-Teacher Relationship to predict student victimization in grade six. Interestingly, Student-Teacher Relationship was not a good predictor of victim status beyond the control variables on its own. However, when considering Student-Teacher Relationship and Teacher Self-Efficacy for Positive Climate together, Student-Teacher Relationship was able to correctly predict victim or non-victim status for about 58% of student cases. This suggests that Teacher Self-Efficacy for Positive Climate enhanced the predictive capacity of Student-Teacher Relationship. However, the strongest prediction of victim status was for a model that included Social Support, Puberty, Socioeconomic Status, Student-Teacher Relationship, Teacher Self-Efficacy for Positive Climate, Negative

Attitude Towards School, and School attachment. This model correctly classified about 59% of student cases (as victim or non-victim). This suggests that all of the proposed factors with the exception of Puberty (control variable) and Teacher Disciplinary Self-Efficacy are important in predicting whether or not a student may be a victim in the sixth grade for the current study. Further, binary logistic regression modeling suggests that in order for Student-Teacher Relationship to have a protective effect on victimization in sixth grade, Teacher Self-Efficacy for Positive Climate must also be considered. Teacher Self-Efficacy for Positive Climate enhances the predictive capacity of Student-Teacher Relationship on its own, suggesting that the two variables together increase the ability to predict victimization.

Meaning of findings. The findings suggest that Social Support, family Socioeconomic Status, and Student-Teacher Relationships have protective effects against bullying victimization. Odds ratios are calculated to aid in understanding how likely an outcome is based on the presence of a specific factor, or independent variable. Students who perceived they had more social support from friends were 53% less likely to be victims of bullying in the sixth grade. Students with higher levels of socioeconomic status are 14% less likely to experience bullying victimization in sixth grade. The odds are 4.9% lower of being a victim when there is a one unit increase in positive Student-Teacher Relationship. Further, this relationship is enhanced when also considering Teacher Self-Efficacy for Positive Climate. This means that the protective relationship of Student-Teacher Relationship on Victimization status is associated with Teacher Self-Efficacy for Positive Climate. This is because modeling suggests that the relationship

between the Student-Teacher Relationship variable and Victimization only exists with the addition of Teacher Self-Efficacy for Positive Climate to the model. Further analysis would be needed to confirm this relationship. Taken together, these findings suggest that student perceptions of peer support, higher levels of family socioeconomic status, teacher confidence in their ability to support a positive climate, and positive relationships with teachers had a protective effect against bullying victimization.

Integration with previous literature. The extant research suggests the existence of many protective and risk factors associated with victimization. These factors tend to reflect the impact of social-ecological systems on the individual, including the individual and their microsystem, mesosystem, exosystem, macrosystem, and chronosystem (Bronfenbrenner, 1979). The impact of an individual's development, family, teachers, peers, community, government, and other systems can impact behavior and interactions with and between systems to influence victim experience and further individual development (Espelage & Swearer, 2010). The current research study examines factors related to the school microsystem after controlling for other systems including the individual (Puberty), family (Socioeconomic Status), and peer relationships (Social Support). Research highlights the importance of individual, peer, and adult actions and interactions on the victim experience. When considering the school environment, research tends to focus on systemic practices, relationships of students with their peers and teachers, efficacy of teacher implementation of programming, and student perception of school experience (Espelage & Swearer, 2010; Gage, Prykanowski, & Larson, 2014; Kyriakides & Creemers, 2012; Muijis, 2017; Waasdorp, Pas, O'Brennan & Bradshaw,

2011). Less focus is given to the victim experience as it relates to school factors in the transition to sixth grade.

In congruence with previous research, student relationships with peers and family socioeconomic status were associated with victimization in the sixth grade in that more perceived social support and higher family income were associated with a decrease in victimization. Puberty, however, was not a significant predictor of Victimization in the current sample. Previous research suggests that students who enter puberty earlier or later than typically expected are more at risk for victimization (Caspi & Moffitt, 1991; Craig, Pepler, & Connolly, 2001; Haynie & Piquero, 2006; and Silbereisen & Kracke, 1997). In the current study, the rating on the Tanner Scale for measuring puberty was not associated with a significant increase or decrease in victimization.

While the current research did not support a significant increase in victimization in the transition to sixth grade, the results do support the predictive capacity of school-based factors on Victimization. When considering the school factors of interest, the current research examined teacher self-efficacy, teacher relationship with students, and student perspective of school experience. This model provided information about a more nationally representative experience. Previous research examined victim experience as result of program implementation, systemic changes at the state or district level, or in a more geographically or demographically specific sample. Generally speaking, the impact of adult relationships with students in school was the most significant predictor of victimization within the model, supported by the efficacy with which teachers feel that they can create a positive climate for their students. However, modeling suggests that

consideration of school-based factors associated with adult relationships, teacher impact on climate, and student perception of school experience best predicts student Victimization outcome.

The most successful model for predicting sixth grade Victimization in the current research did not include Teacher Disciplinary Self-Efficacy. Prevention program component research supports the positive impact of student codes of conduct, perceived teacher response to bullying victimization, school policy, discipline and firm responses, and efficacy of program implementation on levels of victimization in lowering victimization and bullying (Hazler & Carney, 2012; Ttofi & Farrington, 2011). Although consistent and firm responses to instances of bullying victimization are noted to reduce victimization; in the current study, teacher perceived efficacy related to using discipline was not associated with change in victimization. Specifically, the measure asked teachers to rate how well they could get their students to follow rules, control disruptive behavior, and prevent problem behavior (Bandura 1986). Generally speaking, teacher ratings of their own effective use of discipline was not associated with a significant increase or decrease in victimization. In consideration of the previous research, these results may suggest that teacher action and intervention resulting from specific policies, training, or program implementation may be more effective in reduction of victimization, rather than general disciplinary practices.

The results also suggest that when considering teacher practices, the ability to build relationships and help students feel more connected to their school leads to more of an impact on reducing victimization than a teacher ability to prevent or respond to

problem behavior. The current results support extant research suggesting that a teacher's ability to build a relationship with their students and create a climate that supports student attachment and positive peer connections can be protective against victimization. In their longitudinal study of more than four thousand students in one diverse district, researchers Gage and colleagues (2014) found that adult support significantly predicted a reduction in bullying among high-risk elementary students; whereas peer support predicted a reduction in bullying among high-risk secondary students. In contrast to this finding, the current study's results support the importance of adult relationships in the transition to middle school, even though middle school students may seek more support from their peers than teachers during the transition. Further, the steps that teachers take to build a positive climate and positive relationships with their students appear to be more predictive of decreased victimization than their ability to prevent and respond to problem-behavior. When considering the victim experience, findings from this study suggest that teacher efforts to support school climate and build relationships with students is more likely to have an impact on reducing victimization than teacher ability to discipline students engaging in problem behavior.

Implications of Findings

From the review of results for the current study and previous research, several key findings emerge. In the current sample of youth measured from grades three through six, the role of victim was not stable across grades. Time was not a significant predictor of overall victim status, but there was a significant difference in Victimization from grade

three to grade four. Longitudinally speaking, the makeup of the victim group tended to change, as only 42% of third grade victims were also victims in grade six.

When looking specifically at the transition from grade five to grade six, the proportion of victimization was not significantly different as hypothesized based on previous research. In the sample of interest, the proportion of victimization did increase from 17.6% of the population to 18.7% of the population from fifth to sixth grade. While this was an increase in victimization, the difference was not significant. Again, the makeup of the victim group also changed by about half, with only 51.5% of fifth grade victims maintaining victim status in the sixth grade.

Despite the nonsignificant difference in victimization in the sixth grade for the current study, about 20% of students (18.6%) were reported to be victims of bullying. In addition, previous research supports the peak in overt victimization in grade six, suggesting that understanding differences in grades five and six is of importance. Specifically, differences in the school experience were of interest given the contextual change most students experience in transitioning to a new building in the sixth grade. Previous research points to changes in socioeconomic status, social relationships and support, and school climate as factors that may lead to the increase in victimization in grade six. The current research findings confirmed that socioeconomic status, teacher and student perception of climate, social support, and student-teacher relationships were factors that aided in the ability to predict victim status. Further, the current research contends that the most meaningful factor examined was Student-Teacher Relationship when considered with Teacher Self-Efficacy for Positive Climate. Teachers perception

of their own ability to: make school safe, make school enjoyable for students, help students trust their teachers, collaborate with other staff, and make students believe that they can do well in school supported the impact that having a positive relationship with a student had on Victimization. The most effective model for predicting victim status included these two factors as well as School Attachment and Negative Attitude Toward School from the student perspective. From the results of this model, it was clear that Teacher Self-Efficacy for Discipline was not a significant predictor of victim status. The implications of these findings are that teacher perception of their disciplinary practices to prevent or manage problem behavior in general may not be effective in the reduction of victimization. Whereas, positive teacher-student relationships and teacher efforts to create a more positive school climate can support reduction in victimization. However, this result highlights the importance of understanding the effectiveness of general discipline strategies versus specific training for bullying prevention and intervention; or opportunities to better understand the bullying dynamic.

Theoretical Implications

Theoretically speaking, the results of the current research demonstrate support for our understanding of Bronfenbrenner's (1979) Social-Ecological Model and the impact of systems on the victimization experience. The school context is a critically important microsystem for understanding frequency and severity of victimization, victim experience, and factors that increase or decrease victimization (Bronfenbrenner, 1979). The current research focused on the impact of a microsystem on the individual experience (Bronfenbrenner, 1979). Future research may go beyond this particular

microsystem to the interaction of microsystems (mesosystems) to determine the importance of different microsystems and their interaction on victim experience (Bronfenbrenner, 1979).

The current research also has implications for our understanding of the importance of the exosystem, macrosystem, and chronosystem on our interpretation of data (Bronfenbrenner, 1979). The current research examined victimization from the years 2000 to 2004; during this time, our definitions related to the bullying dynamic and our understanding of the outcomes associated with involvement in this dynamic evolved. It is important to note that our understanding has been dynamic since the 1980s and 1990s, and that the political and educational context of the time can impact our interpretation and understanding of findings from studies. Research about bullying and victimization should be presented within the context of understanding the socio-ecological factors at play during data collection. For the current research, data were collected in a time in which our perspective was developing (early 2000s) but was interpreted with knowledge and understanding of current the research and with respect to advances made since the time data were collected.

The current research fails to support the theorized developmental trajectory of overt victimization. That is, that there is a slight increase in victimization across elementary school with a peak in the sixth grade and increases in other forms of victimization as students progress to and through high school. For the current study, there was a significant decrease in the proportion of victimization from grade three to grade four, and the proportion of victimization in grades five and six was not

significantly different than grade three. In addition, looking specifically at the transition from grade five to six, there was not a significant increase in the proportion of victimization in grade six. Future research may utilize longitudinal research designs that examine this transition in nationally representative samples to truly understand the experience of youth as they transition controlling for building changes and program implementation. This may provide more support for the research findings of the sixth-grade peak or introduce new theories about the trajectory of victimization and how it relates for the school context.

Research Implications

The current research study suggests many research implications, some of which are closely linked to limitations of the current study. One such implication is the definition, operationalization, and measurement of bullying and victimization. Consistency in definition and measurement is important for comparison across research findings. In the current research study, triangulation of observations was utilized, considering parent and teacher observations. Future research should also include the perspective of students themselves as victims. In addition, the operationalization of victimization is likely to vary from one study to the next. In the current research, a more liberal definition of the frequency with which overt victimization was observed was used to measure Victimization in students. It is important to define and compare the frequency and severity of experience in order to understand results linked to the victim experience. Further information about the differences in experience based on differences in victimization frequency and severity would also be valuable. This supports the continued

use of triangulation, as well as the development of measures that can more accurately depict the severity and frequency with which victimization is experienced. Definition is also important. The current research sample developed as our understanding of bullying and victimization was developing. Thus, there was less consistency in understanding and defining bullying and victimization, which could impact the frequency and severity observed and reported. Further, research should focus on why there is less agreement in reporting of victimization across respondents. Triangulation of observations is necessary due to disagreement in reporting; research should examine factors may predict changes in reporting or differences in perceptions for raters.

The current research study also supports engaging in more longitudinal research of youth in a more nationally representative sample, who are making the transition from grade five to grade six and changing school buildings. It was not possible to separate or compare students who changed buildings versus those who did not in the current study. A more representative understanding of what the transition looks like for students with special attention paid to comparison of those changing buildings to those who do not across the country could give a better indication of the overall victim experience regardless of state, district, and school policies and practices. Understanding of the transition is also important for districts and schools who have implemented policies and programming to support the reduction of victimization.

Further, this research study focuses on the school-based factors that can impact the proportion of victims in a specific grade. Research should continue to extend to other systems like home and community, and continue to identify important factors from the

perspective of all stakeholders, especially in transition years. In addition, the impact of our context and progress in this area of study are critically important. Frequency of, experience with, attention to, understanding of, measurement of, and approaches to combating bullying and victimization have transitioned since the 1980s and 1990s and continue to develop in the present. Understanding the context in which data were collected in research is an important factor for interpreting results. This also supports the need for continued efforts to use consistent definitions and measurement in victimization research.

Research implications for the current study also support the use of school climate and teacher relationship factors as independent variables when studying bullying victimization. Research supports the importance of these variables on the victim experience, which was confirmed with the current research. In addition, future consideration of teacher perspective of school-based factors will be important given the significant findings related to teacher observations of their own abilities to enhance a positive climate and their positive relationships with students. Future research may also consider the differences in teacher and student perspectives of school-based factors and their effect on levels of victimization in their schools.

Future research should also further analyze the victim group to provide insight into the makeup of the victim group each year and changes in the victim group from year to year. For example, analyses of role with a time dependent covariate could be helpful for better understanding of what predictors lead a student to be a victim in each grade. Further, growth mixture modeling may be able to provide more information about year-

to-year changes in student role as victim, and the makeup of victim groups. This information may be helpful for identifying key groups to support and monitor. Additionally, other risk factors should be carefully examined as potential predictors of victim status, including social skills; severity of victimization; and risk-factors including internalizing difficulties, sexual minority and gender diverse students; racial, ethnic, and religious minority students; immigrant status students; students with disabilities; and students of lower socioeconomic status.

An additional implication is the impact of teacher training and development related to building relationships with students and building a positive climate. Much research focuses on the impact of climate, the impact of bullying intervention programs, and the impact of teacher training about bullying on levels of victimization. Implications for the present study indicate that more research may be warranted in order to observe the impact of specific training opportunities for relationship building and climate building on levels of victimization, especially in transition years. Further, research may focus more on the differences in these school-based factors at all levels of education to support the development of training specific to grade levels, and to identify the types of needs for students in the transition years of their educational experience.

Applied Implications

Generally, this research aids our current understanding of the victim experience, especially as it relates to school-based factors in the sixth grade that can impact levels of victimization. While the current research did not support an increase in victimization over time, or a peak in the proportion of victims in the sixth grade; the research does not

suggest that the experience of the victims or outcomes of being victimized are not significant or important. Students identified as victims within a bullying dynamic are at risk for a host of negative social, emotional, behavioral, academic, and developmental outcomes. Thus, understanding the school-based factors that may lead to an increase or decrease in victimization is critically important for the support of victims, no matter how large or small the proportion of victims is in a given class, school, or district.

Application implications of the current research may suggest that more focus should be placed on teachers' ability to build strong relationships with their students, help students to feel that they belong in their school, help students to see their own importance and the importance of school, and take action to support a positive school climate for students. The current research suggests that disciplinary action or the prevention of problem behavior may not be as important as steps taken to provide student support, safety, and belonging. Further results for the current research indicate that teacher perception of their relationship with students and their ability to promote a positive climate, are more significant in predicting victimization than student attitude toward school and their perception of attachment to their school. The implications are that when teachers feel that they can build and have built a positive relationship with and positive climate for their students, it can lead to lower levels of victimization in the sixth grade. These findings highlight the importance of providing teachers with tools and strategies to build a positive climate in their school and positive relationships with their students.

Limitations

There are a number of limitations for the current research study that impact results, interpretation, and generalization of findings. This includes research design and internal validity, external validity, measurement issues, and statistical problems. While limitations impact the generalizability of the current research study, there is much to gain from the results. In addition, this research may help to guide future research projects in terms of design and measurement.

Research Design and Internal Validity

The third question in the current research study examined school-based factors that were hypothesized to impact victimization. It is likely that for this question, other potential confounds could have been accounted for and controlled, and that these controls could explain more of the variance in the dependent variable than those selected. The researcher selected control variables that had research-supported relationships with victimization, and controls were selected based on data collected in the NICHD SECCYD study. It is possible however, that other important variables should have been selected, including individual factors that represent high-risk or variables related to the educational experience. For example, data about well-established personal or individual factors that are predictors of victimization were not included within the school factor model because they were not measured by SECCYD. These include ability or disability status and gender diversity status. In addition, data were not collected to inform school placement for sixth grade; that is, if participants were in a middle or elementary building when data were collected in the sixth grade.

Further, there may have been other school-based variables that could have been included in the modeling to predict victimization in sixth grade. Again, the researcher selected variables that represented important school factors that have been shown to relate to victimization or that were hypothesized to be linked to victimization. The researcher was again limited by the measures used and data collected as part of the SECCYD study. There were other school variables of interest that were not explored based on availability of data. This includes data about parent-teacher collaboration, teacher exposure to training about bullying victimization, information about school or district-wide policies, or implementation of programming or strategies to address victimization. It is also important to note that the current research was not experimental. Data were collected in the years 2000 to 2004 and examined from a longitudinal perspective, and because no variables were manipulated. Thus, it cannot be said that any variables caused increases or decreases in victimization. It is also possible that other types of causation could have impacted the relationships between the research variables and victimization outcome. While potential confounds were controlled for, there is also the possibility for circular causation or third-variable causation.

Additionally, this study was nationally representative with students having been recruited from 10 hospitals around the country at birth. That being said, data were not collected to suggest if the study student's school or district had implemented specific programming or policies surrounding bullying victimization. This would have been another confounding variable that was not controlled for. There could have also been

other variables that were not included, that may have impacted victimization or the effect that a specific variable had on victimization.

Thinking more generally about the selected participants, though this study was nationally representative, study participants were not necessarily representative of the risk factors we know to be associated with victimization. The NICHD SECCCYD participants did not include children of mothers who had limited English proficiency, children of mothers who were identified as having a substance abuse problem, children who had a visible disability upon birth, and children who were in the hospital (after birth) for more than 7 days. Without these participants, there is not a full understanding of victimization, given what existing research tells us about youth who are most likely and most often victimized. In addition, there were a number of participants who dropped out each year for different reasons, again, students who were no longer participating as time went on may have been students more at risk for victimization given socioeconomic status or even support in the home setting. Participants who were missing data for one or both raters for a given year were also not included. Again, this could have impacted the outcomes if these students experienced victimization but were left out of the analysis.

External Validity and Generalizability

Generalizability of results to other settings and situations is impacted by characteristics of the selected population and the operationalization of victimization. While the sample was representative of geographic diversity, many youth who were likely to be at-risk for victimization were not considered for the study as previously noted. Thus, the current research lacks generalizability to all at-risk students who may

experience victimization. In addition, there was not a large subset of students who experienced frequent victimization as rated by their parent and teacher, so the perspective of the students considered to be victims in the current study may differ from the perspective of youth experiencing more frequent victimization.

Analyses and Statistical Power

For the current research study, there were a large number of participants measured, but fewer participants were included in each question's analysis given missing data or student drop out. Similarly, a permissive definition of victimization was used in the current study. This could influence the findings and conclusions about the proportion of victimization experienced over time and the impact of school-based factors on victim experience. Students who have experienced more severe and frequent victimization may be more or less likely to maintain their status as a victim; in addition, the school factors may have a different impact on victimization for these students. The permissive operationalization may inhibit the ability to draw strong conclusions about the proportion of victimization and school-based factors impacting this proportion. These limitations impact the statistical power and significance of findings.

Additionally, it was difficult to select a methodology to truly examine the stability of student role as victim or non-victim over time. The selected methods did not allow for an in-depth analysis of student role year to year, or the makeup of victim and non-victim groups. When considering time, direct year to year comparisons were made, and a longitudinal comparison was made with third grade as a reference point. Statistical analysis that is better able to examine longitudinal data for the stability of student role

may require a continuous rather than a binary dependent variable to have a deeper understanding of victimization over time. An associated issue is the binary status of the Victimization variable as well as the skewed data associated with Victimization. These factors required specialized methods as the data did not meet assumptions required for other statistical analysis. Data about Victimization tend to be non-normal and skewed given the smaller percentage of studied populations experiencing victimization, especially more frequent or severe victimization.

Another limitation for the current analysis was the focus on limiting false negatives at the expense of increased false positives. The researcher manipulated the cutoff variable for the third question in order to reduce the number of victims who were incorrectly identified as non-victims. This was done at the cost of over-identifying victims who were not actually victims. This decision was important as the researcher weighed the cost of over-identifying non-victims as victims with the benefit of correct identification of more true victims. The researcher worked to balance false-negatives with false-positives, but a limitation is the number of non-victims identified as victims with the current model cutoff value.

Measurement

It was necessary to conduct meaningful analyses in the current study, but it is very likely that the severity of victimization for those who were identified as victims was mild when compared to other studies exploring bully/victim issues. The calculation of the victim variable was very permissive in the current study. Nonvictims were youth who had no exposure to overt victimization; or youth who were observed to be victimized by

only one respondent. A youth was considered to be a victim if both raters indicated that there was any exposure to overt victimization. This operationalization of victimization lacks information about the intention of the perpetrator, repetition of aggression from the same perpetrator, an imbalance of power in the relationship, and the severity of negative and aggressive actions. Further, the operationalization of frequency in the current study is more permissive than other research. In addition, the ratings are restricted by the Likert scale options of never, sometimes, and often.

Ratings are further impacted by parent and teacher opinions and understanding of victimization. Research suggests that adults tend to underestimate bullying victimization, and that youth and adult reporting does not significantly align (Elsea & Smith, 2000; Stockdale et al., 2002; Williams, 2008). Parent and teacher perception about the normalcy of bullying behavior as part of growing up can impact their understanding bullying victimization (Bradshaw et al., 2007; Demaray, Malecki, Secord, & Lyell, 2013; Kochenderfer-Ladd & Pelletier 2008; Espelage & Swearer, 2010). Further, triangulation of victimization did not include self-report, as this was not available for all years of study. Triangulation with the use of self-rating, would have been even more critical given changes in parent and teacher perspective across time in relation to child development. While the victimization questions remained the same each year, teacher and parent perspective, tolerance, and expectations of youth behavior likely changed as the students aged from third to sixth grade. Thus, differences in expected behavior could have impacted the way that parents and teachers answered questions. Further, if a child experienced victimization in an earlier grade, the rater may have been less inclined to

assess a higher rating due to perceptions of normalcy; whereas the opposite could be true for a victim in the sixth grade, when these behaviors may be less expected. Additionally, there are many ways to operationalize and measure bullying victimization, and the manner in which victimization was measured in the current study was impacted by the availability of data.

Future Directions

Future research in the area of school-based factors related to the transition to middle school may clarify findings and extend results. The current research study provides a small understanding of the importance of teacher efficacy in building relationships and providing a positive school climate on victimization. Future research may provide a better understanding of how school-based factors may impact the peak of victimization observed in other research studies. Future research may provide a better understanding of the differences in school-based factors for students experiencing victimization of different types, amounts, and severity. Additionally, it may seek to understand differences in student experience related to school-based factors in all years of education, but especially the years before and after a transition to a new school setting.

For the current research, grade was not determined to be a significant predictor of victimization, nor did results support a peak in sixth grade victimization. Further research is needed to explore longitudinal data from a national perspective to better understand the stability and trajectory of victimization. Further, research should consider the frequency with which participants experience victimization to draw conclusions about stability and trajectory as it related to victim severity. Additional research may be needed

to clarify differences in the stability of role within the context of societal changes over time. Thus, more recent data could provide additional information about how time, research, and improved understanding have impacted trajectory and frequency. Further research should also more closely examine the experience of those students who exhibit stability in their role as victim over time, compared to those who were less stable.

Comparison of student school-based factors from the years prior to and following building transition may also provide helpful information about reduction in victimization and improved climate. Further, the field could benefit from research comparing student perspective and teacher self-efficacy for specific climate and relationship factors and their predictive capacity for victimization. This may help to provide additional understanding about the importance of teacher and/or student perspective, which could support practices and efforts for professional development. An additional comparison could be made in schools where programming specific to victimization has been implemented, to further practical understanding of where time and training is best focused.

The current research also suggested that teacher self-efficacy related to creating a positive school climate had an impact on the relationship between student-teacher relationship and decreased victimization. Future research is needed to analyze more complex relationships between teacher self-efficacy for climate, student-teacher relationship, and victimization. Mediation and moderation models would provide an understanding of the role self-efficacy for climate plays on the relationship of student-teacher relationship and victimization. Additionally, the interaction between the student-

teacher relationship and self-efficacy for creating a positive climate should be explored in future research. This would provide further information about the interaction between these two variables and if the effect on victimization is different for varying levels of these variables. As previously mentioned, this relationship could also be explored from the student perspective for comparative purposes. Further research may also consider using factors such as student-teacher relationships and school climate as control variables to gain more information about other school-based factors, especially as it relates to teachers and collaboration with administration and parents.

Finally, in order to truly understand the impact that school factors have on victimization, especially in years of transition, more triangulation of victim experience is needed. Future research should consider parent and teacher observation of victimization but must also include information from peers or the individual themselves to better control for false negatives. Future research may consider the weighting of responses from certain respondents in order to again reduce the chance of missing victims. Further, providing the definition of bullying and victimization may help to control reporting errors for parents, teachers, peers, or self-report.

These future directions may help to explain inconsistencies and questions posed as a result of the current research study. Further research may support practical understanding of the victim experience and trajectory, and how school-based factors may protect students or put them at risk for victimization. More research is needed to truly understand the interaction of student microsystems (mesosystems) and the role of these connections in victim experiences (Bronfenbrenner, 1979). Schools are an important

setting for the development of student social relationships, behavioral and emotional regulation, academic skills, life skills, and social interaction. Schools are also the setting where victimization is most likely to occur. Continued support for or understanding of the school's role in victimization and the reduction of victimization is critically important to ensure that students develop healthy skills and gain the most from their school experience.

APPENDICES

APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL

Appendix A

Institutional Review Board Approval

RE: Protocol #16-424 entitled "Middle School Bullying: School-Based Predictors of Physical Aggression Among Sixth Graders"

We have assigned your application the following IRB number: 16-424. Please reference this number when corresponding with our office regarding your application.

The Kent State University Institutional Review Board has reviewed and approved your Application for Approval to Use Human Research Participants as Level I/Exempt from Annual review research. Your research project involves minimal risk to human subjects and meets the criteria for the following category of exemption under federal regulations:

Exemption 4: Existing Documents, Data, and Specimens

This application was approved on August 2, 2016.
***Submission of annual review reports is not required for Level 1/Exempt projects. We do NOT stamp Level I protocol consent documents.*

If any modifications are made in research design, methodology, or procedures that increase the risks to subjects or includes activities that do not fall within the approved exemption category, those modifications must be submitted to and approved by the IRB before implementation. Please contact an IRB discipline specific reviewer or the Office of Research Compliance to discuss the changes and whether a new application must be submitted. Visit our website for modification forms.

Kent State University has a Federal Wide Assurance on file with the Office for Human Research Protections (OHRP); FWA Number 00001853.

If you have any questions or concerns, please contact us at Researchcompliance@kent.edu or by phone at 330-672-2704 or 330.672.8058.

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