Perceptions of school climate and bullying in middle schools

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Perceptions of School Climate and Bullying in Middle Schools

by

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy
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PERCEPTIONS OF SCHOOL CLIMATE AND BULLYING IN MIDDLE SCHOOLS

Irene Pintado

ABSTRACT

Bullying has been identified as a problem that can affect the physical and psychosocial health of both the aggressors and victims. Given the consequences for those who bully, for victims, and for the school environment, early intervention is important to minimize these risks. School staff need additional data to understand the scope of bullying and to adopt effective strategies. This study seeks to meet this need by analyzing the association of bullying behaviors and school climate perceptions of middle school students within the context of school membership. This study used Bronfenbrenner’s ecological system theory. Within this framework, a bullying interaction occurs not only because of individual characteristics of the child who is bullying, but also because of actions of peers, teachers and staff; physical characteristics of the school environment; and most importantly, of student perceptions of these contextual factors.

This study used survey data to analyze the effect of student perceptions of school climate on self-reported bullying behaviors of students in six Sarasota County middle schools. Data sources include student- and school level data. The researcher gathered student level data from a modified middle school YRBS survey the Sarasota School
District administered to middle school students, in December 2003. The school level data were gathered from the Florida Department of Education Web site. The data were analyzed using multiple regression analyses and within multilevel models.

The results indicated that bullying was a common occurrence in the schools. Approximately eight percent of students were bullied on a regular basis in school, with verbal bullying as the most common type of bullying and relational bullying as the least common. Bullying aggression for physical, verbal, and relational bullying was most common for boys. Girls reported higher levels of being victims of relational bullying. Bullying also varied according to school membership and grade membership. Bullying differed according to school climate perceptions, as well. Interestingly, the effect of some of these variables on bullying was modified by sex. Finally, school context was a significant predictor of bullying, in particular the percentage of students eligible for free or reduced-price lunch.
Perceptions of School Climate and Bullying in Middle schools

Chapter 1

Introduction

The purpose of this study is to analyze the relationship of school climate with the prevalence of peer victimization among middle school students in Sarasota County, Florida. This chapter provides a brief description of the problem; an overview of the conceptual framework used in the study; and a list of the study’s research questions.

Statement of the Problem

Aggressive behaviors in childhood and adolescence have been the focus of many empirical investigations in the last several decades (e.g., Craig & Pepler, 1997; Crick & Werner, 1998; Pellegrini & Bartini, 2000; Shakeshaft, et al., 1995; Smith & Sharp, 1994). As a result, peer victimization or bullying, a subset of aggression, has been identified as a significant problem that can affect the physical and psychosocial health of those who are frequently bullied (victims) and those students who bully their peers at an early age (aggressors) (Batsche & Knoff, 1994). Bullying has been defined as a set of behaviors that is "intentional and causes physical and [or] psychological harm to the recipient" (Smith & Thompson, 1991, p. 1). Bullying includes actions such as name-calling or teasing, social exclusion, and hitting (Crick & Bigbee, 1998; Olweus, 1991; Rigby, Cox, & Black, 1997; Thompson & Sharp, 1994).

Previous studies indicate that bullying in the form of teasing is a common event experienced among adolescents and can have serious consequences (Corsaro & Eder,
In one study conducted in the United States, 75% of adolescents reported some form of victimization from a bully during their school years (Hoover, Oliver, & Hazler, 1992). In another study, 90% of adolescents who were bullied believed that the victimization caused them significant problems, including loss of friendships and feelings of isolation and hopelessness (Hazler, Hoover, & Oliver, 1992). Victims of bullying often experience problems with emotional adjustment, including depression, anxiety, and low self-esteem, as well as difficulties at school (Kochenderfer & Ladd, 1996; Rigby & Slee, 1993). Research also indicates that bullying is a gateway behavior that leads to more serious aggressive behavior (National School Safety Center, 1999). Studies conducted outside of the U.S. suggested that students who bully were themselves at an increased risk of being physically abusive and of having a criminal record as adults (Olweus, 1993). Additionally, the entire dynamics of a school can be affected by bullying behaviors if they go unchecked; threats and intimidation associated with bully behaviors can create a negative atmosphere for all students (Hoover & Hazler, 1991).

Bullying is frequently mentioned as a possible contributor to school violence (Boatwright, Mathis, & Smith-Rex, 2000; Flannery & Singer, 1999; Maeroff, 2000; Olweus, 1991, 1993, 1997; Rigby, 1996; Shakeshaft, et al., 1995; Vossekuiil, Reddy, Fei, Borum, & Modzeleski, 2000). A report by the U.S. Secret Service notes that in more than two-thirds of school shootings, the attackers experienced some form of bullying prior to the incident, and several attackers had experienced bullying at school over a long period of time (Vossekuiil et al., 2000). Not surprisingly, a CNN-Gallup poll taken after the shootings at Columbine High School reported that most high school students blame
each other for the "bullying, teasing and harassment that pushes the Eric Harris and Dylan Klebolds of the world over the edge" (Lindsey, 2001, p. 1).

Given these serious consequences for the students who bully, their victims, and the impact on the school environment, intervention during early adolescence is extremely important to minimize these risks. In the past several decades, etiological perspectives on aggression have progressed from the view of aggression as an innate characteristic in all humans (Espelage, Bosworth, & Simon, 2000) to the more recent conception that aggression in children reflects complex interactions between the children and their environment (Swearer & Doll, 2001).

Even though the body of empirical research on the topic of bullying is growing (Craig & Pepler, 1997; Crick & Werner, 1998; Pellegrini & Bartini, 2000; Shakeshaft, et al., 1995; Smith & Sharp, 1994), school administrators and faculty need additional data to understand the scope of this problem and design effective intervention strategies. This study seeks to meet this need by gathering information on bullying among middle school students as well as information on student perceptions of school climate that are associated with involvement in bullying.

Conceptual Framework

The problem of bullying at school is a complex problem that emerges from social, physical, institutional and community contexts, as well as the individual characteristics of the students who are bullied and victimized (Swearer & Doll (2001)). A useful framework for understanding bullying is Bronfenbrenner’s ecological system theory (1979; 1993). When the ecological perspective is applied to bullying, a bullying interaction occurs not only because of individual characteristics of the child who is
bullying, but also because of actions of peers, teachers and school staff, and physical characteristics of the school environment. How students perceive all these factors will be referred to as school climate in this study. Families, cultural factors, and even community factors also play a role in the occurrence of the bullying interaction.

The ecological system theory, as conceptualized by Bronfenbrenner, has been used to study complex behaviors of children and adolescents. Nelson and Keith (1999) studied female and male early adolescent sex role attitude and behavior development in an ecological context. Saint-Jacques (1996) used Bronfenbrenner’s ecological theory of human development to investigate the roles of family processes and family structure on adolescent adjustment. Coleman and Beckman (1980) analyzed the patterns of relationships among the environments of home, school, and work in youth development. Bronfenbrenner’s ecological framework was also used by Gerdean (1999) to examine the relationship between perceived multiculturalism of school and student perceptions of ease of learning, school achievement, and intent to stay in school. One final example of researchers using Bronfenbrenner’s ecological systems theory to understand a complex event is a study by Bulgren and Carta (1992), which examined children’s learning in relationship to instructional context, described as the teacher, subject matter, curriculum, tasks, and group structure.

Bronfenbrenner’s ecological system theory is a useful framework in this study for several reasons. This ecological system theory takes into account that the student is not merely acted upon by the environment. The student is both active and reactive. Take for example the scenario in which a student’s perceptions of the school climate cause him or her to act in an aggressive manner. Those aggressive acts, in turn, affect the school
climate, in that other students may now perceive it as threatening and become timid or aggressive themselves.

Another strength of framing this study using Bronfenbrenner’s ecological theory is that it takes into account not just the environment, but students’ perceptions of the environment. This is important, because it accounts for why two students in similar environments may exhibit wildly different behaviors (Thomas, 1996).

Finally, another benefit of using Bronfenbrenner ecological systems theory is its use of the microsystem as a unit of analysis. His conception of the microsystem specifies which aspects are the most important in creating meaning for the adolescent – the activities, roles, and interpersonal interactions in the setting under study. In this study, to understand how a student’s perceptions of the school climate might affect his or her behavior, it is necessary to assess the school climate in a manner that elucidates the student’s perceptions of the activities of teachers and peers and the interpersonal interactions of people in the school microsystem. In summary, bullying is best conceptualized as intrinsic factors in the student interacting with the social environment, which then serves to reinforce bullying and/or victimization behaviors.

Research Questions

This study addresses the following research questions:

1. What is the prevalence of bullying in the sample?
2. What type of bullying occurs most frequently (physical, verbal, relational)?
3. Are there differences in types of bullying or victimization as a function of school, gender, ethnicity or grade?
4. What are the perceptions of school climate among students in this sample?
5. Are there differences in school climate perception as a function of school, gender, ethnicity, or grade?
6. Do the independent variables – perceptions of school climate variables and school membership (the school a student attends) – have a significant relationship with students reporting being involved in bullying at all, whether as a bully or as a victim?
7. Does the combined effect of independent variables – perceptions of school climate variables and school level variables (enrollment, absences, staff, percent of students classified as disabled, and percent free or school lunch) – explain the observed variation in students reporting being involved in bullying at all, as a bully or as a victim?
8. Does gender modify the observed effects of dependent variables on students reporting involvement in bullying at all, as a bully or as a victim? Effect modification occurs when the association between the independent variable and the dependent variable is affected by a third factor, in this case gender.

This project is broken down into two components. One component consists of a service project with the Sarasota County School District and the other component consists of the analysis of the collected data. The service project encompasses the development and pilot testing of survey questions. The data analysis portion of the project entails using hierarchical or multilevel models to answer the research questions.

The research questions have been addressed by analyzing data obtained from a survey with sixth, seventh, and eighth grade students in Sarasota County, Florida. The
questionnaire was anonymous, school-based, and self-reported. To supplement the information obtained from the student questionnaires, the researcher attempted to obtain school level data that is routinely collected by administration. An observational aspect consisting of an escorted tour of the school was to be used to supplement the school profile. In place of the school profile and the observational component of the analysis to obtain school-level data, the researcher obtained data from the Florida Department of Education (2003). Additionally, as part of the service project, the researcher conducted professional staff interviews from the middle schools. The data from the staff interviews was be used to determine whether the survey was written at a level that middle school students would easily understand. Data from these interviews were also used after the data from the student survey were analyzed to aid in possibly understanding the underlying reasons for the patterns that emerged from the data analysis.

**Limitations and Delimitations of the Study**

One limitation of the study is the use of the cross-sectional survey design. In this study, the researcher used a closed question design, which although poses many advantages (easier and quicker for respondents to answer; responses are easier to compare, code, and statistically analyze; respondents are more likely to answer sensitive topics; less articulate respondents are not at a disadvantage, and replication is easier), it also poses disadvantages (Neuman, 1997). In a closed design, the response choices can suggest ideas that the respondent would not otherwise have. Also, respondents with no opinion or knowledge of an issue can respond anyway. Respondents can also be frustrated because their desired response is not available. In a closed design, misinterpretation of a question can go unnoticed and distinctions between respondent
answers may be blurred. It is also possible that students may make mistakes in “bubbling” their response choice. Finally, the use of closed-ended questions may force respondents to give simplistic responses to complex issues or force them to make choices they would not make in the real world.

A second limitation, also arising from the study’s cross-sectional design, is that the researcher determines the exposure to the dependent and independent variables simultaneously. This limitation leads to temporal ambiguity (Did a poor school climate lead to bullying or did bullying lead to a poor school climate?). A third limitation due to the nature of cross-sectional studies is that the researcher has difficulty in distinguishing risk from diagnostic factors (Does a poor school climate lead to bullying or is a poor school climate a symptom or manifestation of bullying?).

Finally, the study could have selection bias, in that students who are bullied may be more likely to be absent on any one day. Other ways in which the study may be biased could depend on the day of the week the survey is administered (perhaps more students will be absent on a Monday or a Friday). Another possible source of selection bias is that students in half the sixth and eighth grades will be taking a different survey entirely. How these students were selected was not randomly performed and the process of selecting which students would take which survey was left entirely up to each school’s administration.

The delimitations of the study include lack of generalizability of the results to the general middle school population, since the study is limited to middle school students attending six middle schools in Sarasota county, a county that is fairly affluent (U.S. Census Bureau, 2002). Along similar lines, another delimitation of the study is the
limited number of ethnic groups (and the limited number of students in those ethnic groups) in the study.

Definition of Terms

The following are terms used in this study:

**Absences.** The percentage of students from the total enrollment who were absent 21 or more days during the school year (over the course of the whole year).

**Bully.** A bully is a child who tends to establish dominance over another child or children by repeated acts of aggression.

**Bully/Victim.** A bully/victim is a child tends who tends to establish dominance over another child or children by repeated acts of aggression, but who in turn experiences repeated acts of aggression from another child or other.

**Bullying.** A student is bullied when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more students. Bullying is characterized by three criteria (Olweus, 1993):

- It is aggressive and intentional behavior
- It is carried out repeatedly; and
- It occurs within an interpersonal relationship characterized by an imbalance of power.

**Enrollment.** This is the number of students enrolled in the middle school. The total number of students in school as measured during the fall survey period in October; known by the Florida Department of Education as fall membership.

**School Membership.** This school variable will be an indicator of the school a student attends.
**School Climate.** In this study, school climate consists of the students’ perceptions of the school environment. Generally, school climate is the feel of the school as perceived by those who work there or attend school there (Anderson, 1982). This study focused on student concerns and worries as a reflection on school climate (Freiberg, 1998). The modified middle school Youth Risk Behavior Survey (YRBS) survey contained 25 school climate items (Centers for Disease Control and Prevention, 2003).

**School Lunch.** The percentage of students eligible for free or reduced-price lunch. The percentage is arrived at by dividing the number of students eligible for free or reduced-price lunch, as determined in October, by the student membership in October.

**Staff Number.** The total number of school staff.

**Victim.** A child that experiences a strong emotional reaction to repeated acts of aggression by another child or other children is a victim of bullying. In this study, the degree to which a student reports being victimized by bullies is referred to as bullying victimization.
Chapter 2

Review of the Literature

This chapter will provide a review of the literature covering the theoretical framework used in this study; a definition of bullying and a review of bullying research; a description of the history of middle schools and the challenges facing middle school students; a description of Sarasota county and its middle schools; a definition and discussion of the concept of school climate; and background information on the Middle School Youth Risk Behavior Survey.

The section of the theoretical framework will describe Bronfenbrenner’s ecological theory of human development. This section will distinguish this theory from other ecological theories and will describe its components. Additionally, the researcher will discuss why this theoretical framework was selected.

In this chapter, the researcher will also provide a definition of bullying, including a brief history of the concept of bullying in the research literature. The researcher will describe the characteristics of bullies, victims, and bully/victims that have been reported in the literature. Additionally, this section will contain a discussion of the reported prevalence of bullying, and the methods commonly used to assess its prevalence.

In order to provide an understanding of the middle school setting, the researcher will discuss a brief history of the middle school and address some of the unique challenges facing middle school students. A brief discussion on bullying in middle schools is also included.
Chapter two also contains a discussion of Sarasota County and its middle schools. Recent census data and data from the Florida Department of Education are highlighted. In this chapter, the researcher describes existing research on school climate. This description includes a definition of school climate and methods used to understand this concept.

Finally, the researcher provides information on the Youth Risk Behavior Survey (YRBS) and why and how it has been modified for use in middle schools. A brief discussion on the use of large population surveys in complex patterns of relationships is included.

*Theoretical Framework*

According to Bronfenbrenner, the ecology of human development is “the scientific study of the progressive, mutual accommodation, throughout the life course, between an active, growing, highly complex biopsychological organism - characterized by a distinctive complex of evolving interrelated, dynamic capacities for thought, feeling, and action - and the changing properties of the immediate settings in which the developing person lives, as this process is affected by the relations between these settings, and by the larger contexts in which the settings are embedded” (1993, p. 7). Ecological theory posits that along with development in language, cognition, social competence, and physical integrity, children also adapt to their immediate social and physical environment. These social and physical environments, in turn, are mediated by more remote forces in the larger community and society. Taken together, all the components act as ecological systems (Capra, 1996; Thomas, 1996), and competence or problems that are seen in the child are reflecting properties of this integrated system and
not just their individual characteristics. Complex interactions between children and their environments work to develop or inhibit prosocial and antisocial behaviors in each child (Lerner, Hess, & Nitz, 1991; Sameroff, 1975; Sweerar & Doll, 2001). Thus, problems do not “reside” within the children or within the context but instead are the result of ongoing transactions between the two (Pianta & Walsh, 1996). Therefore, the interaction between the individual and the environment forms the basis of an ecological approach to human development.

In the field of health promotion, ecological models are multifaceted models, concerned with environmental change, behavior, and policy that help individuals make healthy choices in their daily lives. The key element of the ecological model is that it takes into account the physical environment and its relationship to people at individual, interpersonal, organizational and community levels. Furthermore, the different parts of the model are integrated and interact with each other. The philosophical foundation of ecological models is the concept that behavior does not occur within a vacuum (Coreil, Bryant, & Henderson, 2001; Sallis & Owen, 1997).

Like the ecological models of health promotion, Bronfenbrenner’s ecological theory of human development has as its philosophical underpinning the concept that behavior does not occur in a vacuum. As a developmentalist, Bronfenbrenner seeks to understand environmental influences in children’s lives, and does so in a systematic manner. However, the Bronfenbrenner’s ecological theory of human development differs from ecological models of health promotion, in that his theory is centered on the individual. A crucial conviction in Bronfenbrenner’s scheme is that the influence of the environment on the child’s behavior is influenced not by the objective conditions, but by
the child’s perceptions and interpretations of what takes place in the behavior setting. Additionally, in Bronfenbrenner’s theory, the child is actively shaping his or her environment, in that his or her response to an environmental condition, will in turn affect the environment (Bronfenbrenner, 1979; Thomas, 1996).

The theory’s most basic unit of study is the microsystem - “a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given setting with particular physical and material characteristics” (Bronfrenbrenner, 1979, p. 22). Examples of typical settings for such microsystems include school, home, and peer group locations. It is within this unit of study that the individual has direct interaction with agents. Also important is that the individual is not passive, but helps construct the setting, since the influence of a behavior setting on a child’s development is not exerted by the “objective” or “real life” nature of the activities, roles, and interpersonal relations seen there. Rather, the influence derives from the child’s perceptions or interpretations of these factors (Bronfenbrenner, 1979; Garbarino & Abramowitz, 1992; Thomas, 1996). Most research has focused on the microsystem (Bronfenbrenner, 1993; Gabarino & Abramowitz, 1992).

At the microsystem level, a researcher can best understand a child’s behavior by learning about children’s interaction with people and the activities in which the children engage (Bronfenbrenner, 1993). Bronfenbrenner adopted the term “microsystems” to reflect his conviction that behavior settings provide the smallest unit of analysis (micro) and that the three most significant components of a setting (activities, roles, interpersonal relationships) form an interacting behavior field, in which a change in one component
could affect the entire configuration and produce a new meaning for the child (Thomas, 1996).

The next level of analysis is the mesosystem. The mesosystem consists of relations between microsystems (Bronfenbrenner, 1979). This level looks at relation of family experiences to school experiences, school to church, family to peers, etc. One example may be that a child who experiences parental rejection may have difficulty in school. Conversely, certain peer influences at school may cause family turmoil. The mesosystem is less tangible and concrete than the microsystem (Thomas, 1996).

The next level of analysis is the exosystem. The exosystem involves experiences in a social setting in which an individual does not have an active role but which nevertheless influence experience in an immediate context (Bronfenbrenner, 1979). One example is a parent’s job experiences (travel requirements, job stress, amount of pay) affecting family life which, in turn, affects children. In an even more removed context, governmental agencies funding patterns can affect parks, libraries, and schools that create microsystem environments.

Overarching the exosystem is the macrosystem. The macrosystem is composed of the broad ideologies, attitudes, laws and customs of the culture in which individuals live (Bronfenbrenner, 1979). For example, individuals living in the United States will be affected by the culture’s Judeo-Christian ethic, belief in democracy, and their ethnic background.

Bronfenbrenner (1993) added an additional system, the chronosystem, which is the patterning of environmental events and transitions over the life course. Divorce,
frequent moves, job loss, career changes and sociohistorical conditions are part of the chronosystem.

Understanding the interaction between the individual and his or her environment in development is no easy task. In fact, it is so difficult that most researchers do not try to handle both parts of the equation at once or even analyze multiple microsystems at once. Thus a researcher is rarely able to really look at the interplay of nature and nurture in development (Garbarino & Abramowitz, 1992). Despite the difficulties faced by researchers trying to operationalize this theory, ecological theory can be used to understand the nature of bullying in schools (Swearer & Doll, 2001).

When the ecological perspective is applied to bullying, a bullying interaction occurs not only because of the individual characteristics of the child who is bullying or being bullied, but also because of the actions of peers, teachers and other adult caretakers at school, as well as the physical characteristics of the school grounds, family factors, cultural characteristics, and even community factors. Graphically, this ecological system can be depicted with Bronfenbrenner’s classic diagram resembling a target, with the child at the center and concentric circles representing contexts from those closest to the child to those furthest away. In the context of this study of the ecological phenomenon of school bullying, this research focuses on the interplay between the student and the contexts of family, peers, teachers and staff, school policies, and the physical setting of the school. Appendix B provides a graphical representation of Bronfenbrenner’s ecological system applied to a classroom system.
Definition of Bullying

Bullying is one of the most common types of school violence (Flannery & Singer, 1999). Aggressive incidents in school span a wide continuum ranging from frequent verbal threats to the rare homicide (Batsche & Knoff, 1994). Although past research has advanced our understanding of aggression, it has been mostly limited by its focus on overt aggression (for exceptions see Crick & Bigbee, 1998; Crick & Grottpeter, 1995). Thus, bullying behaviors characteristic of early adolescents, including verbal threats and teasing, are less understood.

Bullying has long been viewed as a relatively harmless form of social interaction and accepted as a normal part of growing up. In fact, although there were isolated studies of bullying before the 1970s, the systematic study of the phenomenon does not appear in the literature until 1978, with the publication of Aggression in schools: Bullies and whipping boys, by Dan Olweus (the book was published in its original Swedish version in 1973). Since Olweus’ first publication, many articles on the topic of bullying refer to the definition Olweus used in his research. The Olweus definition is a two-part definition, which emphasizes that bullying behavior must occur over time and that there is a power imbalance between the victim and the bully. Also interesting, from a historical perspective, is that most of the research to date has focused on direct forms of bullying, such as physical and verbal attacks, and less on relations or indirect bullying, such as ostracism (Harachi, Catalano, & Hawkins, 1999; Smith, 2004).

There is no widely agreed-upon definition of school bullying, but most researchers agree that bullying involves a child being repeatedly exposed to negative actions by one or more peers (Arora, 1996) and that these actions are generally
unprovoked (Olweus, 1991). Bullying involves recurring exposure to negative actions by one or more individuals that involves an imbalance of power. The power imbalance can result from age, physical difference and difference in numbers (Olweus, 1991, 1993). Researchers have distinguished different types of bullying behaviors as physical (hitting, kicking, shoving), verbal (name calling, abusive language, taunting) and indirect or relational bullying (spreading rumors, manipulation of friendships, exclusion, ostracism, and ignoring) (Sullivan, 2000). Although bullying is generally not a criminal activity, such as assault with a weapon or assault leading to serious bodily harm and requiring the involvement of law enforcement agencies, it is not playful teasing, a fight between equals, or play-fighting with no intention to harm (Sullivan). Bullying is the assertion of power through aggression, and only its forms change with age: playground bullying, sexual harassment, gang attacks, date violence, assault, marital violence, child abuse, workplace harassment, and elder abuse (Pepler, Connolly, & Craig, 1997).

Students Involved in Bullying

Characteristics of victims.

Much research has attempted to identify factors that place a child at risk of becoming a victim of bullying. On surveys, boys and girls are equally likely to report being victimized (Charach, Pepler, & Ziegler, 1995). Olweus (1978) has suggested that children who are victims of bullying often lack social skills and the ability to defend themselves or to retaliate against bullies. The typical victim of bullying is more anxious and insecure than his or her peers (Olweus, 1997). Physical weakness, negative body language, immaturity, or physical differences have been described as characteristics of victims, and as Froschel and Gropper (1999, p. 73) observe, “The perception of
‘difference’ is at the root of teasing and bullying among young children. Almost any perceived difference – gender, race, ethnicity, language, social class, disability, sex – can become fodder for hurtful words and actions.” It is important to note, however, that research has not supported the popular stereotype that victims have unusual physical traits (Olweus, 1991). Research supports the notion that for students in earlier grades, victims are usually younger and physically weaker, and that younger students experience more direct bullying, whereas older students experience more indirect bullying (Olweus, 1993).

Physical condition becomes less of a risk factor for being bullied as students get older (Ma, 2001). The following characteristics were most frequently selected by a panel of experts in bullying to describe children who are most often bullied: perceived lack of control of the environment; poor social and interpersonal skills; less popular than other students; feelings of inadequacy; blame problems on themselves; socially isolated; and fear going to school (Hazler, Carney, Grenn, Powell, & Jolly, 1997). For some children the characteristics discussed above may be present before bullying occurs; for others they may develop as a result of bullying.

**Characteristics of bullies.**

There is not a single type of bully. The identified characteristics of bullies have been identified primarily through research on boys who bully, and as a result less is known about girls who bully.

On surveys more boys report bullying than girls, but the discrepancy between boys’ and girls’ rates of bullying is not as great in playground observations (Craig & Pepler, 1997). Bullies have been identified as generally being older than their victims,
dominant individuals, and as having a positive attitude towards violence (Olweus, 1997; Sullivan, 2000). These students generally have low levels of anxiety, are relatively secure, and have average self-esteem (Olweus, 1997). Students who act as bullies appear to enjoy harassing the same classmates over a long period of time (Walls, 2000); seem to gain satisfaction from the pain of their victims; and have little empathy or concern for the student being victimized (Olweus, 1997). Although boys who are victims generally identify an individual as the bully, the bully's behavior is frequently sustained by a supporting group (Olweus, 1997; Rigby, 1996).

Bullies are often described as oppositional toward adults, antisocial, and more likely to break school rules (Batsche & Knoff, 1994; Olweus, 1993, 1997). They are also characterized by impulsivity and a need to dominate (Olweus, 1997). Bullies often have parents or guardians who use physical punishment, and generally relationships between the parent and child are poor (Banks, 1997; Olweus, 1993; Roberts, 2000). In a survey of experts in the area of bullying, the most frequently selected descriptors of bullies included: controlling through use of verbal or physical behaviors; quick to anger; more likely to use force; a tendency to have little empathy for victims; likely to be exposed to models of aggression; and more prone to inappropriately perceive intent of others to be hostile (Hazler et al., 1997). Children that bully often come from homes that are sometimes hostile and rejecting, or are both hostile and permissive. Parents of children that bully frequently model poor problem solving skills and react to the least provocation (Greenbaum, Turner, & Stephens, 1989).
Characteristics of bully/victims.

Some of the most severely victimized children also exhibit the most aggressive behaviors (Perry, Kusel, & Perry, 1988). Olweus (1978) was the first to describe passive and provocative victims. Passive victims appear to do nothing to initiate attack and fail to defend against attacks. These constitute the majority of victims. Provocative victims appear quick to anger, restless, fight back when attacked, and exaggerate angry responses. Behaviors of provocative victims have been described as impulsive and disorganized and may tend to provoke or irritate peers (Olweus, 1978). The provocative victim and the bully differ in that the bully’s aggressive behaviors are controlled, organized, and goal oriented (Schwartz, Proctor, & Chien, 2001). Provocative victims have subsequently been identified as “bully/victims” (Boulton & Smith, 1994). Provocative victims or bully/victims account for a small number of bullied children; they generally have a learning disability and lack social skills, causing them to be insensitive to other students. Observational studies have led researchers to speculate that bully/victims tease and annoy classmates until someone lashes out at them (Goleman, 1995; Olweus, 1997). The use of the newer term makes it clear that these victimized students also bully others.

Methods of Assessing the Prevalence of Bullying

The most popular method for measuring bullying has been the anonymous self-report (Ahmad & Smith, 1994; Borg, 1999; Olweus, 1993; Smith, 2004; Fekkes, Pijpers, & Verloove-Vanhorick, 2005; Whitney & Smith, 1993). Anonymous self-report surveys fall into two categories – the survey definition measure and the survey list measure.
A review of recent research identifying students as bullies, victims or bully/victims using self-report measure showed that a majority (7 of 10) used the Olweus Bully/Victim Questionnaire or a subset of questions from it (Schwartz, Proctor, & Chien, 2001). In the Olweus survey, as in other definition surveys, students are provided with a definition of bullying prior to survey completion. Frequency of victimization is determined by the following response choices: once or twice in the last two months, two or three times each month, about once a week, several times a week (Ortega et al., 2000).

The survey list measure of bullying provides respondents with a list of behaviors they have participated in or been a victim of. An example of such a scale is the Bullying-Behaviour Scale, which consists of six forced choice items, three of which refer to being the perpetrator of negative physical actions (i.e., hit and pushed, picked on, bullied) and three of which refer to being the perpetrator of negative verbal actions (i.e., teased, horrible names, laughed at). Similarly, there are six forced choice items that refer to being the victim of negative physical and verbal actions. In this manner, the researcher can determine if the respondent has bullied, has been a victim, or falls in the victim/bully category (Austin & Joseph, 1996).

In addition to survey measures, there are peer and teacher nomination techniques. The peer nomination procedure entails measuring group members’ perceptions about fellow students to assess students’ peer relationships (Crick & Grotpeter, 1995; Graham & Juvonen, 1998; Schwartz, Dodge, Pettit, & Bates, 1997; Schwarts & Proctor, 2000). Teacher nomination procedures are similar to the peer nomination techniques, but in this case the teacher is asked to focus on the students in the class and rate their behavior (Leff, Kupersmidt, Patterson, & Power, 1999; Monks, Smith, & Swettenham, 2003).
Finally, researchers have used observational studies to measure bullying. Naturalistic observations of students in school settings in person and with video cameras and remote microphones have also been used to study bullying (Atlas & Pepler, 1998; Menesini, Melan, & Pignatti, 2000; Rigby, 1996).

Prevalence of Bullying

Bullying is one of the most common forms of victimization at school (Flannery & Singer, 1999). Research indicates that every year as many as 4.8 million U.S. students are threatened physically, verbally, or indirectly by other students (Shakeshaft, et al., 1995). In a recent U.S. study of 338 children in grades 3 through 8, 78% reported being bullied within the last month, with approximately 6% of these children indicating that the bullying was severe (Walls, 2000). In a 1999 survey, about 13% of 12- to 18-year-old students indicated they had been called a derogatory word related to their race or ethnicity, religion, disability, gender, or sexual orientation, and 36% of students claimed they had seen this type of graffiti at school. This type of bullying occurs equally in urban, suburban, and rural schools. Female students report being targets of derogatory words more than male students, and Black students are more likely than White or Hispanic students to report being called hate words (Kaufman et al., 2000).

In general, researchers have found that more boys than girls bully others (Batsche & Knoff, 1994; Olweus, 1993, 1997; Rigby, 1996; Smith, 2004; Whitney & Smith, 1993). In terms of being bullied, in some studies girls more frequently report being bullied than boys (Rigby, 1996), whereas in other studies a somewhat higher percentage of boys report being victims of bullying (Delfabbro et al., 2006; Olweus, 1997). This dichotomy may be due to differences in the type of bullying that is experienced. Indirect
bullying (excluding someone from being a part of activities) is proportionally higher among girls, whereas physical bullying is higher for boys (Ahmad & Smith, 1994; Olweus, 1997; Rigby, 1996; Smith & Sharp, 1994).

In another recent U.S. study, a survey administered to a representative sample of nearly 16,000 students, in grades sixth through tenth, in public and private schools, nearly 30% of the sample reported moderate to frequent involvement in bullying - 13% reporting being bullies, 10.6% reporting being victims, and 6.3% reporting being engaged in both (Nansel et al., 2001).

Background on Middle Schools

The middle school is a fairly recent development. Elementary schools (grades one through eight) and high schools (grades nine through 12) were the academic settings in place at the turn of the century. However, the National Education Association along with other educational organizations favored restructuring the existing academic structures to better serve the needs of young adolescents (Manning, 2000). A report published in 1913 criticized the eight-year elementary school as not meeting the needs of the adolescent (Hechinger, 1993). In addition to criticism from educational organizations, increasing numbers of adolescents were dropping out of school without completing all of the eight elementary grades, and particularly before completing seventh and eighth grade (Hechinger). The issue of the high dropout rate had not been a significant concern previously, because there were an abundance of jobs available to persons without formal education. However, the availability of such jobs changed as the economy changed, and the number of unemployed youth became a national economic concern. The result was the institution of junior high school (consisting of grades seven
through nine) as the first middle schools specifically designed to meet the education needs of young adolescents (Hechinger).

The purpose of the schools was to provide academic programs for students who were college-bound, as well as to provide vocational training for students who would go directly into the job market. Eventually, meeting the unique social, personal, and academic needs of adolescents became part of the role of junior high school. The ability of junior high schools to meet the needs and interests of young adolescents was questioned. The criticism focused on the perception that the original junior high school became a “sorting agency, preparing the academic elite for the universities and others for opportunities in the marketplace, thus creating academic and vocational or commercial tracks” (Hechinger, 1993, p. 536). As a result, support for the junior high school decreased in the 1930s. Criticisms of the junior high school structure resulted in the emergence of the middle school, with the first middle school being established in 1950. The middle school program was proposed to fulfill the developmental needs of the young adolescent (Hechinger).

Today, the middle school system is under criticism. Some researchers have found that many adolescents are in schools that lack a sense of community, lack intimate contact with caring adults, and have not fostered the development of critical reasoning and higher order thinking (Eisner, 1991; Quattrone, 1990). In addition, researchers have criticized the middle school for not addressing specific developmental issues such as gender issues, conflicts with teachers and rules, developing a sense of competency and identity exploration, developing autonomy, forming peer relationships, and increasing
orientation to peers (Eccles, Midgley, Wigfield, Reuman, & MacIver, 1993; Manning, 2000; Simmons & Blyth, 1987).

Whether the criticism of middle schools is appropriate or not, the fact remains that the transition from elementary school to middle school can be a difficult one. The goals of elementary schools tend to be task oriented, whereas the goals of middle schools tend to focus on performance (Akos, Creamer, & Masina, 2004; Midgley, Anderman, & Hicks, 1995). Middle school teachers tend to have many students for short periods of time; hence, the student-teacher relationship changes from elementary to middle school (Feldlaufer, Midgley, & Eccles, 1988). Associated with the change in student-teacher relationships is a change from small-group and individual instruction to whole-class instruction in the intermediate-level schools. Researchers have found declines in student self-perception and self-esteem associated with the transition from elementary school to intermediate-level school (Seidman, Allen, Aber, Mitchell, & Feinman, 1994; Wigfield, Eccles, Maclver, Reuman, & Midgley, 1991). Seidman et al. (1994) found the decline in self-perception to be independent of age, grade level, and ability level.

In one study, student perceptions of the transition from elementary to middle school were sought. Students reported concern with the new rules and procedures (e.g., “What is the consequence for being late?”), concern with schedules (e.g., “Do sixth graders get to do chorus? Do they get to play basketball in gym class?”), concern with the workload and grades, lockers, extracurricular activities, recess, teachers, and violence and safety issue (“What happens if you threaten to hurt a teacher? Do people kill people in middle school?”) (Akos, 2002). In another study, other worries expressed by students included getting to class on time, finding lockers, keeping up with class work, finding
lunchroom and bathrooms, getting on the right bus home, getting through crowded halls, remembering which class to go to next, and the aggressive behavior of other students (Schumacher, 1998). Pellegrini and Bartini (2000) have suggested that aggression in the form of bullying is a strategy used by "low-ranking individuals" when they enter a new social structure, such as moving from elementary school to middle school (p. 718). Their findings indicated that bullying behaviors increase at this point, and once dominance is established by an individual, aggressive behaviors tend to decline. Indeed, youngsters making the transition to adolescence actually increase their use and endorsement of bullying behaviors (Crick & Werner, 1998; Pellegrini & Long, 2002).

**Sarasota County Profile**

The information on Sarasota county demographics is taken from the supplementary census survey and the 2002 Economic Census (U.S. Census Bureau, 2001; U.S. Census Bureau 2002). In 2001, Sarasota County had a household population of 329,000 individuals - 174,000 (53 percent) females and 155,000 (47 percent) males. The median age was 49.5 years. Seventeen percent of the population were under 18 years and 30 percent were 65 years and older.

For people reporting one race, 93% were White alone; 5% were Black or African American; less than 0.5% were American Indian and Alaska Native; less than 0.5% were Asian; less than 0.5% were Native Hawaiian and other Pacific Islander, and 2% were some other race. One percent reported two or more races. Five percent of the people in Sarasota County were Hispanic. Eighty-eight percent of the people in Sarasota County were White non-Hispanic. People of Hispanic origin may be of any race.
In 2001 there were 150,000 households in Sarasota County. The average household size was 2.19 people. Families made up 66% of the households in Sarasota County that year. This figure includes both married-couple families (52%) and other families (14%). Non-family households made up 34 percent of all households in Sarasota County. Most of the non-family households were people living alone, but some were comprised of people living in households in which no one was related to the householder.

Eleven percent of the people living in Sarasota County in 2001 were foreign born. Eighty-nine percent were native, including 22 percent who were born in Florida.

In 2001, 10% of people were in poverty. Nineteen percent of related children under 18 were below the poverty level, compared with 6% of people 65 years old and over. Eight percent of all families and 28% of families with a female householder and no husband present had incomes below the poverty level. Ten percent of the households in Sarasota County received means-tested public assistance or non-cash benefits.

In 2001, 88% of people 25 years and over had at least graduated from high school and 27% had a bachelor's degree or higher. Among people 16 to 19 years old, 10% were dropouts; they were not enrolled in school and had not graduated from high school.

The total school enrollment in Sarasota County was 53,000 in 2001. Preprimary school enrollment was 7,100 and elementary through high school enrollment was 37,000 children. College enrollment was 8,900. Additional demographic information can be found in the Sarasota County profile in Appendix C.

Sarasota County Middle School Profile

The source for the data on Sarasota County schools was the Florida Department of Education (2004). The total number of schools in Sarasota County is 46, of these six
are exclusively middle schools and two are combination schools. All schools in Sarasota County operate on the traditional school calendar, except one elementary school.

The middle schools in Sarasota County that participated in this survey are schools 0, 1, 2, 3, 4, 5, 6, 7. The two combination schools are schools 2 and 5. The students in all schools have performed well in statewide testing. School 0 had the poorest performance; Schools 1, 5, 6, 7 had the best scores. The combination schools were omitted from the data analysis, because there would not have been enough power to detect the effects of being a combination school. Only schools 0, 1, 3, 4, 6, 7 are used in the analysis. These are the traditional middle schools consisting of grades sixth, seventh and eighth. Appendix D shows a table of the performance on statewide testing of Sarasota County for these middle schools.

In 2003, the median number of students enrolled in middle schools in Florida was 1,036 students. For School 0 the number of students was 1,289. School 1 had 1,354; School 3 had 1,110; School 4 had 1,312; School 6 had 1,327; and School 7 had 705 students.

The state median percentage of out-of-school suspensions for middle schools was 14.4% in 2003. The percentage for the participating middle schools were as follows: School 0 had 18.2%; School 1 had 7.1%; School 3 had 4.7%; School 4 had 9.8%; School 6 had 3.7%; and School 7 had 15.5%.

In 2003, the state’s median percentage of middle school students who were absent over 20 days in the school year was 14.5%. In the same year the percentages in Sarasota county middle schools were as follows: School 0 had 10.5%; School 1 had 14.0%; School 3 had 12.6%; School 4 had 13.2%; School 6 had 8.5%; and School 7 had 11.1%.
In 2003, the state’s median percentage of middle school students eligible for free or reduced price lunch was 47%. In the same year the percentages in Sarasota county middle schools were as follows: School 0 had 64.9%; School 1 had 31.4%; School 3 had 34.10%; School 4 had 46%; School 6 had 17%; and School 7 had 11.1%.

In 2003, the state’s median percentage of middle school students in the school who are minorities (Black or African America, Hispanic, Asian, or Native America) was 33%. In the same year the percentages in Sarasota county middle schools were as follows: School 0 had 63%; School 1 had 19%; School 3 had 19%; School 4 had 16%; School 6 had 10%; and School 7 had 7%. Appendix E provides a table summarizing the profiles of middle schools in Sarasota County.

School Climate

Research addressing school climate and school learning dates over 50 years, and emerges from the theoretical and conceptual work that recognized that both the environment and its interaction with personal characteristics are important determinants of human behavior (Waxman, 1991). School climate research has its roots in both organizational climate research and school effects research, from which it has borrowed instruments, theory, and methods (Anderson, 1982). Since school climate can encompass a vast body of phenomena, there are problems in defining it. The definition of school climate varies by theoretical base of research, the variable studied, how the variables are measured, and the relationships that exist among variables (Anderson). Many researchers and educational administrators believe that school climate has a significant effect on the student and learning environment.
One didactic way of envisioning school climate is to use Tagiuri’s (1968) model (Appendix F). The model has four categories that incorporate an organization’s complete environmental quality. The first category of Tagiuri’s model is the physical and material environment. In a school setting, this would include, for example, the characteristics of the school buildings, the number of classrooms, and the size of the class or school, among others. The second category is the milieu, or the social dimension concerned with the members in the organization. In schools, this second category would include teacher characteristics, teacher morale, student morale, and characteristics of the student body. The third category is the social system. The social system encompasses the social dimension and is concerned with the patterned relationships of persons and groups. In a school setting this would include the roles played by students, teachers, and administrators, for example. The social system also focuses on administrative organization, instructional programs, teacher-student relationships, teacher-teacher relationships, community-school relationships, and administrator-teacher relationships. The fourth category deals with the social dimensions concerned with belief systems, values, cognitive structures, and meaning. This last category encompasses teacher commitment, peer norms, expectations, and consensus on curriculum. In the Tagiuri (1968) model, school climate results from the interaction of physical environment, milieu, social systems, and culture.

In spite of a general agreement that school climate should be studied, there is a lack of consensus on how to define it, and how it should be studied. Freiberg and Stein (1999) define school climate as “that quality of a school that helps each individual feel personal worth, dignity and importance, while simultaneously helping create a sense of
belonging to something beyond ourselves” (p. 11). Hoy and Hannum (1997) describe school climate as a global construct that researchers often use loosely to group together studies of school environment, learning environment, learning climate, sense of climate, sense of community, leadership, academic climate, and social climate. School climate is the school’s personality. It is a general term that refers to the student’s perceptions of the environment, and these perceptions influence the behavior of students (Welsh, 2000).

School climate can be assessed in a variety of ways. One way of assessing school climate is to use perceptual measures to determine how people view the climate. School climate can be measured in a student-centered manner (student perceptions), a teacher-centered manner (teacher perceptions), an administrative-centered manner (administrator perceptions), and/or community/parent centered (parent and community perceptions (Freiberg, 1999).

School climate can also be measured in a direct or an indirect manner. In a direct measure, a researcher interacts with others to collect data. Direct measures include surveys, classroom observations, interviews, video taping, journal narratives, student art, and focus groups (Freiberg & Stein, 1999).

School climate can also be measured in an indirect manner. These measures do not require direct interactions with the research subjects. Indirect measures include existing data sources, such as teacher, or administrative records. These records can be a rich source of data and can include attendance, visits to the nurse’s office, discipline referrals to the principal’s office, suspensions and expulsions, mobility rates, and teacher turnover rates, to name a few (Freiberg, 1999). Other types of indirect measures may include analysis of the physical presentation of buildings, hallways, and classrooms,
including the level of lighting, the colors present, and the use of vegetation around the facilities. Observation of the type of work displayed on bulletin boards, the presence or absence of graffiti, the ambient noise level in common areas (cafeteria, playground, hallways, etc.) also provide indirect measures of school climate (Freiberg, 1999; Freiberg & Stein, 1999).

Youth Risk Behavior Survey—Middle School

The Centers for Disease Control and Prevention (CDC) created the Youth Risk Behavior Surveillance System (YRBSS) in 1990. The purpose of the system is to focus on specific health-related behaviors among youth that contribute to the leading causes of death, disease, disability, and social problems in the United States (Kolbe, 1990; Kolbe, Kann, & Collins, 1993). Since 1991, the High School Youth Risk Behavior Survey (YRBS) is administered biennially to a national three-stage cluster sample as well as representative samples in states and territories. The data gathered with the survey are used to establish the prevalence of health-risk behaviors among high school youth, as well as determine age of initiation of some of the specific behaviors. The results of the surveys confirm that many risk behaviors are initiated earlier than high school. Consequently, more information was needed about the health-risk behaviors of younger adolescents (Fetro, Coyle, & Pham, 2001).

In 1995, the Middle School Youth Risk Behavior Survey (YRBS-M) was developed for use with middle school students. Due to the sensitive nature of some of the survey questions and local policies about parental permission (passive or active), few middle schools actually implemented the instrument (Fetro, Coyle, & Pham, 2001). Beginning in 1999, the Sarasota County School Board administered the YRBS-M
biannually. Additional questions were added to the YRBS-M by the Sarasota School Board, concerning issues such as smoking, consumption of alcohol, and visits to the dental hygienist (Pitt, McCormack Brown, & Reynolds, 2003).

Large surveys such as the YRBS, the YRBS-M, and the modified versions of YRBS-M, such as the one administered in Sarasota, are useful in providing prevalence estimates, and can be used to determine how certain characteristics are distributed in the population under study. However, large national/regional surveys have been conducted for the purpose of providing precise descriptive information and not for the purpose of building or testing complex theoretical models or exploring the complexity of multivariate and multisystem relationships.

The main strength of a survey is that it can be administered to a large number of people. Unfortunately, the efforts to maintain high reliability and minimize the time that is required to collect the data can be frustrating from the viewpoint of academic researchers. The use of such surveys limits the researcher in the following ways: decreases the number of questions that can be asked; curtails the use of open-ended questions or procedures that might be too time consuming or expensive; and reduces the number of response alternatives provided. In short, using a survey such as the YRBS-M to answer research questions based on an ecological framework is challenging. Lero (1988, p. 83) summarizes the dilemma: “… the ecological researcher who is interested in complex patterns of relationships within and between settings may find that in using a national survey she/he must continually struggle to reach the best compromise between depth and breadth, quantity and quality, and efficiency vs. richness of detail.”
For this study a modified YRBS-M was administered. This modified version included questions on bullying behaviors and questions on student perceptions of school climate.

Summary of the Literature Review

Bullying is one of the most common types of school violence (Flannery & Singer, 1999), and it can take the form of physical, verbal, or relational bullying (Olweus, 1993). Although consensus does not exist on the exact definition of bullying, most researchers agree that bullying involves a child being repeatedly victimized; that the abuse is unprovoked; and that there is a power imbalance, which favors the aggressor in the bully and victim interaction (Olweus, 1999).

When applying Bronfenbrenner’s ecological theory of human development to the problem of school bullying, the theory dictates that the school setting would have an effect on students’ behaviors. However, the influence of the school setting is not exerted by the “objective” nature of the setting, but instead the school setting influences student behaviors through the students’ perceptions of their school environment (Bronfenbrenner, 1979), what this study refers to as perceptions of school climate.

Middle schools are one school setting in which student perceptions of their school environment are evolving. Middle schools represent a time of transition, where educational expectations and practices change and the students must interact with more peers and teachers (National Middle School Association & National Association of Elementary School Principals, 2003). As a result of these changes, students in middle school must adjust to unknown roles, and some researchers have suggested that bullying
is a strategy some students may use as they enter this unfamiliar situation (Pellegrini & Bartini, 2000).

The following chapter will explain how the author analyzed the perceptions of school climate and bullying behaviors of middle school students in six Sarasota County, Florida public schools, within the framework of Bronfenbrenner’s ecological theory of human development. To collect data on the school climate variables and bullying behaviors, the researcher added questions regarding school climate perceptions and bullying to the YRBS-M, a survey tool developed to assess the prevalence of risk behaviors among middle school students (Fetro, Coyle, & Pham, 2001).
Chapter 3

Methods

This chapter describes the methods that were used in this study. It also describes the purpose of the study and the research questions; the study participants and the study setting; the qualitative and quantitative data gathering instruments; the data collection procedures; and the data analysis.

Purpose of the Study

Bullying is an important social issue that negatively affects a large number of students in schools (Batsche & Knoff, 1994; Nansel et al., 2001). To date, most of the research on bullying has focused on individual characteristics of students that make them likely to bully, be victims, or fall into the bully/victim category (Olweus, 1997; Swearer & Doll, 2001). Although the individual characteristics of a student unquestionably play a role on that student engaging in bullying behaviors, the interaction of these intrinsic factors and his or her context is less well understood (Swearer & Doll).

The primary purpose of this study was to analyze how student perceptions of school climate (for example, how they view their relationship with peers and faculty and how they feel about their role as students) relates to the self-reported prevalence of peer bullying among middle school students in six public schools in Sarasota County, Florida. This study assessed the prevalence of bullying in the sample and explored the types of bullying that occur most frequently. The study also investigated if the prevalence of each type of bullying varied according to school characteristics, or if it varied by grade or
gender. The study explored student perceptions of school climate, by ascertaining how
y they viewed their relationships with teachers and peers, their level of worry regarding
their role at school, their sense of ambiguity or comfort, their sense of belonging, and
their perception of parental involvement in the school. The extent to which these
perceptions vary from school to school or by grade or gender also were analyzed.
Additionally, as part of the process of pretesting the survey questions, teacher interview
data on perceptions of school climate and bullying in each of the six middle schools were
collected. The data obtained from the interviews were used to generate possible
explanations to the patterns obtained from the analyses of the student surveys. Whereas
the researcher attempted to obtain observational data of the school building, by
performing a walk-through of the school, the limited access to the schools, imposed by
the understandable safety concerns of school administrators, made these data limited or
absent, and therefore were not used in the study.

Research Questions

This study addresses the following research questions:

1. What is the prevalence of bullying in the sample?

2. What type of bullying occurs most frequently (physical, verbal, relational)?

3. Are there differences in type of bullying or victimization as a function of
   school, gender, ethnicity, or grade?

4. What are the perceptions of school climate among students in this sample?

5. Are there differences in school climate perception as a function of school,
   gender, ethnicity, or grade?
6. Do the dependent variables – school climate variables and school membership– have a significant relationship with students reporting being involved in bullying at all, as a bully or as a victim?

7. Does the combined effect of dependent variables– school climate variables and school (enrollment, absences, staff, percent of students classified as disabled, and percent free or school lunch) – explain the observed variation in students reporting being involved in bullying at all?

8. Does gender modify the observed effects of dependent variables on students reporting involvement in bullying at all, as a bully or as a victim? Effect modification occurs when the association between the independent variable and the dependent variable is affected by a third factor, in this case gender.

Appendix G summarizes the research questions.

Research Participants

Staff Interview Participants

As part of a service project conducted for the Sarasota County School District, staff interviews were conducted to gather information on staff perceptions of bullying in their schools and to pretest survey questions. The interview participants were professional staff (for example, middle school teachers, guidance counselors, school psychologists) from each of the six public middle schools in Sarasota County. Three interviews per school were planned. The interviews were scheduled through the school safety liaisons that work for the school district. The school safety liaison officers set up the interviews because they are in a position to interact with a number of middle schools, and as part of the team that administers the Youth Risk Behavior Survey (YRBS), they
are responsible for YRBS-related activities in the school district. The interviews consisted of asking the participant questions about the magnitude of the problem of bullying in their school and the factors affecting this problem. The interview was also used as an opportunity for the participants to provide feedback on the readability and face validity of the questionnaire. The feedback about the questionnaire was used to make revisions to the bullying and school climate items of the survey.

In addition to the interviews, the researcher attempted to conduct focus groups with teachers at each of the six participating schools. However, these focus groups did not take place because of the difficulty encountered in recruiting participants.

**YRBS-MS Survey Participants.**

The participants were sixth, seventh, and eighth graders in six middle schools in Sarasota, Florida who were taking the YRBS-M. There were 4593 surveys submitted by middle school students. Of these, 4119 surveys were completed. Because this study looked only at responses from students in traditional middle schools comprising grades sixth through eighth, who said that they had been truthful most of the time in answering the survey questions, 3178 respondents were ultimately included in the study. Due to partial completion of some surveys, the total number of respondents reported for individual survey items may vary. The age of students included in the study range from ten years of age to 16, with only 13 students reporting being ten years old and seven reporting being 16 years or older. Both the youngest and the oldest students were included. There were 1,668 girls (52.6%) and 1505 boys (47.4%). The sample consisted of 739 sixth graders, 1398 seventh graders, and 1028 eighth graders. The ethnicity of the respondents included 118 (3.8%) American Indian or Alaskan native; 53 (1.70%) Asian;
308 (9.9%) Black or African American; 327 (10.5%) Hispanic or Latino; 44 (1.4%) Native Hawaiian or Pacific Islander; and 2261 (72.7%) White. Table 1 presents a summary of the demographic data.

Table 1. Summary of Demographic Characteristics of Respondents

<table>
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</tr>
<tr>
<td></td>
<td>Hispanic or Latino</td>
<td>327</td>
<td>10.5</td>
</tr>
<tr>
<td></td>
<td>Native Hawaiian or Pacific Islander</td>
<td>44</td>
<td>1.4</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>2261</td>
<td>72.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3178</strong></td>
<td><strong>100</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Due to partial completion of some surveys the total N reported for individual survey items may vary.

Passive parental permission was obtained through the school district. Each student received a passive consent form from the school district, advising parents of the survey (Appendix H). All students in the sixth, seventh, and eighth grades, present on the day of the survey were encouraged to complete the survey, except for students whose parents requested their non-participation at the time of enrollment. The Sarasota County School District’s protocol for informed consent was followed for the service project component of the study, which consists of the development, pretesting, and administration of the survey. Prior to conducting the data analysis the researcher obtained approval from the Institutional Review Board (IRB) and complied with all
ethical rules and regulations for conducting the study (see Appendix P for IRB approval). There were no identifiers on the surveys. Surveys were saved as computer files.

Research Setting

Sarasota County is located in west central Florida, on the Gulf of Mexico. A profile of demographic characteristics of the county can be found in Appendix C. According to statistics published by the Florida Department of Education (2003), the number of students enrolled in Sarasota’s public schools grades six, seven, and eight was 9,573, in 2003-2003. The researcher gathered data from six public middle schools. These six schools had a combined student population of 7,097 students for that same school year.

Qualitative Data Gathering Instruments

Interview guide development.

The interview with school professional staff was used to gather information for two purposes. The first purpose was to have participants judge the quality of the bullying and school climate items in the survey, particularly focusing on the readability of the questions and whether or not the questions seem to constitute a reasonable method for gaining information regarding bullying and school climate perceptions from middle school students. Focus group interviews were also planned, but could not be completed due to difficulty in obtaining participants. A copy of the staff interview and focus group guides can be found in Appendix I.

Observational guide development.

In recent years there has been a growing awareness about how the physical environment affects human behavior, and a variety of studies have pointed to specific
physical environmental school conditions that affect student performance and behavior (Bosch 2002; Schneider, 2001; Tanner, 1999a). For the observational component of this study, the researcher attempted to take notes on a variety of physical environmental features in the school. Due to the limited access to the schools, however, imposed by the understandable safety concerns of school administrators, the researcher was unable to make these observations.

The physical characteristics of the school that would have been included in the checklist of physical characteristics have been reported to affect student behavior and performance (Tanner, 1999b). The entrance area should be a “friendly” space connecting the outside world to the inside world, while providing access control (Schneider, 2001; Tanner 2000). Tanner (1999a, 2000) also points to pathways being important. These should be clearly defined areas that allow freedom of movement among structures, including promenades that connect buildings to one another. Administration should also be centralized in one location, with offices grouped together and allowing for connection and experience (Earthman, 1998).

Green areas on campus, places outside where trees, grass, and gardens may be seen, with no cars or roads in view are also important (Tanner, 1999a). Other important aspects of the school physical environment are displays of student work, and the absence of graffiti and litter (Tanner, 1999b).

**YRBS-M – Quantitative Data Gathering Instrument**

As part of a service project with the Sarasota County School District, the author worked on a bullying and school climate needs assessment project. Questions on bullying and student perceptions of school climate were added to the YRBS-M. Using
items from two previous instruments, the author compiled the school climate portion of the survey. The school climate questions focused on student concerns about school (Freiberg, 1998) and feelings about school (Annenberg Institute for School Reform, 2002) and can be found in Appendix K. The bullying portion of the survey is designed to assess levels of physical, verbal, and relational bullying and victimization. A guide to the added questions, which provides iteration regarding what each item on the survey is intended to measure, is included in Appendices K and L.

One section of the survey assessed student perceptions of school climate. This section considered the top-ranked concerns of students entering middle school (Freiberg, 1998). In addition to these questions, items regarding general student perceptions about the school were also included (Annenberg Institute, 2002). Psychometric information was not available for either of these instruments. This is the case for school climate surveys appearing in the literature, because most of the surveys are used as part of a needs assessment process (Freiberg, 1999). The questions were selected to reflect the concerns of middle school students, particularly as they would relate to transition into middle school issues (Feldlaufer, Midgley, & Eccles, 1988; Freiberg, 1998; Midgley, Anderman, & Hicks, 1995). There were 25 school climate questions, each with five response options. These questions are numbered questions 70 through 94 in the survey. All responses were mutually exclusive and independent. Response options were strongly agree, agree, neither agree nor disagree, disagree, strongly disagree.

Another section of the survey assessed the prevalence of bullying activities. This section measured self-reported levels of bullying during the past 30 days using a version of the survey list. The bullying questions were items 14 through 23.
In the survey list measure, students were asked about the frequency of ten specific incidents. Five items relate to the respondent as a victim, and five items relate to the respondent as the bully. Physical victimization was measured by having students report how often they had been pushed, shoved, slapped, or kicked on purpose. Verbal victimization was measured by having students indicate how often they had been teased or called names and how often they had been threatened to be hit or hurt. Relational victimization was assessed by having students indicate how often other students had spread rumors about them and how often they had been excluded from activities by other students. Similarly, the five items designed to assess student involvement in bullying asked students to report the number of times in the past month that they have engaged in physical bullying, verbal bullying, and relational bullying. These items are similar to the items from the Physical, Verbal and Social Manipulation subscales on the Multidimensional Peer-Victimization Scale (Mynard & Joseph, 2000), but have been worded to take into account the social interactions that take place to differentiate between friendly teasing among friends and bullying. This differentiation is important, because as Swearer and Doll (2001) assert, in an ecological framework “bullying must be defined as a constellation of behavioral interactions” (p.11). They go on to explain that the definition of bullying must acknowledge “the constellation of critical features of the socio-ecological system that contributes to the occurrence of an incident of bullying” (p.12). In other words, bullying is not just a behavior. To label a behavior as bullying, the behavior has to be interpreted in context. For example, bullying is repeated over time; the bully must deliberately intend to hurt the victim; the bully’s action must be largely unprovoked; and there must exist an asymmetric power relationship between the
bullying is defined solely as a set of discrete behaviors (hit, shove, tease), it becomes possible to mislabel behaviors of name-calling, physical jostling, and verbal insults between friends. Researchers have observed that children will tolerate these behaviors from friends but will interpret and react to these behaviors differently if they come from someone outside their circle of friends (McConnell & Odom, 1986). The danger of mislabeling these rough play behaviors as bullying is real, because evidence suggests that children engage in these pretend conflicts, and that these pretend conflicts contribute to their social competence (Pellegrini, 1993; Pellegrini & Boyd, 1993; Pellegrini & Davis, 1993). To address the possible mislabeling of normal peer conflict as bullying, the researcher did four things. First the bullying questions were prefaced with a definition of bullying that emphasizes the following: 1) the imbalance of power that suggests this interaction is not between friends; and 2) the purposeful nature of the aggression. The actual definition used in the survey was: Bullying is anything from teasing, saying mean things, writing mean notes, or leaving someone out of the group, to physical attacks (hitting, pushing, kicking) where one person or a group of people picks on another person over and over again. Kids who are bullied have a hard time defending themselves. Second, the questions were asked in a manner that elicits from the student the number of times that the action has taken place over a period of thirty days, thereby distinguishing between the repeated negative actions of bullying and the occasional peer conflict. Thirdly, the questions were asked in a manner that takes into account the strong emotional reaction from the victim that bullying causes, for example, the student who is bullied may feel lonely, sad, scared, or embarrassed. Finally, the researcher created two
variables, bullying victimization and bullying aggression, by adding the variable within each category. Creation of these two composite variables, creates two variables that capture the frequency of each type of bullying as well as exposure to each type of bullying activity.

Two validity items were also included (“I am telling the truth on this survey” and “I am reading this survey carefully”). The first item has been used in the previous Sarasota YRBS-M, and both items have been used previously in a safe schools survey (Cornell & Loper, 1998). These two items were important, because school surveys have been criticized for being susceptible to careless and exaggerated reporting (Cornell & Loper; Furlong & Morrison, 1994). Additionally, one question was asked of students to determine whether or not they have been involved in a bullying prevention programs at school. This is question number 95 in the YRBS-M. See Appendix M for the YRBS-M.

Face validity and content validity.

The validity of a questionnaire concerns what the questionnaire measures and how well it does so. It tells the researcher what can be inferred from the scores (Loewenthal, 1996; Neuman, 1997).

Face validity was determined by asking a panel of middle school professional staff, including teachers, guidance counselors, and school psychologists, and a panel of middle school students whether or not the questions added to the survey can adequately and completely assess bullying and student perceptions of school climate. Face validity requires that the measure appears relevant to your construct to those you wish to measure. Face validity was established during the first rounds of pilot testing that are explained below.
Content validity refers to the extent to which the sample of questions in the survey are representative of the concepts they are intended to reflect (Aday, 1996; McDermott & Sarvela, 1999). Content validity is determined during the process of writing the survey questions, by seeing if independent judges agree that the items appear to be measuring what they are supposed to measure and that the response options are adequate (Loewenthal, 1996). Therefore, to establish content validity, a panel of experts was selected. The steps used in this study to establish content validity have been previously described (McKenzie, Wood, Kotecki, Clark, Brey, 1999). The first step consists of writing a draft of the survey questions. This was done after a thorough review of the literature and included questions from previously used surveys (Annenberg Institute for School Reform, 2002; Freiberg, 1999; Mynard & Joseph, 2000; Olweus, 1999).

The next step is to establish a panel of experts. A panel of eleven judges was selected to evaluate the added survey questions. Panel members were selected on the basis of professional preparation as health educators and/or middle school teachers, middle school counselors, evaluation/measurement experts, and researchers in the field of school bullying. Their expertise was defined by a combination of three factors: academic schooling and/or their work in the field of bullying; their publications and/or their roles in developing bullying policies for schools; and assessment by peers as an expert in the field. These criteria have been reported as reliable approaches to expert panel selection (Lutz, Saariluoma, Sanderson, & Scherbov, 2000). Additional criteria for panel selection were willingness to serve on the jury and the ability to complete the task in the time frame required.
Once the panel was selected, the qualitative review of the instrument took place. This process entailed providing the jurors with a packet of materials: 1) cover letter explaining the panel member tasks, thanking the panel members for their participation, and establishing a due date; 2) a copy of the draft instrument; 3) a list of questions to answer regarding the clarity, completeness, and brevity of the instrument, the appropriateness of the content, and the adequacy of the response items; 4) the objectives of the instrument; and 5) a self-addressed stamped envelope. During the qualitative review of the instrument, the researcher looked for consensus among the panel’s comments. Consensus that there was a problem with an item indicated that a change should be made.

As well as undertaking a qualitative review each panel reviewer was also asked to undertake a quantitative review that consisted of rating the appropriateness of each item by stating if each item is essential, useful but not essential, or not necessary. Once the panelist responses were compiled, the researcher summed the responses for each item and calculates the content validity ratio (CVR), according to a formula from Lawshe (1975). According to the formula the CVR is calculated as follows:

\[
\text{CVR} = \frac{n_c - \frac{N}{2}}{\frac{N}{2}}
\]

where:

\( n_c \) = number of panelists indicating “essential”

\( N \) = total number of panelists

The CVRs for each item are then compared to the levels necessary for statistical significance at \( p < .05 \). These CVR levels are provided by Venziano and Hooper (1997).
and McKenzie and colleagues (1999) and are listed in Appendix N. The results of the content validity ratio analysis for this study are included in Table 2.

Table 2. Content Validity Ratio Results for Bullying and School Climate Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Content Validity Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>During the 30 days, how many times did another student tease or call you names?</td>
<td>1</td>
</tr>
<tr>
<td>During the 30 days, how many times did another student threaten to hit or hurt you?</td>
<td>1</td>
</tr>
<tr>
<td>During the 30 days, how many times did another student spread rumors about you?</td>
<td>1</td>
</tr>
<tr>
<td>During the 30 days, how many times did other students not let you join in what they were doing?</td>
<td>0.8</td>
</tr>
<tr>
<td>During the 30 days, how many times did another student push, shove, slap, hit, or kick you on purpose?</td>
<td>1</td>
</tr>
<tr>
<td>During the 30 days, how many times did you tease or call another student names?</td>
<td>1</td>
</tr>
<tr>
<td>During the 30 days, how many times did you threaten to hit or hurt another student?</td>
<td>1</td>
</tr>
<tr>
<td>During the 30 days, how many times did you keep another student from joining in what you were doing?</td>
<td>0.8</td>
</tr>
<tr>
<td>During the 30 days, how many times did you push, shove, slap, hit, or kick another student on purpose?</td>
<td>1</td>
</tr>
<tr>
<td>My teachers expect that students treat each other with respect.</td>
<td>1</td>
</tr>
<tr>
<td>Teachers at this school are not interested in people like me.</td>
<td>0.8</td>
</tr>
<tr>
<td>My teachers take the time to listen to me when I have a problem.</td>
<td>0.6</td>
</tr>
<tr>
<td>My teachers treat students fairly.</td>
<td>0.6</td>
</tr>
<tr>
<td>My teachers give help in class when I ask for it.</td>
<td>0.6</td>
</tr>
<tr>
<td>There is at least one teacher or adult at this school I can talk with if I have a problem.</td>
<td>0.8</td>
</tr>
<tr>
<td>My teachers talk to me in a friendly way.</td>
<td>0.8</td>
</tr>
<tr>
<td>Teachers here respect me.</td>
<td>1</td>
</tr>
<tr>
<td>I worry about not making friends at school.</td>
<td>0.6</td>
</tr>
<tr>
<td>Students in my classes help one another when they need it.</td>
<td>0.6</td>
</tr>
<tr>
<td>Students in my classes get along with each other.</td>
<td>1</td>
</tr>
<tr>
<td>I know most of the students in my classes.</td>
<td>0.6</td>
</tr>
<tr>
<td>I get along with other students at this school.</td>
<td>1</td>
</tr>
<tr>
<td>There are clear consequences for breaking the rules at school.</td>
<td>1</td>
</tr>
<tr>
<td>There are clear rules at our school.</td>
<td>1</td>
</tr>
<tr>
<td>I can count on the adults at this school to listen to me.</td>
<td>0.8</td>
</tr>
<tr>
<td>I work hard on homework for in my classes.</td>
<td>0.6</td>
</tr>
<tr>
<td>I worry about failing at school.</td>
<td>0.6</td>
</tr>
<tr>
<td>My parents/guardians know what’s going on in my classes this year.</td>
<td>0.8</td>
</tr>
<tr>
<td>My parents/guardians know they can take part in school-related events such as parent nights and field trips</td>
<td>0.8</td>
</tr>
<tr>
<td>People here notice when I am good at something.</td>
<td>0.6</td>
</tr>
<tr>
<td>I participate in after-school activities at this school.</td>
<td>0.8</td>
</tr>
<tr>
<td>I wish I were at a different school.</td>
<td>1</td>
</tr>
<tr>
<td>I can really be myself at this school.</td>
<td>0.8</td>
</tr>
<tr>
<td>I feel like a part of this school.</td>
<td>1</td>
</tr>
</tbody>
</table>

* Expert Panel of 11 judges
Criterion and construct-related validity.

Criterion validity, which uses a standard or criterion that is known to indicate the construct accurately (Neuman, 1997), cannot be established, because there is no gold standard for measuring bullying or student perceptions of school climate.

The construct-related validity of a test is the extent to which the test is said to measure a theoretical construct or trait (Aday, 1996; Loewenthal, 1996). Construct validity tests whether a hypothesized association between the survey measure and a measure of the same concept or a different concept is confirmed (Neuman, 1997). Construct validity of the student perceptions of school climate questions were conducted.

The 25 questions that are part of the student perceptions of school climate portion of the YRBS-M are hypothesized to fall into six categories: relationships with teachers; relationships with peers; sense of ambiguity (sense of predictability); worries about student/adolescent role; sense of belonging; and perceptions of parental participation. The questions and the constructs they measure are listed in Appendix K.

To determine the construct validity for the student perceptions of school climate questions, the researcher utilized exploratory factor analysis (principal component analysis), a commonly used statistical approach for this purpose (Bartholomew, Steele, Moustaki, & Galbraith, 2002; McDermott & Sarvela, 1999). Developed as a means of identifying psychological traits, factor analysis refers to a variety of techniques that are particularly relevant in construct validation (Anastasi, 1988; Kim & Mueller, 1978).

In factor analysis, there are four basic steps: the data collection and preparation of the relevant covariance matrix; the extraction of the initial factors; the rotation to a terminal solution and interpretation; and the construction of factor scales and their use in
further analysis (Kim & Mueller, 1978). The SPSS statistical package (SPSS 12.0) was used for all four steps.

The results of the factor analysis indeed yielded six factors. The dimensionality of the 25 perceptions of school climate items from the Modified Middle School Youth Risk Behavior Survey was analyzed using principal components analysis. Three criteria were used to determine the number of factors to rotate: the interpretability of the factor solution, the scree test and Kaiser’s criterion. Based on the scree plot and Kaiser’s criterion six factors were extracted for rotation. Consequently, six factors were rotated using an oblique rotation procedure. Oblique rotation was selected over orthogonal rotation, because in the former, factors are allowed to correlate. The rotated solution, as shown on Table 3, yielded six interpretable factors: perceptions of teachers, sense of ambiguity/certainty, worries, peer relationships, sense of belonging, and home involvement. The results for the total variance explained are displayed on Table 4.
Table 3. Pattern Matrix of Six School Climate Factors

<table>
<thead>
<tr>
<th>Component</th>
<th>Teachers</th>
<th>Ambiguity</th>
<th>Worries</th>
<th>Peers</th>
<th>Belonging</th>
<th>Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC8</td>
<td>.753</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC4</td>
<td>.748</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC7</td>
<td>.744</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC5</td>
<td>.701</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC3</td>
<td>.698</td>
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<td></td>
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<td></td>
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<tr>
<td>SC16</td>
<td>.585</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC21 recoded for pca</td>
<td>.487</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC1</td>
<td>.444</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC6</td>
<td>.400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC14</td>
<td>.644</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>SC12</td>
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<tr>
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<tr>
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<td>SC17</td>
<td>.609</td>
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<td></td>
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<td></td>
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<tr>
<td>SC22</td>
<td>.534</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>


a Rotation converged in 18 iterations.
Table 4. Total Variance Explained by Six School Climate Factors

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sums of Squared Loadings(a)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Cumulative % of Variance</td>
</tr>
<tr>
<td>1</td>
<td>8.219</td>
<td>32.876</td>
</tr>
<tr>
<td>2</td>
<td>1.745</td>
<td>6.981</td>
</tr>
<tr>
<td>3</td>
<td>1.415</td>
<td>5.659</td>
</tr>
<tr>
<td>4</td>
<td>1.131</td>
<td>4.523</td>
</tr>
<tr>
<td>5</td>
<td>1.031</td>
<td>4.122</td>
</tr>
<tr>
<td>6</td>
<td>.958</td>
<td>3.834</td>
</tr>
<tr>
<td>7</td>
<td>.828</td>
<td>3.313</td>
</tr>
<tr>
<td>8</td>
<td>.825</td>
<td>3.300</td>
</tr>
<tr>
<td>9</td>
<td>.758</td>
<td>3.033</td>
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<tr>
<td>10</td>
<td>.701</td>
<td>2.802</td>
</tr>
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<td>11</td>
<td>.690</td>
<td>2.759</td>
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<tr>
<td>24</td>
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<td>25</td>
<td>.295</td>
<td>1.181</td>
</tr>
</tbody>
</table>

Instrument readability.

One way of assessing the suitability of materials is to use readability formulas. There are a variety of readability formulas available, such as Gunning FOG Readability Test (Gunning, 1952) and the Flesch-Kincaid Formula (Smith & Smith, 1994). In this study, the researcher used the Powers-Sumner-Kearl Formula (Johnson, 2002). This formula is the only one of the formulae suitable for material geared to children, primarily...
in the seven to ten year old age range. To employ this formula, the researcher selects samples of 100 words; calculates the average sentence length \((L = \text{number of words} \div \text{number of sentences})\); estimates the number of sentences to the nearest tenth, where necessary; counts the number of syllables per 100 words \((N)\); and calculates grade level by solving the following: \((L \times 0.0778) + (N \times 0.0455) - 2.2029\). Consequently, reading age equals \((L \times 0.0778) + (N \times 0.0455) + 2.7971\) years. The researcher had targeted for a fifth grade level readability and was not only dependent on the results of the readability formulas. The researcher also relied on the judgements about the survey’s readability made by teachers at the six middle schools.

In terms of readability formulas, different sections of the survey ranged in grade level from 4.076 to 6.003. Teachers at the six middle schools expressed their opinion that the survey was written at a level that was readable to the average middle school student in their classes.

*Test-retest reliability.*

The stability reliability of a survey measure refers to the reproducibility of measures of the same concept over time or across methods of gathering information (Aday, 1996). Thus, test-retest reliability reflects the instrument’s consistency at different points in time. Test-retest reliability is estimated by correlating the results of a test that has been administered at least twice to the same group of people (McDermott & Sarvela, 1999).

As a test of reliability, the bullying, perceptions of school climate portions of the survey, and questions 1 through 4 of the YRBS-M (age, sex, grade, ethnicity) were administered to a combination of sixth, seventh, and eighth graders \((N=30)\) from a school
not participating in the regularly scheduled middle school YRBS, in October 2003. The same students completed the same portions of the survey instrument a second time, approximately two weeks later.

The abbreviated version of the survey instrument, used to estimate test-retest reliability, consisted of four demographic questions, ten bullying questions, and 25 questions concerning student perceptions of school climate. These questions were items 1-4, 14-23, and 70-94 in the YRBS-M, in Appendix M.

Test-retest reliability was computed using Pearson correlation coefficients for interval-level data (age). The Spearman rank order coefficient was computed for ordinal level variables for the bullying questions and the perceptions of school climate items. For nominal level data (sex, grade, ethnicity), percentage agreement was calculated between the two sets of scores.

The correlation coefficients resulting from the analyses are a measure of the association between the responses given to a question at two points in time. The closer the resulting value of the coefficient is to 1, the more stable or consistent the indicator can be said to be at different points in time. A value of zero would indicate that the two variables are completely independent of each other. For the student perceptions of school climate variables, the researcher did not expect a strong correlation, because this phenomenon was expected to fluctuate substantially over time, which may result in reliability being underestimated. The variables relating to bullying behaviors were expected to be somewhat more stable over time, because the question refers to a 30-day timeframe, and the time between the first test and the second test was two weeks.
For age, the Pearson Correlation was 0.981, which was significant at the 0.05 level (2-tailed). For sex, grade, and ethnicity, the percentage agreement was 100, 96.66, and 86.66 respectively. The Spearman Rank Correlation results for the test-retest analyses are on table 5.

Table 5. Results for Test-Retest of School Climate and Bullying Variables

<table>
<thead>
<tr>
<th>Question</th>
<th>Spearman Rank Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>During the past 30 days, how many times did another student tease or call you names?</td>
<td>0.941**</td>
</tr>
<tr>
<td>During the past 30 days, how many times did another student threaten to hit or hurt you?</td>
<td>0.665**</td>
</tr>
<tr>
<td>During the past 30 days, how many times did another student spread rumors about you?</td>
<td>0.653**</td>
</tr>
<tr>
<td>During the past 30 days, how many times did other students not let you join in what they were doing?</td>
<td>0.902**</td>
</tr>
<tr>
<td>During the past 30 days, how many times did another student push, shove, slap, hit, or kick you on purpose?</td>
<td>0.765**</td>
</tr>
<tr>
<td>During the past 30 days, how many times did you tease or call another student names?</td>
<td>0.982**</td>
</tr>
<tr>
<td>During the past 30 days, how many times did you threaten to hit or hurt another student?</td>
<td>0.768**</td>
</tr>
<tr>
<td>During the past 30 days, how many times did you spread rumors about another student?</td>
<td>0.936**</td>
</tr>
<tr>
<td>During the past 30 days, how many times did you keep another student from joining in what you were doing?</td>
<td>0.993**</td>
</tr>
<tr>
<td>During the past 30 days, how many times did you push, shove, slap, hit, or kick another student on purpose?</td>
<td>0.582**</td>
</tr>
<tr>
<td>My teachers expect that students treat each other with respect.</td>
<td>0.806**</td>
</tr>
<tr>
<td>Teachers at this school are not interested in people like me.</td>
<td>0.730**</td>
</tr>
<tr>
<td>My teachers take the time to listen to me when I have a problem.</td>
<td>0.576**</td>
</tr>
<tr>
<td>My teachers treat students fairly.</td>
<td>0.855**</td>
</tr>
<tr>
<td>My teachers give help in class when I ask for it.</td>
<td>0.813**</td>
</tr>
<tr>
<td>There is at least one teacher or adult at this school I can talk with if I have a problem.</td>
<td>0.876**</td>
</tr>
<tr>
<td>My teachers talk to me in a friendly way.</td>
<td>0.859**</td>
</tr>
<tr>
<td>Teachers here respect me.</td>
<td>0.619**</td>
</tr>
<tr>
<td>I worry about not making friends at school.</td>
<td>0.931**</td>
</tr>
<tr>
<td>Students in my classes help one another when they need it.</td>
<td>0.916**</td>
</tr>
<tr>
<td>Students in my classes get along with each other.</td>
<td>0.672**</td>
</tr>
<tr>
<td>I know most of the students in my classes.</td>
<td>0.398 (not sig)</td>
</tr>
<tr>
<td>I get along with other students at this school.</td>
<td>0.824**</td>
</tr>
<tr>
<td>There are clear consequences for breaking the rules at school.</td>
<td>0.769**</td>
</tr>
</tbody>
</table>
Table 5 (Continued)

<table>
<thead>
<tr>
<th>Item</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are clear rules at our school.</td>
<td>0.765**</td>
</tr>
<tr>
<td>I can count on the adults at this school to listen to me.</td>
<td>0.752**</td>
</tr>
<tr>
<td>I work hard on homework for my classes.</td>
<td>0.786**</td>
</tr>
<tr>
<td>I worry about failing at school.</td>
<td>0.778**</td>
</tr>
<tr>
<td>My parents/guardians know what’s going on in my classes this year.</td>
<td>0.742**</td>
</tr>
<tr>
<td>My parents/guardians know they can take part in school-related events such as parent nights and field trips.</td>
<td>0.881**</td>
</tr>
<tr>
<td>People here notice when I am good at something.</td>
<td>0.739**</td>
</tr>
<tr>
<td>I participate in after-school activities at this school.</td>
<td>0.543**</td>
</tr>
<tr>
<td>I wish I were at a different school.</td>
<td>0.910**</td>
</tr>
<tr>
<td>I can really be myself at this school.</td>
<td>0.791**</td>
</tr>
<tr>
<td>I feel like a part of this school.</td>
<td>0.906**</td>
</tr>
<tr>
<td>I have been taught about not bullying at school.</td>
<td>0.664**</td>
</tr>
</tbody>
</table>

** Correlation is significant at p<.01 (two-tailed)

*Internal consistency reliability*

Within a test, individuals should respond in a consistent way. For internal consistency reliability estimation the researcher uses a single measurement instrument administered to a group of people on one occasion to estimate reliability. In effect, the reliability of the instrument is judged, by estimating how well the items that reflect the same construct yield similar results (Anastasi, 1988; Neuman, 1997). Statistically, reliability means that the responses should correlate with one another. One method for establishing internal consistency is calculating the Cronbach alpha coefficient (McDermott & Sarvela, 1999). The Cronbach alpha coefficients were calculated for all items within the perceptions of school climate subscales, which are relationship with teachers (items 70-77, 84, and 85 in YRBS-M); relationships with peers (items 76, 80, 82); home involvement (items 86, 88, 89, 91); and sense of belonging (items 90, 92-94). There are only two items that measure students’ sense of worry with regards to school
(items 78 and 87). For these two items and for the sense of ambiguity (items 81, 83) items, the researcher calculated a Spearman’s correlation coefficient.

The Cronbach alpha coefficient the school climate subscale relationship with teachers was 0.882. The Cronbach alpha coefficient for relationship with peers was 0.769. The Cronbach alpha for home involvement was 0.705. The Cronbach alpha for a sense of belonging was 0.749. These Cronbach alpha scores reflect that the subscales have good internal reliability, particularly in light that the scores for each item tend to be skewed to the right. The Spearman’s correlation coefficient for the two items that constitute the worries scale was .394 and the correlation coefficient is significant. The Spearman’s correlation coefficient for the two items that constitute the sense of ambiguity score was .356 and the correlation coefficient is significant. The Spearman correlation coefficients are not strong. However, this result is not surprising, because the correlation coefficient quantifies linear covariation only. A correlation analysis would not be as helpful if one variable increases as the other variable increases up to a point, and then one variable decreases as the increases further. In such a case, one might obtain a low value of r even though the two variables are strongly related.

Pilot testing of the survey instrument.

The researcher pilot tested the bullying and perceptions of school climate portions of the survey. This shortened instrument also included questions 1-4 of the YRBS-M (age, sex, grade, ethnicity).

The researcher pilot tested the instrument by administering the survey to sixth, seventh, and eighth grade students in school A. School A is an alternative school in Sarasota County, with an enrollment of 67 students. This school had a smaller teacher to
student ratio (1:4 compared to 1:20). This school also had a higher proportion of male students (56%). Additionally, the school had a higher proportion of Black and Hispanic students (40% Black or African American and 24% Hispanic). Additionally, most of the students at this school were eligible for the free or reduced lunch program (83%). In spite of how different this school was from the others, this middle school was the pilot testing site, because it was the only school available.

There were four rounds of pilot testing. In the first round of pilot testing, the researcher conducted semi-structured interviews with ten to 12 respondents to determine whether draft questions were clear, conveyed consistent meaning across respondents (including across grade levels), and explored whether the cognitive processes invoked by the questions matched the researcher’s objectives for those questions. The survey instrument did not need to be revised after the first round of pilot testing. The students involved in the first round of the pilot test were not involved in subsequent pilot testing.

For the next two rounds of pilot testing, the researcher administered an abbreviated instrument to the same group of 30 students on two different days, approximately two weeks apart. This group of students consisted of sixth, seventh, and eighth graders attending school A. With the data gathered from the pilot testing, the researcher calculated test-retest (for students who responded on both days, N=20 students). The researcher also reviewed internal consistency to see if questions that are supposed to measure the same concept indeed do.

The final pilot test took place with five students and consisted of the students taking the entire survey. This was used to see how long it would take the students to complete the survey and to see if there are any previously unencountered problems with
the format. Students completed the survey in 40 to 75 minutes. Students did not report any problems with the format.

Qualitative Data Collection and Procedures

Staff interviews data collection.

The staff interviews included both male and female professional staff, such as middle school teachers (sixth, seventh, and eighth grades), guidance counselors, and school resource officers. There were a total of 22 interviews (19 teachers, 2 guidance counselors, 1 school resource officer). Participants were recruited by the School Safety Liaisons, as required by the Sarasota County School District. There were to have been at least three interviews per school, but no participants were recruited from two schools.

Participants were briefed on the purpose of the study and on confidentiality issues. Participants were also informed that the researcher would take notes during the interview. The staff interviews began and were completed before the student survey (YRBS-M) was administered in December, 2003.

The staff interviews were conducted at each of the schools, in either one of the conference rooms, in the guidance office area, or in an available classroom. The interviews were conducted at a time the participant said it was convenient and lasted no more than fifteen to twenty minutes.

A semi-structured interview guide developed by the researcher was used to conduct the staff interviews. There were two purposes in conducting the staff interviews. First, the interview was an opportunity to obtain feedback about the readability and face validity of the bullying and school climate items in the survey. This part of the interview took the most amount of time, since the participant was asked to take a look at a sample
of survey questions and provide feedback. The feedback obtained included information on the appropriateness of the words used and suggestions on the survey layout that could affect readability, such as font type and size. Second, the interview was to elicit their impressions of what the magnitude of the bullying problem is in their school and to what they attribute the bullying.

To achieve the first purpose, the participants were given copies of the bullying and school climate items and were asked to determine if there were any problem words in the survey (Are there any words that you think might be difficult for some students to understand? Are there any alternative words or phrases you would use instead? Is there a word or set of words that better describes the intended meaning?). The participants were also asked if they thought that the students would read each word, because if a word is not read, the overall meaning of a question can be misinterpreted. Suggestions as to how to deal with such “lost” words were elicited, and as a result, certain words that were key in interpreting the meaning of question were typed using a bold face font. Finally, the participants were asked to give feedback on question construction and appropriateness of response options. The second purpose of the staff interviews was to elicit impressions of professional staff about what they felt was the magnitude of the bullying problem in their school and to what they attributed the bullying.

Observational data collection.

In performing an observational study, there are three roles that a researcher can take. The researcher can be a total participant, a participant-researcher, or a total researcher (Gribich, 1999). For this study’s observational component, the researcher had planned to be in the role of a total researcher. A total researcher is emotionally and
physically separate. The researcher planned to be in the research setting (at the schools) for a limited amount of time, watching and recording information in writing.

Although any observation of activities, events, behavior, dialogue, and the people were to be recorded, the focus of the researcher’s observations were to have been on the buildings, settings, and environment. To aid in the collection of data regarding the physical environmental conditions of the school, the researcher had planned to use the physical environmental school conditions checklist in Appendix J. However, due to understandable safety concerns by the schools, the observational activities were limited to watching a teacher in a classroom, and in some instances, the researcher was given a tour of the cafeterias and recreational facilities. Due to the limited amount of observational data obtained at each school, the data were not included in the analysis.

Quantitative Data Collection and Procedures

School profiles.

The researcher had planned to create a profile for each school, by administering a brief questionnaire to the principal or another administrator. The information requested in this questionnaire included student enrollment levels by grade, average class size, number of teaching faculty, number of non-teaching faculty, a variety of campus characteristics, and student gender ratio by grade. This questionnaire also asked for the number of male and female faculty, number of teaching faculty with five or less years of teaching experience at any school, and the number of teaching faculty with five or more years in the same school setting. The school profile instrument can be found in Appendix A. However, only three of the six schools returned a school profile, and of these, only one returned a completed version. As a result, the researcher obtained as much of the
information as possible from the Florida Department of Education website. This information was obtained for the 2002-2003 school year.

*Administration of the YRBS-M.*

As in previous years, the school district held an in-service training for a school contact from all participating schools at which the YRBS-M protocol for collecting data was described. At the time of enrollment, each student received a consent form from the school district, advising parents of the survey. On the day of the survey, approximately half the students enrolled in sixth and eighth grade and all the students in seventh were encouraged to participate, except for those students whose parents requested their non-participation. Only half the students in sixth and eighth grade participated, because these students were also scheduled to participate in another survey. School administrators at each school decided how to split the students into the groups taking surveys, and this information was not available to the School District or the researcher.

Classroom teachers administered the self-reported questionnaire to the students during a regular class period. Students recorded their responses using standard electronic answer sheets (bubble sheets or scantron sheets). Students placed completed surveys and answer sheets in a manila envelope. Classroom teachers gave all completed answer sheets and surveys to the school contact. The school contact gathered all the school surveys and returned them to the school district main office (Pitt, Brown, & Reynolds, 2003).
Qualitative Data Analysis and Techniques.

Analysis of staff interview data.

Staff interview data were not transcribed verbatim. Instead, the researcher relied on the notes taken during the interview process. The analysis of the staff interview data consisted of categorizing the responses in terms of the questions asked. Although this activity was done without verbatim transcripts, the categorization of the responses of interview participants by question was analogous to the open coding process, described by Anselm Strauss (1987). Once the data had been broken down into categories, further analysis of each category was undertaken to determine what the subcategories were. A brief summary of the interview responses follows.

The majority of teachers indicated that a single boy or a group of boys were the most common bullies of students in their classes, followed by both boys and girls and a group of girls. Some teachers felt that girls were becoming more aggressive, and thus, were becoming more likely to bully. Most bullies were thought to be in the same grade as their victims. Teachers additionally felt that students within one class, team, or pod were not as likely to bully each other as students from different classes, teams, or pods. All teachers interviewed said that students did not bully each other while he or she was present, so bullying was perceived to occur when students were minimally supervised. All teachers felt that physical and verbal bullying were the most prevalent forms of bullying among sixth graders, and relational bullying was most common among eighth graders.
In terms of the perceived frequency of students' intervention in bullying, most teachers believed that students occasionally intervened at school, whereas the majority did not know if students intervened on the way to and from school. Many felt that there was an increasing trend to report bullies, particularly bullies that physically harassed other students. One teacher attributed a higher rate of student intervention on an elementary school campaign called “Silence Hurts.” Teachers in general felt that they still intervened much more frequently than students did.

When teachers were asked to speculate about reasons for bullying, the overwhelming majority supported the notion that students bully their peers to feel powerful. Low self esteem was agreed to be a factor by over half of the respondents, while seeking attention, jealousy, boredom, family problems, and difficulties in school were also cited as possible reasons. Other causal factors for bullying included the need to feel in control, frustration, and low tolerance of differences. Peer pressure was also cited as a causal factor, particularly for students who bully other students to obtain acceptance by a “desirable” social group. Other teachers cited victim characteristics as causal such as poor dress, poor hygiene, fear and hesitancy, poor social relationships, and shyness.

Quantitative Data Analysis and Techniques

Data entry.

Once the completed surveys were obtained from the Sarasota County School Board Office, an optical scanner was used to read the answer sheets and format questionnaire data to an electronic file. The questions, statements, and items were precoded prior to administering the instrument. Each response category was assigned a numerical symbol to facilitate entry into EXCEL, SPSS, and SAS for data analysis.
Descriptive statistics and exploratory data analysis.

The first stage of the data analysis was to explore the data to determine if any specific patterns exist (McDermott & Sarvela, 1999; Neuman, 1997). At this stage the researcher looked at the descriptive statistics and exploratory data analysis that included univariate procedures and graphing. Exploratory data analysis is an approach to data analysis that postpones the usual assumptions about what kind of model the data follow with the more direct approach of allowing the data to reveal their underlying structure and model. It is important that researchers examine and explore these data thoroughly before proceeding to formal statistical methods. Until the researcher gains an understanding of the structures and relationships within the data, and identifies and resolves errors or other problems, it is unhelpful and often meaningless to undertake statistical tests or modeling, because inappropriate methods are likely to lead to misleading results. Because this survey was expected to generate large amounts of data, it may be difficult to understand the structure of these data without using some sort of visual aid. Suitable aids to visualizing data fall generally into the following categories: graphics and tables. Graphics, which give a visual image or picture of the structure of the data and the relationships within them, and tables, which facilitate comparison of values, frequency counts, and so on, between levels of factors, were used at this stage of the analysis. Descriptive statistics answered research questions one, two, and four.

Chi-square analyses.

The chi-square procedure is an exploratory statistic that gives the researcher a feel for the data. It assesses whether the differences between two proportions that occur are likely to be real or occur from chance. Chi-square is used to examine the relationship
between two nominal or ordinal variables simultaneously. In this study, chi-square statistics were used to address research questions three, five, and six, because the variables addressed by these questions are either ordinal or nominal in nature. The chi-square statistic is used to test the hypothesis of no association of columns and rows in tabular data. Chi-square is more likely to find significance if the relationship is strong, the sample size is large, and/or the number of values of the two associated variables is large. A p-value of 0.05 or less is commonly interpreted by social scientists as justification for rejecting the null hypothesis that the row variable is unrelated (that is, only randomly related) to the column variable (McDermott & Sarvela, 1999; Stokes, Davis, & Koch, 2000).

Multilevel Analyses.

Multilevel regression was used to address research questions seven and eight. The reason behind using multilevel modeling is that student bullying behavior at school is a function of individual student characteristics (including their perception of school climate) and school factors. One approach that could be used to analyze school climate factors that are associated with bullying behaviors is to focus entirely on student level data, thus ignoring the effect of school variation. Another approach is to aggregate student level data. Unfortunately, analyses using aggregated student data are prone to ecological fallacy. Ecological fallacy is a situation that can occur when an inference is made about an individual based on aggregate data for a group, in which aggregate-level results may substantially differ or even be the reverse of individual-level results (King, 1999; Umbach & Porter, 2001).
In addition to aggregating individual-level data, another approach is to address group level characteristics on a dependent variable by attaching the group level variables to individual level data and then analyzing the data with a regression procedure. This approach is flawed at several levels. First, analyzing the data with logistic regression violates the assumption that the observations are independent because the students for a particular school are probably more correlated with each other (within cluster correlation) than they are with students of a different school (between cluster correlation) (Umbach & Porter, 2001). Second, it assumes the effect of a school is constant for all students that attend (Kennedy, Teddlie, & Stringfield, 1993). Finally, the attachment of group level variables to an individual does not fully capture the effect of group level characteristics, which may result in a misestimation of the standard error and so lead to erroneous conclusions (Leyland & Goldstein, 2001).

Based on the potential pitfalls of not taking into account the different sources of variability in the data, the researcher proposes to use multi-level regression models in analyzing bullying behaviors. The researcher posits that bullying behaviors will be related to individual characteristics such as the students’ sex, ethnicity, age, and perceptions of school climate. In addition, the researcher argues that school-level attributes such as enrollment, organization for instruction, student teacher ratio, physical aspects of the campus, and having a policy against bullying will be related to bullying behaviors. The researcher also looked at grade-level attributes such as the number of students each the grade level and student gender ratio at the grade level.
Summary of the Methods

Within the framework of Bronfenbrenner’s ecological theory of human development, this study analyzed the perceptions of school climate and bullying behaviors of middle school students in six Sarasota County, Florida public schools. After performing a thorough literature review, the researcher compiled 10 questions about bullying behaviors and 25 questions about perceptions of school climate. After consulting with an expert panel to help establish content validity, the researcher pilot tested the perception of school climate and bullying questions with sixth, seventh, and eighth grade students from a public Sarasota school. The first round of pilot testing was used to help establish face validity. In the next two rounds of pilot testing, the researcher administered the survey instrument to the same group of 30 students, on two different days, approximately two weeks apart. With the data gathered from the pilot test, the researcher calculated measures of internal consistency and test-retest reliability. The final round of pilot testing consisted of 15 students responding to the complete survey, to make sure that the procedures, written instructions, survey questions, and coding used for the statistical analysis were logistically possible.

The full YRBS-M survey, including the perception of school climate and bullying items, was administered to sixth, seventh, and eighth grade students in six Sarasota County public schools. The students recorded their responses anonymously using standard electronic answer sheets. An optical scanner was used to read the completed answer sheets, and the resulting electronic file was entered and analyzed using EXCEL, SPSS, and SAS.
In addition to the survey data analyses, the researcher attempted to obtain data from the principals by means of a brief questionnaire. Had these questionnaires been uniformly answered and returned, they would have been used to create a profile of the each school, to be used as school level data. Instead, the researchers used data collected by the School District and submitted to the Florida Department of Education. The researcher also conducted interviews with professional staff from the schools, as well as conducting limited observations of each of the schools. The data from the staff interviews were used to make improvements to bullying and school climate questions, before the questions were ever showed to students. Some of the improvements included font size and use of bolding of key words in questions. Additionally, the data from the staff interviews, in combination with the school observations were used to provide possible explanations to patterns observed in the data.

To address the research questions presented in this chapter, the researcher analyzed the data using a variety of methodological techniques. These methods included descriptive and exploratory procedures, as well as multilevel regression.
Chapter 4

Results

This chapter presents the results of the tests of five hypotheses. The chapter is organized into four sections: (1) the research questions, (2) descriptive analysis, (3) results related to the research questions, and (4) summary of the results.

Research Questions

This study addresses the following research questions:

1. What is the prevalence of bullying in the sample?
2. What type of bullying occurs most frequently (physical, verbal, relational)?
3. Are there differences in types of bullying or victimization as a function of school, gender, ethnicity, or grade?
4. What are the perceptions of school climate among students in this sample?
5. Are there differences in school climate perception as a function of school, gender, ethnicity, or grade?
6. Do the independent variables – perception of school climate variables and school membership – have a significant relationship with students reporting being involved in bullying at all, as a bully or as a victim?
7. Does the combined effect of independent variables – perceptions of school climate variables and school level variables (enrollment, absences, staff, percent of students classified as disabled, and percent free or school lunch) – explain the
observed variation in students reporting being involved in bullying at all, as a bully or as a victim?

8. Does gender modify the observed effects of dependent variables on students reporting involvement in bullying at all, as a bully or as a victim? Effect modification occurs when the association between the independent variable and the dependent variable is affected by a third factor, in this case sex.

Descriptive analysis

There were 4593 surveys submitted by middle school students. Of these, 4119 surveys were completed. Because this study looked only at responses from students in traditional middle schools comprising grades sixth through eighth, who answered that they had been truthful in answering the survey questions, 3178 respondents were ultimately included in the study. Due to the partial completion of some surveys, the total N reported for individual survey items may vary.

The age of students included in the study range from ten years of age to 16, with only 13 students reporting being ten years old and seven reporting being 16 years or older. Both the youngest and oldest students were included in the study. There were 1,668 girls (52.6%) and 1505 boys (47.4%). The sample consisted of 739 sixth graders, 1398 seventh graders, and 1028 eighth graders. The ethnicity of the respondents included 118 (3.8%) American Indian or Alaskan native; 53 (1.70%) Asian; 308 (9.9%) Black or African American; 327 (10.5%) Hispanic or Latino; 44 (1.4%) Native Hawaiian or Pacific Islander; and 2261 (72.7%) White.

In 2003, according to a school accountability report (Department of Education, 2003), school 0 had an enrollment of 1,289 students. The percentage of students eligible
for free and reduced lunch was 69.4%, and the percentage of students that were categorized as minorities was 63%. In the present sample, there were a total of 524 respondents. There were 294 (56.2%) girls and 229 (43.8%) boys. There were 128 (24.5%) sixth graders, 251 (48.1) seventh graders, and 143 (27.4%) eighth graders. Students that reported being non-White comprised 62% of the sample.

According to the Florida Department of Education’s school accountability report (2003), school 1 had an enrollment of 1,354 students. The percentage of students eligible for free and reduced school lunch was 31.4%, and the percentage of students that were categorized as minority students was 19%. In the present sample, there were a total of 478 students. There were 262 (54.8%) girls and 216 (45.2%) boys. There were 66 (13.8%) sixth grade students; 172 (36.2%) seventh grade students, and 237 (49.6 %) eighth grade students. Students that reported being non-White students comprised 27% of the sample.

In 2003, school 3 had an enrollment of 1110 students. The percentage of students eligible for free and reduced lunch was 34.1 %, and the percentage of students categorized as minorities was 19%. In the present sample, there were a total of 546 students. There were 264 (48.4%) girls and 281 (51.5%) boys. There were 145 (26.6%) sixth graders, 215 (39.4%) seventh graders, and 186 (34.1%) eighth graders. Students that reported being non-white made up 23% of the sample.

In the same school year, school 4 had an enrollment of 1312 students. The percentage of students eligible for free and reduced lunch was 46%, and the percentage of students categorized as minorities was 16%. In the present sample, there were a total of 678 students. There were 350 (51.6%) girls and 328 (48.4%) boys. There were 131
(19.3%) sixth graders, 333 (49.4%) seventh graders, and 210 (31.2%) eighth graders. Students that reported being non-white made up 22.6% of the sample.

In 2003, school 6 had an enrollment of 1327 students. The percentage of students eligible for free and reduced lunch was 17%, and the percentage of students categorized as minorities was 10%. In the present sample, there were a total of 624 students. There were 324 (52.2%) girls and 297 (47.8%) boys. There were 180 (28.9%) sixth graders, 276 (44.2%) seventh graders, and 166 (26.6%) eighth graders. Students that reported being non-white made up 14.1% of the sample.

For the last school in the study, in 2003, school 7 had an enrollment of 705 students. The percentage of students eligible for free and reduced lunch was 11.1%, and the percentage of students categorized as minorities was 7%. In the present sample, there were a total of 328 students. There were 174 (53.0%) girls and 154 (47%) boys. There were 89 (27.1%) sixth graders, 151 (46.0%) seventh graders, and 86 (26.2%) eighth graders. Students that reported being non-white made up 13.4% of the sample.

Results Related to the Research Questions

Research question 1

Research Question 1: What is the prevalence of bullying in the sample?

To address the first research question, the researcher looked at the number of students that reported never having been bullied; the number of students that reported never bullying, and the number of students that reported never having bullied or been bullied.

In the sample, 66% of students reported never having been a victim of bullying. Being bullied was defined by five variables: (1) being teased or called names; (2) being
threatened; (3) having other students spread rumors; (4) being ostracized; and (5) being physically bullied.

When asked about being teased or being called names, 1208 (38%) of students reported never having been teased or called names. Most students fell in the category of reporting moderate levels of being teased or called names, with 1405 (44.2%) students reporting being bullied between 1 and 9 times in the past 30 days. Some students reported high levels of being teased and called names, with 558 (17.6%) students reporting being teased and called names ten or more times.

When asked if another student threatened to hit or hurt, 2191 (68.9%) students reported never having been threatened. Some students fell in the category of reporting moderate levels of being threatened, with 820 (25.8%) students reporting being bullied between 1 and 9 times in the past 30 days. A small percentage of students reported high levels of being threatened, with 162 (5.1%) students reporting being threatened ten or more times.

In response to the question about having other students spread rumors, most students reported having never experienced this type of bullying, with 1981 (62.3%) falling in this category. Some students fell in the category of reporting moderate levels of this form of bullying, with 1049 (33%) reporting that other students had spread rumors about them. A small percentage of students reported high levels of this type of bullying, with 143 (4.5%) students reporting that another student had spread rumors about them ten or more times in the past 30 days.

Most students reported that they had never been ostracized (phrased in the survey as “not let you join in”), with 2142 (67.4%) reporting that during the past 30 days no
students had prevented them from joining in activities. Some students reported moderate levels of being ostracized, with 861 (27.1%) students reporting that during the past 30 days another students had prevented them from joining in activities between 1 and 9 times. A small number of students reported high levels of ostracism, with 172 (5.4%) reporting that another student had prevented them from joining in activities ten or more times.

More than half of the students reported that they had never been physically bullied, with 1180 (50.7%) reporting that during the past 30 days no students had pushed, shoved, slapped, hit, or kicked them. Some students reported moderate levels of being physically bullied, with 1280 (40.3%) students reporting that during the past 30 days another students had been physically bullied between 1 and 9 times. A small number of students reported high levels of physical bullying, with 280 (8.8%) reporting they had been physically bullied by another student.

Nearly 78% of students reported never having bullied another student. Bullying was defined by five variables: (1) teasing or calling another student names; (2) threatening to hit or hurt another student; (3) spreading rumors about another student; (4) ostracizing other students; and (5) physically bullying other students.

Some students reported never teasing other students, with 1180 (37.1%) responding that they never teased or called another student names. Over half of the students reported that they had engaged in moderate levels of teasing, with 1614 (50.8%) reporting that they had teased or called another student names between one and nine times during the last 30 days. Some students reported that they had teased or called
another student names ten times of more in the previous month, with 378 (11.9%) responding that they had engaged in this type and level of bullying.

Most students reported never threatening other students, with 2232 (70.2%) responding that they never threatened to hit or hurt another student. A few students reported that they had engaged in moderate levels of threatening, with 785 (24.7%) reporting that they threatened another student between one and nine times, during the last 30 days. Fewer still, some students reported that they threatened another student ten times or more in the previous month, with 151 (4.8%) responding that they had engaged in this type and level of bullying.

Most students reported never spreading rumors about other students, with 2549 (80.2%) responding that they never engaged in this type of bullying. A few students reported that they had engaged in moderate levels of spreading rumors, with 547 (17.2%) reporting that they threatened another student between one and nine times, during the last 30 days. A small number of students reported that they spread rumors about another student ten times or more in the previous month, with 78 (2.5%) responding that they had engaged in this type and level of bullying.

A majority of students reported never ostracizing other students, with 2134 (67.1%) responding that they never kept another student from joining in what they were doing. A few students reported that they had engaged in moderate levels of ostracism, with 935 (29.4%) reporting that kept another student from joining in activities between one and nine times, during the last 30 days. Fewer still, some students reported that they ostracized another student ten times or more in the previous month, with 102 (3.2%) responding that they had engaged in this type and level of bullying.
Most students reported never physically bullying other students, with 1788 (56.3%) responding that they never pushed, shoved, slapped, hit, or kicked another student on purpose. A few students reported that they had engaged in moderate levels of physical bullying, with 1163 (36.6%) reporting that they had physically bullied another student between one and nine times, during the last 30 days. Fewer still, some students reported that they had engaged in physical bullying ten times or more in the previous month, with 218 (6.9%) responding that they had engaged in this type and level of bullying.

Research question 2

Research Question 2: What type of bullying occurs most frequently (physical, verbal, or relational)?

Physical bullying consists of pushing, shoving, slapping, hitting, or kicking another student on purpose. Being the aggressor in physical bullying was measured by one item in the survey: “During the past 30 days, how many times did you push, shove, slap, hit, or kick another student on purpose?” In the sample, 1788 (56.3%) students reported that they had never engaged in this behavior; 1163 (36.6%) reported engaging in this behavior less than ten times; and 218 (6.9%) reported physically bullying another student ten or more time during the past 30 days.

Being the victim of physical bullying was measure by one item in the survey: “During the past 30 days, how many times did another student push, shove, slap, hit, or kick you on purpose?” In the sample, 1611 (50.7%) students reported never having been physically bullied; 1280 (40.3%) reported having been physically bullied less than 10
times in the previous month; and 280 (8.8%) reported having been the victim of physical bullying ten or more time during the past 30 days.

The least common form of bullying in this sample was relational bullying. Being the aggressor in relational bullying was measured by two items in the survey: (1) During the past 30 days, how many times did you spread rumors about another student? And (2) During the past 30 days, how many times did you keep another student from joining in what you were doing? High levels of relational bullying meant that students bullied by both spreading rumors and ostracizing other students or by engaging in either spreading rumors or ostracisms more that 10 times in the past 30 days. Moderate levels of relational bullying meant that students engaged in either ostracizing and/or spreading rumors about other students between one and nine times in the past month. In the sample, 387 (12.2%) students reported high levels of relational bullying aggression; 1108 (34.9%) students reported moderate levels of relational bullying aggression; and 1897 (59.7%) never engaged in this type of bullying.

Being the victim in relational bullying was measured by two items in the survey: (1) During the past 30 days, how many times did another student spread rumors about you? And (2) During the past 30 days, how many times did another student keep you from joining in what you they were doing? High levels of being a victim of relational bullying meant that students were bullied by both having had rumors spread about them and by having been ostracized by other students or by having rumors spread or being ostracized more that 10 times in the past 30 days. Moderate levels of relational bullying meant the students were ostracized and/or had rumors spread about them by other students between one and nine times in the previous month. In the sample, 558 (17.6%)
students reported high levels of relational bullying victimization; 1108 (34.9%) students reported moderate levels of relational bullying victimization; and 1506 (47.4%) never having been a victim of this type of bullying.

In the sample, the type of bullying that occurred most frequently was verbal bullying. Being the aggressor in verbal bullying was measured by two items in the survey: (1) During the past 30 days, how many times did you tease or call another student names? And (2) During the past 30 days, how many times did you threaten to hit or hurt another student? High levels of verbal bullying meant that students bullied by both teasing and threatening other students or by engaging in either teasing or threatening more than 10 times in the past 30 days. Moderate levels of verbal bullying meant that students engaged in either teasing and/or threatening other students between one and nine times in the previous month. In the sample, 844 (26.6%) students reported high levels of verbal bullying aggression; 1232 (38.8%) students reported moderate levels of verbal bullying aggression; and 1088 (34.2%) never engaged in this type of bullying.

Being the victim in verbal bullying was measured by two items in the survey: (1) During the past 30 days, how many times did another student tease or call you names? And (2) During the past 30 days, how many times did another student threaten to hit or hurt you? High levels of being a victim of verbal bullying meant that students were bullied by both being teased and threatened or by being teased or threatened more than 10 times in the past 30 days. Moderate levels of verbal bullying meant the students were teased and/or threatened by other students between one and nine times in the previous month. In the sample, 855 (26.9%) students reported high levels of verbal bullying
victimization; 1233 (38.8%) students reported moderate levels of verbal bullying victimization; and 1081 (34.0%) never having been a victim of this type of bullying. Table 6 presents a summary of the prevalence data for relational, verbal, and physical bullying.

Table 6. Percent of Students Experiencing Bullying

<table>
<thead>
<tr>
<th>Type</th>
<th>Relational</th>
<th>Verbal</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>High</td>
<td>Moderate</td>
<td>None</td>
</tr>
<tr>
<td>Victimization</td>
<td>17.6</td>
<td>34.9</td>
<td>47.4</td>
</tr>
<tr>
<td>Aggression</td>
<td>12.2</td>
<td>34.9</td>
<td>59.7</td>
</tr>
</tbody>
</table>

Research question 3

Research Question 3: Are there difference in types of bullying or victimization as a function of school, gender, ethnicity, or grade?

To determine whether there was a relationship between the types of bullying or victimization and another categorical variable (school membership, gender, ethnicity, or grade), the researcher used the Pearson’s chi-square test. This test statistic is based on the idea of comparing frequencies experimentally observed to the frequencies one might expect by chance alone. The assumptions for the chi-square test were met.

There were significant differences in types of bullying victimization with respect to school membership. Being a victim of verbal bullying differed depending on school membership, Chi-square (10, N = 3169) = 39.77, p<.000. Reports of being a victim of verbal bullying were highest in school 0. There were no significant differences in the levels of reported relational victimization by school membership, Chi-square (10, N=3172) = 11.49, p<.321. Likewise, there were no significant differences in the levels of
reported physical bullying victimization by school membership, Chi-square (10, N = 3171) = 16.48, p < .087).

There were significant differences in the types of bullying aggression with respect to school membership. Reports of being the aggressor in verbal bullying significantly differed depending on school membership, Chi-square (10, N = 3164) = 53.51, p < .000. The highest levels of verbal bullying aggression were reported in school 0. Although it appeared that school 0 also had the highest levels of relational bullying aggression, there were no significant differences in the levels of relational bullying aggression by school membership, Chi-square (10, N = 3170) = 18.27, p < .052. There were, however, significant differences in the levels of reported physical bullying aggression by school membership, Chi-square (10, N = 3169) = 21.568, p < .017. School 4 had the highest levels of reported physical bullying aggression.

There were significant differences in types of bullying victimization with respect to sex. Boys were more likely to report being victims of verbal bullying, Chi-square (2, N = 3164) = 44.66, p < .000. Boys were also more likely to report being victims of physical bullying, Chi-square (2, N = 3166) = 120.14, p < .000. On the other hand, girls were more likely to report being victims of relational bullying, Chi-square (2, N = 3167) = 13.36, p < .001.

There were also significant differences in types of bullying aggression with respect to sex. Boys were more likely to report being aggressors in verbal bullying, Chi-square (2, N = 3159) = 54.05, p < .000. Boys were also more likely to report being the aggressors in relational bullying, Chi-square (2, N = 3165) = 11.13, p < .004. Boys were
also more likely to report being aggressors in physical bullying, Chi-square (2, N = 3164) = 110.05, p<.000.

There were no significant differences in types of bullying victimization with respect to self-reported ethnicity. As for the rest of the analyses using the ethnicity variable, the variable was collapsed into a dichotomous variable of students identifying themselves as white and students identifying themselves as other than white. There were no significant differences in the level of reported verbal bullying victimization with respect to ethnicity, Chi-square (2, N = 3105) = 1.24, p<.238. There were also no significant differences in the level of reported relational bullying victimization with respect to ethnicity, Chi-square (2, N= 3106) = 1.651, p<.438. Likewise, there were no significant differences in the level of reported physical bullying with respect to ethnicity, Chi-square (2, N = 3105) = 4.96, p<.084.

There were significant differences in types of reported bullying aggression with respect to ethnicity. Reported verbal bullying aggression was higher among students that self-identified as being other than white, Chi-square (2, N = 3099) = 52.59, p<.000. Reported relational bullying aggression was also higher among students that self-identified as being other than white, Chi-square (2, N = 3103) = 13.28, p<.001. Similarly, reports of physical bullying aggression were higher among students that self-identified as being other than white, Chi-square (2, N = 3104) = 7.017, p<.030.

There were significant differences in types of bullying victimization with regards to grade membership. There was a significant difference between the level of reported verbal victimization and grade membership, Chi-square (4, N = 3156) = 10.394, p<.034. Eighth graders reported lower than expected levels of being victims of verbal bullying.
than would have been expected by chance alone. Both seventh and sixth graders reported higher than expected levels of bullying, with seventh graders showing the greatest departure from expected values. There were also significant differences in the level of relational bullying victimization, Chi-square ($4, N = 3159) = 19.04, p<.001$, with sixth graders having the highest levels of relational bullying victimization, and eighth graders having the lowest. Additionally, there was a significant difference in the level of physical bullying victimization, Chi-square ($4, N = 3158) = 16.28, p<.003$. Seventh grade students reported the highest levels of bullying victimization and eighth grade students reported the lowest.

There were significant differences in the level of bullying aggression with respect to grade membership. There were significant differences in verbal bullying aggression, Chi-square ($4, N = 3151) = 46.88, p<.000$, with eighth graders having the highest levels of verbal bullying aggression and sixth graders having the lowest. However, in terms of relational aggression and grade membership, there were no significant differences in the levels of bullying aggression reported, Chi-square ($4, N = 3157) = 4.015, p<.040$. With respect to physical bullying aggression and grade membership, there was a significant difference, Chi-square ($4, N = 3156) = 37.50, p<.000$, with seventh grade students reporting the highest levels of physical bullying aggression and sixth grade students reporting the lowest levels. Table 7 summarizes the results of grade membership and bullying.

Table 7. Grade Membership and Bullying

<table>
<thead>
<tr>
<th>Type</th>
<th>Bullying Aggression</th>
<th>Bullying Victimization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Highest levels</td>
<td>Lowest levels</td>
</tr>
<tr>
<td>Verbal</td>
<td>$8^{th}$ grade</td>
<td>$6^{th}$ grade</td>
</tr>
<tr>
<td>Relational</td>
<td>$7^{th}$ grade</td>
<td>$6^{th}$ grade</td>
</tr>
<tr>
<td>Physical</td>
<td>$7^{th}$ grade</td>
<td>$6^{th}$ grade</td>
</tr>
</tbody>
</table>
Research Questions 4 and 5

Research Question 4: What are the perceptions of school climate among students in this sample?

Research Question 5: Are there differences in school climate perception as a function of school, gender, ethnicity, or grade?

There were 25 school climate questions in the survey. These 25 questions reflected six dimensions of school climate perception. These were: (1) relationship with teachers; (2) sense of ambiguity/certainty; (3) worries; (4) relationships with peers; (5) sense of belonging; and (6) home involvement.

The dimension relationships with teachers consisted of nine survey items. These were as follows:

SC1 - My teachers expect that students treat each other with respect. (Question 70)
SC2 - Teachers at this school are not interested in people like me. (Question 71)
SC 3 - My teachers take the time to listen to me when I have a problem. (Question 72)
SC4 - My teachers treat students fairly. (Question 73)
SC5 - My teachers give help in class when I ask for it. (Question 74)
SC6 - There is at least one teacher or adult at this school I can talk with if I have a problem. (Question 75)
SC7 - My teachers talk to me in a friendly way. (Question 76)
SC8 - Teachers here respect me. (Question 77)
SC16 – I can count on the adults at this school to listen to me. (Question 85)

In response to “My teachers expect that students treat each other with respect,” almost half (1506, 47.4%) of students responded that they strongly agreed and only 177
(5.6%) students disagreed or strongly disagreed. Sixth graders were more likely to agree with this statement; whereas eighth grade students were the most likely to disagree, Chi-square (8, N = 3137) = 23.025, p<.003. Girls are more likely to agree with this statement, Chi-square (4, N=3144) = 33.90, p<000. Non-white students were more likely to strongly agree or strongly disagree. White students were more likely to have more moderate or neutral responses, Chi-square (4, N = 3084) = 11.08, p<.026.

When asked to indicate how students felt about the statement “Teachers at this school are not interested in people like me,” 1,627 (51.1%) students disagreed or strongly disagreed with this statement. There were 660 (20.8%) of the students agreed or strongly agreed with this statement. Eighth grade students were more likely to agree with the statement, and sixth grade students were the most likely to disagree, Chi-square (8, N = 3142) = 26.711, p<.001. Girls were more likely to disagree with this statement, Chi-square (4, N = 3150) = 12.71, p<.013. Students identifying themselves as being other than White were more likely to respond in the extremes (that they strongly agreed or strongly disagreed with the statement), while White students were more likely to respond using the more moderate or neutral response categories (agree, neither agree nor disagree, or disagree), Chi-square (4, N = 3088) = 19.57, p<.001.

In response to “My teachers take the time to listen to me when I have a problem,” 1,939 (61%) students agreed or strongly agreed with this statement. There were 530 (16.6%) students disagreed or strongly disagreed with this statement. Sixth grade students were the most likely to agree with this statement, and eighth grade students were the most likely to disagree, Chi-square (8, N = 3150) = 72.629, p<.000. There was no significant difference in how boys and girls responded to this statement, Chi-square (4, N
White students were more likely to agree, neither agree nor disagree, or disagree. Non-white students were more likely to respond using the extreme categories of strongly agree or strongly disagree, Chi-square (4, N = 3096) = 23.88, P<.000.

When asked to reply how students felt about the statement “My teachers treat students fairly,” 1,824 (57.4%) students agreed or strongly agreed with this statement. There were 608 (21.3%) that disagreed or strongly disagreed with this statement. Sixth grade students were the most likely to agree with this statement, whereas eighth graders were the most likely to disagree, Chi-square (8, N = 3150) = 88.61, p<.000. Girls were more likely to reply in a moderate or neutral manner, while boys were more likely to have strong feelings in either direction, Chi-square (4, N = 3154) = 20.37, P<.000. White students were more likely to be more moderate or neutral, while Non-White students were more likely to either strongly agree or strongly disagree, Chi-square (4, N = 3093) = 21.66, p<.000.

In responding to the statement “My teachers give help in class when I ask for it,” 2,326 (73.2%) students agreed or strongly agreed with this statement. There were 291 (9.2%) students that disagreed or strongly disagreed with this statement. Sixth graders were the most likely to agree with the statement, and eighth graders were the most likely to disagree, Chi-square (8, N = 3129) = 45.69, p<.000. Girls were more likely to reply that they neither agreed nor disagreed, while boys were more likely to either strongly agree or strongly disagree, Chi-square (4, N = 3137) = 19.48, P<.001. White students were more likely to respond by choosing the more moderate or neutral response
categories. Non-white students were again more likely to either strongly agree or strongly disagree, Chi-square (4, N = 3078) = 22.42, p<.000.

When given the statement “There is at least one teacher or adult at this school I can talk with if I have a problem,” 2,328 (73.3%) students agreed or strongly. There were 435 (13.7%) students that strongly disagreed. Sixth graders were the most likely to agree with this statement, and eighth graders were the most likely to disagree, Chi-square (8, N = 3145) = 35.01, p<.000. Girls were more likely to agree with this statement, Chi-square (4, N = 3153) = 14.19, P<.007. There was no significant difference in the way White and students identifying themselves as being of a non-White ethnicity responded to this item, Chi-square (4, N = 3091) = 8.76, p<.067.

In response to the statement, “My teachers talk to me in a friendly way,” a majority of students expressed a favorable opinion of the statement, “Teachers here respect me,” 2111 (66.4%) students agreed or strongly agreed. There were 327 (10.2%) students that disagreed or strongly disagreed. Sixth graders were the most likely to agree with this statement, and eighth grade students were the most likely to disagree, Chi-square (8, N = 3151) = 42.77, p<.000. Girls were more likely to have moderate or neutral feelings about this statement, whereas boys were more likely to strongly agree or strongly disagree, Chi-square (4, N = 3159) = 26.30, p<.000. Students identifying their ethnicity as being a category other than White were more likely to either strongly agree or strongly disagree with the statement, while students identifying their ethnicity as White were more likely to respond by selecting the more middle-of-the-road options, Chi-square (4, N= 3097) = 1533, p<.004.
A majority of students agreed with the statement, “Teachers here respect me.” There were 1,995 (62.8%) students that felt favorably about this statement. There were 368 (11.6%) students that disagreed or strongly disagreed with the statement. Sixth graders were the most likely to agree with this statement, and eighth graders were the most likely to disagree, Chi-square (8, N = 3138) = 72.59, p<.000. Girls were more likely to agree with this statement, Chi-square (4, N = 3146) = 22.06, p<.000.

Many students agreed with the statements, “I can count on the adults at this school to listen to me.” There were 1,770 (55.7%) students that favorably viewed this statement and 551 (17.4%) that disagreed or strongly disagreed. Sixth grade students were the most likely to agree with this statement, and eighth graders were the most likely to disagree, Chi-square (8, N = 3142) = 79.99, p<.000. Girls and boys did not differ significantly in their responses to this statement, Chi-square (4, N = 3150) = 7.68, p<.104. White students were more likely to agree, neither agree nor disagree, or disagree. Non-white students were more likely to strongly agree or strongly disagree, Chi-square (4, N = 3088) = 10.54, p<.032.

A second dimension of school climate perception is a sense of ambiguity/certainty. The questions that measured this dimension were as follows:

SC12 – I know most of the students in my classes. (Question 81)

SC14 – There are clear consequences for breaking the rules at school. (Question 83)

SC15 – There are clear rules at our school. (Question 84)

Most students agreed with the statement “I know most of the students in my classes.” There were 2,846 (89.6%) of students that agreed or strongly agreed and only 127 (4%) that disagreed or strongly disagreed. There were no significant differences in
the response to this statement by grade, Chi-square (8, N= 3154) = 8.91, p<.350. The responses given by girls did not differ significantly from those given by boys, Chi-square (4, N =3162) = 6.42, p<.170. White students were more likely to select the more moderate or neutral response options. Non-white students were more likely to strongly agree or strongly disagree, Chi-square (4, N = 3100) = 13.759, p<.008.

In response to the statement, “There are clear consequences for breaking the rules at school,” there were 2,460 (77.4%) students that agreed or strongly agreed with this statement and 236 (7.4%) that disagreed or strongly disagreed. Sixth grade students were the most likely to agree with this statement and eighth grade students were the most likely to disagree, Chi-square (8, N = 3144) = 45.80, p<.000. There were no significant differences in the responses given by girls and boys, Chi-square (4, N = 3152) = 6.41, p<.170. White students were more likely to select the more moderate or neutral responses, while Non-white students were more likely to strongly agree or strongly disagree, Chi-square (4, N = 3090) = 15.17, p<.004.

When asked how they felt about the statement “There are clear rules at our school,” 2,323 (73.1%) students agreed or strongly agreed and 306 (9.6%) strongly disagreed. Sixth grade students were the most likely to agree with this statement, and eighth grade students were the most likely to disagree, Chi-square (8, N = 3120) = 60.00, p<000. Girls were more likely to neither agree nor disagree, whereas boys were more likely to disagree with the statement, Chi-square (4, N = 3127) = 10.40, p<.034. There were no significant differences in the way White students and Non-white students responded to this statement, Chi-square (4, N = 3068) = 5.624, p<.227.
A third dimension of school climate perception is the level of worry a student senses. The two questions that measured this dimension were as follows.

SC9 – I worry about not making friends at school. (Question 78)
SC18 – I worry about failing at school. (Question 87)

When asked to respond to the following statement “I worry about not making friends at school,” 732 (23%) students agreed or strongly agreed and 1,851 (58.3%) disagreed or strongly disagreed. There were no significant differences in the responses given in reply to this statement by grade membership, Chi-square (8, N = 3133) = 5.75, p<.675. There were no significant differences in the responses given by sex, Chi-square (4, N = 3141) = 7.71, p<.103. Similarly, there were no significant differences in responses to this statement with respect to ethnicity, Chi-square (4, N = 3080) = 4.139, p<.388.

In response to the statement “I worry about failing at school,” 1,484 (46.7%) students agreed or strongly agreed and 1,167 (36.7%) disagreed or strongly disagreed. There were no significant differences in the responses given in reply to this statement by grade membership, Chi-square (8, N = 3130) = 14.910, p<.061. The responses given by boys and girls did not differ significantly, Chi-square (4, N = 3138) =2.45, p<.654. Students that identified themselves as non-White were more likely to agree with this statement, while White students were more likely to be neutral, disagree, or strongly disagree, Chi-square (4, N = 3076) = 63.28, p<.000.

A fourth dimension of school climate perception is relationship with peers. The three questions that measured this dimension were as follows:

SC10 – Students in my classes help one another when they need it. (Question 79)
SC11 – Student in my classes get along with each other. (Question 80)

SC13 – I get along with other students at this school. (Question 82)

In response to the statement “Students in my classes help one another when they need it,” 1,629 (51.2%) agreed or strongly disagreed with this statement, while 552 (17.4%) disagreed or strongly disagreed. Sixth graders were more likely to agree with this statement, and eighth grade students were more likely to disagree, Chi-square (8, N = 3132) = 24.31, p<.002. Boys were more likely to disagree with this statement, Chi-square (4, N = 3140) = 20.75, p<.000. White students were more likely to choose the middle-of-the road response options. Non-white students were more likely to strongly agree or strongly disagree, Chi-square (4, N = 3079) = 37.02, p<.000.

When asked to respond to the statement “Students in my classes get along with each other,” 1,276 (40.1%) students agree or strongly agree, and 597 (18.7%) disagree or strongly disagree. There were no significant differences in the responses given in reply to this statement by grade membership, Chi-square (8, N = 3140) = 15.33, p<.053. Similarly, responses given by male and female students did not differ significantly, Chi-square (4, N = 3148) = 5.8, p<.214. White students were more likely to select the more moderate or neutral response options. Non-white students were more likely to select response categories at either extreme, Chi-square (4, N = 3087) = 26.60, p<.000.

In response to the statement “I get along with other students at this school,” 2,419 (76.2%) students agreed or strongly agreed with this statement, and 226 (7.1%) students disagreed or strongly disagreed. Sixth grade students were the most likely to agree with this statement, and eighth grade students were again the most likely to disagree, Chi-square (8, N = 3148) = 16.99, p<.030. Girls were more likely to agree with this
statement, Chi-square \((4, N = 3156) = 20.35, p<.000.\) White students were more likely to select the more moderate or neutral responses, while Non-white students were more likely to either strongly agree or strongly disagree, Chi-square \((4, N = 3094) = 13.76, p<.000.\)

A fifth dimension of school climate perception is sense of belonging. The four questions that measured this dimension were as follows:

- SC21 – People here notice when I am good at something. (Question 90)
- SC23 – I wish I were at a different school. (Question 92)
- SC24 – I can really be myself at this school. (Question 93)
- SC25 – I feel like a part of this school. (Question 94).

In responding to the statement “People here notice when I am good at something,” 2,025 (63.7%) students agreed or strongly agreed, and 450 (14.2%) students disagreed or strongly disagreed. Sixth grade students were the most likely to agree with this statement, and eighth grade students were the most likely to disagree, Chi-square \((8, N = 3142) = 33.62, p<.000.\) Boys were more likely to answer strongly agree or strongly disagree, whereas girls were more likely to agree or have neutral feelings regarding the statement, Chi-square \((4, N = 3150) = 29.42, p<.000.\) White students were more likely to pick the more moderate or neutral response options. Non-white students were more likely to select responses at either extreme, Chi-square \((4, N = 3088) = 32.90, p<.000.\)

In response to the statement “I wish I were at a different school,” 723 (22.8%) students agreed or strongly agreed, and 1,597 (50.2%) disagreed or strongly disagreed. Eighth grade students were the most likely to agree with this statement, whereas sixth grade students were the most likely to disagree, Chi-square \((8, N = 3147) = 77.82, p<000.\)
Responses given by boys and girls to this statement did not differ significantly, Chi-square (4, N = 3155) = 2.69, p<.611. Non-White students were more likely to agree with this statement, while White students were more likely to have neutral or negative feelings regarding this statement, Chi-square (4, N = 3093) = 19.51, p<.001.

When asked to respond to the statement “I can really be myself at this school,” 1,911 (60.1%) viewed this statement favorably, while 593 (18.7%) students disagreed or strongly disagreed. Sixth graders were the most likely to agree with this statement, and eighth graders were the most likely to disagree, Chi-square (8, N = 3151) = 58.64, p<.000. The responses given by boys and girls to this item did not differ significantly, Chi-square (4, N = 3159) = 8.622, p<.071. Non-white students were more likely to strongly agree with this statement, while White students were more likely to have moderate or neutral feelings, Chi-square (4, N = 3097) = 41.35, p<.000.

In response to the statement “I feel like a part of this school,” 1,632 (51.4%) students agreed or strongly agreed with this statement, and 634 (20%) students disagreed or strongly disagreed. Sixth graders were the most likely to agree with this statement, and eighth grade students were the most likely to disagree, Chi-square (8, N = 3151) = 73.90, p<.000. Boys were more likely to answer strongly agree or strongly disagree, whereas girls were more likely to select more moderate or neutral response options, Chi-square (4, N = 3159) = 24.58, p<.000. Non-White students were more likely to strongly agree, while White students were more likely to be moderate or neutral, Chi-Square (4, N = 3098) = 20.75, p<.000.

The last dimension of school climate perception is home involvement. The four questions that comprise this dimension are the following:
SC 17 – I work hard on homework for my classes. (Question 86)

SC19 – My parents/guardians know what’s going on in my classes this year. (Question 88)

SC20 – My parents/guardians know they can take part in school-related events such as parent nights and field trips. (Question 89)

SC22 – I participate in after school activities at this school. (Question 91)

In response to the statement “I work hard on homework for my classes,” 2,426 (76.4%) students agreed or strongly agreed, and 410 (12.9%) students disagreed or strongly disagreed. Sixth graders were the most likely to agree, and eighth grade students were the most likely to disagree, Chi-square (8, N = 3140) = 63.23, p<.000. Girls were more likely to agree with this statement, Chi-square (4, N = 3148) = 14.49, p<.006. There were no significant differences in how students responded to this statement with respect to ethnicity, Chi-square (4, N = 3086) = 7.68, p<.104.

In response to the statement “My parents/guardians know what’s going on in my classes this year,” 2,085 (65.6%) students agreed or strongly agreed, and 410 (12.9%) students disagreed or strongly disagreed. Sixth graders were the most likely to agree with this statement and the eighth graders were the most likely to disagree, Chi-square (8, N = 3145) = 52.38, p<.000. There were no significant differences in the responses given by boys and girls, Chi-square (4, N = 3153) = 5.863, p<.210. Non-white students were more likely to strongly agree or to disagree with this statement, while white students agreed or were neutral, Chi-square (4, N = 3091) = 22.36, p<.000.

In responding to the statement “My parents/guardians know they can take part in school-related events such as parent nights and field trips,” 2187 (68.9%) students agreed
or strongly agreed, and 396 (12.5%) students disagreed or strongly disagreed. Sixth graders were the most likely to agree with this statement, and the eighth graders were the most likely to disagree, Chi-square (8, N = 3136) = 57.21, p < .000. The responses given by boys and girls did not differ significantly, Chi-square (4, N = 3144) = 4.33, p < .363. Non-white students were more likely to strongly agree, disagree, strongly disagree, or have neutral feelings about this statement, while White students were more likely to agree, Chi-square (4, N = 3083) = 15.72, p < .000.

In response to the statement “I participate in after school activities at this school,” 1,995 (62.8%) students agreed or strongly agreed with this statement, and 508 (16%) students disagreed or strongly disagreed. Sixth graders were the most likely to agree with this statement, while eighth grade students were the most likely to disagree, Chi-square (8, N = 3151) = 33.62, p < .000. Boys were more likely to strongly agree, agree, or strongly disagree than girls, who were more likely to remain neutral, Chi-square (4, N = 3159) = 13.62, p < .009. Non-white students were more likely to express extreme agreement or disagreement with this statement, while White students were more likely to have moderate or neutral feelings, Chi-square (4, N = 3097) = 14.76, p < .000.

Appendix O summarizes how students in the sample responded to the school climate items in the survey. The following three tables recap the school climate findings. Table 8 lists the frequencies of student responses by sex membership. Table 9 catalogs the frequencies of student responses by ethnicity. Finally, Table 10 gives the frequencies of student responses by grade.
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*The shaded areas represent the response category where the observed frequencies were statistically significantly higher than expected.

**Due to partial completion of some surveys, the total N reported for individual items may vary.

***See Appendix K for a quick reference to the school climate questions.
Table 9. Perceptions of School Climate by Ethnicity

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*The shaded areas represent the response category where the observed frequencies were statistically significantly higher than expected.

**Due to partial completion of some surveys, the total N reported for individual items may vary.

***See Appendix K for a quick reference to the school climate questions.
Table 10. Perceptions of School Climate by Grade

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*The shaded areas represent the response category where the observed frequencies were statistically significantly higher than expected.

**Due to partial completion of some surveys, the total N reported for individual items may vary.

***See Appendix K for a quick reference to the school climate questions.
School membership also affected how students perceived school climate. An individual school climate mean score was created for each student by adding the scores for the 25 items measuring the perceptions of school climate and then taking the average. A school climate mean score for each school was created by taking the mean score of each student in the school and taking the average. Comparing the school mean scores resulted in the finding that school 6 had a climate score reflecting the most positive school climate perceptions, followed in order from the most positive perceptions to the least positive perceptions by schools 3, 1, 0, 7, and 4. To test whether the difference in means was significant, the researcher conducted the Kruskal-Wallace test. Overall school climate perceptions differed significantly by school membership \([H (5) = 3177.0, \ p<.05]\).

Because the later analyses in the study were conducted using the factor scores obtained from the principal analysis procedure, the researcher also looked at whether school climate differed by school membership, ethnicity, sex, and grade. One-way analysis of variance was used to compare the observations. In interpreting the school climate questions, higher scores correlate with more negative perceptions about the school climate. Lower scores reflect more positive perceptions.

A one-way between-groups analysis of variance was conducted to explore the impact of school membership on perceptions of school climate. Subjects were divided into six groups, depending on the middle school the students reported to attend. All scores were statistically significant. For the school climate dimension “relationship with teachers,” \([F(5,2921) = 3.663, \ p = .003]\), post-hoc comparison indicated that the mean score for school 6 (\(M = -.12, \ SD = .97\)) differed significantly from school 7 (\(M = .10, \ SD\))
The mean score for school 6 also differed significantly from school 1 (M = .06, SD = .99), and school 7 differed significantly from school 3 (M = -.11, SD = .93). For the “sense of ambiguity” scores [F(5, 2921) = 2.775, p = .017], post-hoc comparison indicated that the mean score for school 3 (M = -.12, SD = .89) differed significantly from school 4 (M = .06, SD = .97). For the “worries” scores [F(5, 2921) = 7.146, p = .000], post-hoc comparison indicated that the mean worry score for school 0 (M = .01, SD = .99) differed from school 1 (M = .06, SD = .99) school 3 (M = -.11, SD = .93), and school 6 (M = -.12, SD = .97). School 6 also differed from school 4 (M = -.03, SD = .91) and school 7 (M = .10, SD = .98. For the “relationship with peers” scores [F(5, 2921) = 2.847, p = .014], post-hoc comparison indicated that the mean peer score for school 3 (M = .11, SD = .92) was significantly different from school 4 (M = -.06, SD = .96). For the “sense of belonging” scores [F(5, 2924) = 7.345, p = .000], post-hoc comparison indicated that the mean belonging score for school 4 (M = -.17, SD = 1.06) was significantly different from school 0 (M = .10, SD = 1.01), school 3 (M = .05, SD = 1.00) and school 6 (M = .14, SD = .93). Finally, for the “home involvement” scores [F(5, 2921) = 6.77, p = .000], post-hoc comparison indicated that the mean home involvement score for school 0 (M = .08, SD = 1.00) was significantly different from school 1 (M = -.11, SD = 1.00), school 3 (M = -.13, SD = .94), and school 6 (M = -.11, SD = .94). School 4 (M = .11, SD = .97) also was significantly different from schools 1, 3, and 6.

A one-way between-groups analysis of variance was conducted to explore the impact of race/ethnicity on perceptions of school climate. Subjects were divided into two groups: White and Non-White. There was a statistically significant difference at the p<0.05 in the “sense of ambiguity” scores for the two groups [F (1, 2865) = 6.006, p =
.014] with white students having a higher mean score (M = .014, SD = .95) than Non-White students (M = -.086, SD = 1.97). The scores for “worries” were also statistically different [F (1, 2865) = 38.281, p = .000]. White students were less likely to report being worried (M = .091, SD = .97) than Non-white students (M = .166, SD = 1.66). Finally, differences in “sense of belonging” scores were also statistically significant for these two groups [F (1, 2865) = 13.276, p = .000]. White students had lower belonging scores (M = .029, SD = 1.01) that Non-white students (M = .124, SD = .998). Table 11 summarizes the perceptions of school climate by ethnicity.

Table 11. Summary of the Perceptions of School Climate by Ethnicity

<table>
<thead>
<tr>
<th>Factors</th>
<th>Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationships with teachers</td>
<td>White</td>
</tr>
<tr>
<td>Sense of ambiguity</td>
<td>Less positive perceptions</td>
</tr>
<tr>
<td>Worries</td>
<td>More positive perceptions</td>
</tr>
<tr>
<td>Relationships with peers</td>
<td>=</td>
</tr>
<tr>
<td>Sense of belonging</td>
<td>Less positive perceptions</td>
</tr>
<tr>
<td>Home involvement</td>
<td>=</td>
</tr>
</tbody>
</table>

A one-way between-groups analysis of variance was conducted to explore the impact of sex on perceptions of school climate, as reflected by the factors scores. There were no statistically significant differences in perceptions of school climate for males and females.

Finally, a one-way between-groups analysis of variance was conducted to explore the impact of grade membership on perceptions of school climate. Subjects were divided into three groups: sixth, seventh, and eighth graders. There was a statistically significant difference in the “relationship with teachers scores for the three groups [F(2, 2912) = 34.7]. Post-hoc comparison using the Tukey HSD test indicated that all three grades differed significantly from each other, with sixth graders having scores reflecting the
most positive perceptions (M = -.27, SD = .93), seventh graders having the midrange scores (M = -.03, SD = .97), and eighth graders scores reflecting the most negative perceptions (M = .14, SD = .99). There were also statistical significant differences in the “sense of ambiguity” scores [F(2, 2912) = 3.13]. Post-hoc comparisons indicated that the mean score for grade six (M = -.08, SD = .91) was significantly different from grade 8 (M = .04), SD = 1.01). Grade 7 (M = -.01, SD = .98) did not differ significantly from either grade six or eight. Grade membership also had a significant impact on “sense of belonging” scores [F(2, 2912) = 30.47]. Post-hoc comparisons indicated that all three grades differed significantly from each other, with eighth grade having the scores reflecting the most negative perceptions (M = .26, SD = .98), seventh grade having intermediate scores (M = -.02, SD = .99), and sixth grade having scores reflecting the most positive (M = -.13, SD = .99). Finally, grade membership had a significant impact on the “home involvement” scores [F (2, 2912) = 39.6]. Post-hoc comparisons indicated that sixth grade scores (M = -.30, SD = .86), which reflected the most positive attitudes toward these school climate variable, differed significantly from seventh grade score (M = .03, SD = .98) and grade 8 (M = .12, SD = 1.01). Grades seven and eight did not differ significantly from one another.

Research Question 6

Research Question 6: Do the independent variables – sex, ethnicity, grade membership, relationship with teachers, sense of ambiguity, worries, relationship with peers, sense of belonging, home involvements, and school membership – have a significant relationship with students reporting being involved in bullying as either bullies or victims?
Multiple regression analysis was performed to determine whether a relationship existed between having been bullied and the independent variables grade, sex, school, and perceptions of school climate. Similarly, multiple regression analysis was performed to determine whether a relationship existed between having bullied and the same independent variables.

To obtain a measure of being a bullying victim, responses for questions 14 through 18 were summed. To obtain a measure of bullying, responses for question 19 through 23 were summed. After exploring the two resulting variables graphically, looking at the skewness and kurtosis values, and examining the boxplots, the variables were found to be skewed. To correct for nonnormality, the scores were transformed. The bullied values were transformed by adding one to the original value and then taking the natural log. The bully values were transformed by adding one to the original value and then taking the negative fourth root, so results needed to be interpreted as the inverse of the relationship between the variables. The optimal transformations were obtained by finding the Box-Cox transformation using the SAS transreg procedure as explained by the SAS Customer Support Center (2001).

Because multiple regression analysis assumes that the predictors in the regression model are continuous or categorical with only to categories, the categorical variables indicating the grade and school memberships were coded as dummy variables. For the grade variables, grade eight was the baseline, and the variable created were Grd1 (comparing sixth grade to eighth) and Grd2 (comparing seventh grade to eighth). For schools, school 0 was the baseline. The school dummy variables created were S1, S2, S3, S4, and S5. Missing values were addressed through the use of listwise deletion, which
means that if a person has a missing value for any variable, then they are excluded from
the whole analysis. Using listwise deletion you get a better correlation matrix, where all
correlations are obtained from the same set of observations. Another option is to exclude
cases on a pairwise basis, which means that if a respondent has a score missing for any
particular variable, then their data are excluded only from calculations involving the
missing variable. Whereas pairwise deletion typically provides for the exclusion of fewer
cases the results are difficult to interpret, because it is likely that the data analysis will be
based on entirely different groups of cases (Field, 2000).

Using multiple regression, the dependent variable bullied was regressed on the
linear combination of sex, ethnicity, grade membership, school membership, and the six
school climate factor scores. In a separate analysis, the dependent variable bully was
regressed on the same linear combination of independent variables.

For the multiple regression analysis in which being bullied was the outcome
variable, the model containing all the predictor variables resulted in the greatest
significant increases in the R Square statistic. R square is a measure of how much of the
variability in the outcome is accounted for by the predictors. The model with the school
climate predictors accounted for 12.3% of the variance. According to this model, sex,
grade and school membership, relationship with teachers, worries, and relationship with
peers were significant predictors of being a victim of bullying. Boys were more likely to
report being bullied, students in grades six and seven were more likely to report being
bullied than students in grade eight, and students in all schools, except school 3, were less
likely to report being bullied than students in school 0. School 0 and 3 did not differ
significantly in students reporting being victims of bullying. For the perception of school
climate variables, students that reported negative feelings regarding relationships with adults at the school were more likely to report being bullied. Also, students that reported more feelings of worry were also more likely to report being bullied. Finally, getting along with peers and having supportive peers was associated with reduced levels of reported levels of being a victim of bullying. Results are summarized on Table 12.

Table 12. Beta Coefficient Summary for Bullying Victimization

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Sex</td>
<td>.158</td>
<td>.030</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-.063</td>
<td>.037</td>
</tr>
<tr>
<td>Grd1</td>
<td>.156</td>
<td>.042</td>
</tr>
<tr>
<td>Grd2</td>
<td>.102</td>
<td>.035</td>
</tr>
<tr>
<td>S1</td>
<td>-.161</td>
<td>.056</td>
</tr>
<tr>
<td>S2</td>
<td>-.089</td>
<td>.054</td>
</tr>
<tr>
<td>S3</td>
<td>-.151</td>
<td>.052</td>
</tr>
<tr>
<td>S4</td>
<td>-.178</td>
<td>.053</td>
</tr>
<tr>
<td>S5</td>
<td>-.235</td>
<td>.062</td>
</tr>
<tr>
<td>Relationship with Teachers</td>
<td>.057</td>
<td>.018</td>
</tr>
<tr>
<td>Ambiguity</td>
<td>-.011</td>
<td>.017</td>
</tr>
<tr>
<td>Worry</td>
<td>.182</td>
<td>.015</td>
</tr>
<tr>
<td>Relationship with Peers</td>
<td>-.173</td>
<td>.016</td>
</tr>
<tr>
<td>Belonging</td>
<td>-.023</td>
<td>.017</td>
</tr>
<tr>
<td>Home Involvement</td>
<td>.010</td>
<td>.019</td>
</tr>
</tbody>
</table>

Grd1 – Dummy variable for grade membership; compares sixth grade to eighth grade.
Grd2 – Dummy variable for grade membership; compares seventh grade to eighth grade.
S1 – Dummy variable for school membership; compares school 1 to 0.
S2 – Dummy variable for school membership; compares school 3 to 0.
S3 – Dummy variable for school membership; compares school 4 to 0.
S4 – Dummy variable for school membership; compares school 6 to 0.
S5 – Dummy variable for school membership; compares school 7 to 0.

For the multiple regression analysis in which bullying aggression was the outcome variable, the model containing all the predictor variables resulted in the greatest significant increases in the R square statistic. R square is a measure of how much of the variability in the outcome is accounted for by the predictors. The model with the school climate predictors accounted for 12.8% of the variance. According to this model, sex, grade and school membership, relationship with teachers, worries, and relationship with
peers were significant predictors of being a victim of bullying. Boys were more likely to report engaging in bullying. Students in grades six and seven were more likely to report being bullies than students in grade eight. Students in schools 0 and 3 did not report significantly different levels of bullying. Students in all other schools reported less levels of bullying that school 0. Students reporting stronger relationships with teachers and adults at the school were less likely to report bullying. Students reporting being less worried were also less likely to report bullying. Finally, students reporting better relationships with and among peer were more likely to report bullying other students.

The results are summarized on Table 13.

Table 13. Beta Coefficient Summary for Bullying Aggression.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unstandardized Coefficients</th>
<th></th>
<th>Standardized Coefficients</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
<td>Sig.</td>
</tr>
<tr>
<td>Sex</td>
<td>.007</td>
<td>.001</td>
<td>-.098</td>
<td>-5.577</td>
<td>.000</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>.003</td>
<td>.002</td>
<td>.033</td>
<td>1.753</td>
<td>.080</td>
</tr>
<tr>
<td>Grd1</td>
<td>-.007</td>
<td>.002</td>
<td>-.076</td>
<td>-3.674</td>
<td>.000</td>
</tr>
<tr>
<td>Grd2</td>
<td>-.004</td>
<td>.002</td>
<td>-.058</td>
<td>-2.866</td>
<td>.004</td>
</tr>
<tr>
<td>S1</td>
<td>.007</td>
<td>.002</td>
<td>.070</td>
<td>2.988</td>
<td>.003</td>
</tr>
<tr>
<td>S2</td>
<td>.004</td>
<td>.002</td>
<td>.044</td>
<td>1.821</td>
<td>.069</td>
</tr>
<tr>
<td>S3</td>
<td>.006</td>
<td>.002</td>
<td>.072</td>
<td>2.904</td>
<td>.004</td>
</tr>
<tr>
<td>S4</td>
<td>.008</td>
<td>.002</td>
<td>.085</td>
<td>3.383</td>
<td>.001</td>
</tr>
<tr>
<td>S5</td>
<td>.010</td>
<td>.003</td>
<td>.085</td>
<td>3.822</td>
<td>.000</td>
</tr>
<tr>
<td>Relationship with Teachers</td>
<td>-.002</td>
<td>.001</td>
<td>-.067</td>
<td>-3.298</td>
<td>.001</td>
</tr>
<tr>
<td>Ambiguity</td>
<td>.000</td>
<td>.001</td>
<td>.011</td>
<td>587</td>
<td>.557</td>
</tr>
<tr>
<td>Worry</td>
<td>-.008</td>
<td>.001</td>
<td>-.216</td>
<td>-12.010</td>
<td>.000</td>
</tr>
<tr>
<td>Relationship with Peers</td>
<td>.008</td>
<td>.001</td>
<td>.204</td>
<td>10.769</td>
<td>.000</td>
</tr>
<tr>
<td>Belonging</td>
<td>.001</td>
<td>.001</td>
<td>.027</td>
<td>1.358</td>
<td>.175</td>
</tr>
<tr>
<td>Home Involvement</td>
<td>.000</td>
<td>.001</td>
<td>-.011</td>
<td>-.507</td>
<td>.612</td>
</tr>
</tbody>
</table>

Grd1 – Dummy variable for grade membership; compares sixth grade to eighth grade.
Grd2 – Dummy variable for grade membership; compares seventh grade to eighth grade.
S1 – Dummy variable for school membership; compares school 1 to 0
S2 – Dummy variable for school membership; compares school 3 to 0.
S3 – Dummy variable for school membership; compares school 4 to 0.
S4 – Dummy variable for school membership; compares school 6 to 0.
S5 – Dummy variable for school membership; compares school 7 to 0.
Research Question 7

Research Question 7: Does the combined effect of independent variables – school climate variables and school membership – explain the observed variation in students reporting being involved in bullying at all?

Multilevel analyses can separate determinants operating at an individual level from those operating at a contextual level. For this reason, the researcher sought to answer this research question using a multilevel approach. School-level variables were obtained from a Florida Department of Education’s School Accountability Report.

As discussed previously, there appears to be some evidence that the levels of bullying activities differ among schools. To model this between-group variability, the researcher included several school-level contextual effects in predicting bullying activities. The research took two approaches for conducting the multilevel analyses. First the researcher followed the methods described by Singer (1998) using SAS PROC MIXED. As in most studies looking at school-effect, the first multilevel analyses conducted, the covariance structure used was ‘unstructured’ and the degrees of freedom were determined by the between-within (BW) option. In this type of structure, no mathematical pattern is imposed on the covariance matrix. This approach was computationally time intensive and ultimately was not the best approach for a data set of this small size and for the number of dependent variables used in the models. However, some interesting information was obtained from the Singer approach. The unconditional means models for both outcome variables, bullying aggression and bullying victimization, suggested that schools did not differ in the amount of bullying activities,
when looking at the covariance parameter estimates. For bullying aggression, the estimate of intraclass correlation, which tells the researcher what portion of the total variance occurs between schools, was 0.01 or one percent. For bullying victimization, the portion of the variance occurring between schools was also one percent. These same models conducted with school level variables were also informative. The only school level variable that explained a portion of the between school variation was the variable representing the percentage of students eligible for free or reduced-price lunch. This variable explained 82% of the between school variation in bullying aggression and 81% of the explainable variation between schools in bullying victimization. Unfortunately, the more complex models containing both school level and student level variables could not be conducted using this approach. Instead the researcher conducted models using a second approach. In this case the analyses were run using the compound symmetry structure (CS) which has only two unknown parameters, one modeling a homogenous variance and the other a correlation, which is assumed to remain constant. This CS structure was selected because it had the least number of unknown parameters and would better be able to handle a small data set and models with a large number of explanatory variables (Littell, Milliken, Stroup, & Wolfinger, 2002). The researcher also used the Kenward-Roger’s (KR) adjusted degrees of freedom solution, an approach specifically proposed for small sample settings (Kowalchuck, Keselman, Algina, & Wolfinger, 2004). The results of the second approach follow. Table 17 lists the unstandardized estimates for two models containing school level measures. Model I contains only school-level predictors, whereas model II presents a full model with all individual and school-level independent variables.
In model I, the researcher examines the hypothesis that the proportion of students in a reduced cost or free school lunch program contributes to student bullying, both as aggressor and victim. Looking at the estimate and the significance values for this variable, it appears that as the proportion of students on this program increases, so do the reports of being bullied and bullying. Additionally, this model looks at the possibility that the percentage of students from the total enrollment who were absent 21 or more days during the school year contributes to student bullying. Again, looking at the estimate and significance values for this variable, it appears that absences and bullying are correlated. The remaining school level variables described previously do not appear to be correlated to bullying. However, in Model II, the model that includes both school level and student level predictors, both formerly significant variables, no longer have a significant effect. Table 14 shows the estimates for the school level predictor variables in both models.

Table 14. Values for School Level Variables in Models I and II

<table>
<thead>
<tr>
<th>Bullying Aggression</th>
<th>Model I</th>
<th>Model II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Effect</td>
<td>Estimate SE  DF F Pr &gt; F</td>
<td>Estimate SE  DF F Pr &gt; F</td>
</tr>
<tr>
<td>Lunch</td>
<td>-0.00021 0.000047 3155 21.20 &lt;.0001</td>
<td>-0.00014 0.000077 33.4 3.11 0.0868</td>
</tr>
<tr>
<td>Enrollment</td>
<td>3.062E-6 4.857E-6 3155 0.40 0.5285</td>
<td>2.846E-6 7.378E-6 30.1 0.15 0.7024</td>
</tr>
<tr>
<td>Absences</td>
<td>0.001443 0.000587 3155 6.03 0.0141</td>
<td>0.000163 0.000916 34.2 0.03 0.8596</td>
</tr>
<tr>
<td>Staff</td>
<td>-0.00002 0.000757 3155 0.25 0.6197</td>
<td>-0.00008 0.000064 27.9 1.71 0.2016</td>
</tr>
<tr>
<td>Disability</td>
<td>0.001121 0.000757 3155 2.19 0.1389</td>
<td>0.000138 0.001205 34.5 0.01 0.9093</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bullying Victimization</th>
<th>Model I</th>
<th>Model II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lunch</td>
<td>0.004920 0.001082 3155 20.67 &lt;.0001</td>
<td>0.003118 0.001802 25.8 2.99 0.0956</td>
</tr>
<tr>
<td>Enrollment</td>
<td>-0.00007 0.000113 3155 0.41 0.5236</td>
<td>-0.00004 0.000172 24 0.06 0.8104</td>
</tr>
<tr>
<td>Absences</td>
<td>-0.03316 0.000954 3155 0.56 0.0153</td>
<td>-0.00496 0.02138 26.5 0.05 0.8183</td>
</tr>
<tr>
<td>Staff</td>
<td>0.000534 0.000954 3155 0.56 0.5753</td>
<td>0.001780 0.001483 22 1.44 0.2428</td>
</tr>
<tr>
<td>Disability</td>
<td>-0.02686 0.01762 3155 2.32 0.1276</td>
<td>-0.00778 0.02817 26.5 0.08 0.7846</td>
</tr>
</tbody>
</table>

Next, a model (Model III) was examined that included only the variable representing the percentage of students eligible for free or reduced-price lunch and all the individual level variables. In this model, the school level variable lunch was significant as well as the following student level variables: sex, relationship with adults, sense of
worry, grade membership, and relationship with peers. Finally, a final model was run, with only the variables that were significant in model III. The values for the variables in this model are on Table 15.

Table 15. Values for School Level and Student Level Variables in Final Model

<table>
<thead>
<tr>
<th>Bullying Aggression Variables</th>
<th>Final Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimate</td>
</tr>
<tr>
<td>Lunch</td>
<td>0.9167</td>
</tr>
<tr>
<td>Sex</td>
<td>-0.00013</td>
</tr>
<tr>
<td>Teachers</td>
<td>-0.00711</td>
</tr>
<tr>
<td>Worry</td>
<td>-0.00796</td>
</tr>
<tr>
<td>Grd1</td>
<td>-0.00629</td>
</tr>
<tr>
<td>Grd2</td>
<td>-0.00418</td>
</tr>
<tr>
<td>Peers</td>
<td>-0.007808</td>
</tr>
<tr>
<td></td>
<td>SE</td>
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<tr>
<td>Lunch</td>
<td>0.002066</td>
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<tr>
<td>Sex</td>
<td>0.000046</td>
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<tr>
<td>Teachers</td>
<td>0.001302</td>
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<tr>
<td>Worry</td>
<td>0.000670</td>
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<tr>
<td>Grd1</td>
<td>0.001776</td>
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<td>Peers</td>
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<td>DF</td>
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<td>Lunch</td>
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<td>Sex</td>
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<td>Teachers</td>
<td>231</td>
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<td>18.2</td>
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<tr>
<td>Grd1</td>
<td>572</td>
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<tr>
<td>Grd2</td>
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<td></td>
<td>F</td>
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<tr>
<td>Lunch</td>
<td>8.24</td>
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<tr>
<td>Sex</td>
<td>29.82</td>
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<tr>
<td>Teachers</td>
<td>16.34</td>
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<tr>
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</tr>
<tr>
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<tr>
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<td></td>
<td>Pr &gt; F</td>
</tr>
<tr>
<td>Lunch</td>
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</tr>
<tr>
<td>Sex</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Teachers</td>
<td>0.006</td>
</tr>
<tr>
<td>Worry</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Grd1</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Grd2</td>
<td>0.0057</td>
</tr>
<tr>
<td>Peers</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Random Effect Variance</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>7.585E-8</td>
</tr>
<tr>
<td></td>
<td>SE</td>
</tr>
<tr>
<td>School</td>
<td>0.000551</td>
</tr>
<tr>
<td></td>
<td>ZValue</td>
</tr>
<tr>
<td>School</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>Pr &gt; Z</td>
</tr>
<tr>
<td>School</td>
<td>0.4113</td>
</tr>
</tbody>
</table>

The final model suggests that bullying aggression (the variable in the transformed variable – transformed by adding one to the original value and then taking the negative fourth root – as a result it is important to keep in mind that the results should be interpreted as an inverse relationship) increases with a decreasing percentage of students on subsidized school lunches. Bullying aggression is also higher for boys that for girls. Additionally, bullying aggression is higher for students reporting more negative feelings regarding their relationships with teachers and adults at the school. Students in grades sixth and seventh are more likely to report engaging in bullying than students in eighth
grade. Finally, students that report positive perceptions of peer relationships are more likely to report that they have bullied.

The final model suggests that reported bullying victimization increased with an increase in the percentage of students eligible for free or reduced-price lunch. The variable free or reduced-price lunch is a proxy variable for some other variable, perhaps a child’s neighborhood or environment. This finding may then be an indication that the neighborhood or home environment the child comes from affects the child’s bullying behavior at school. According to the final model, reports of bullying victimization were also higher among male students, students that report negative feeling regarding their relationship with teachers and other adults at school, students that report more feelings of worry, and students that report more negative feelings regarding their relationships with peers. Students in sixth and seventh grades were more likely to report being bullied than students in the eighth grade.

*Research Question 8*

Research Question 8: Does gender modify the observed effects of independent variables on students reporting involvement in bullying at all, as a bully or as a victim?

Effect modification, also known as interaction or modulation, is a situation in which the strength of association between one variable and an outcome is affected by another variable. In this case, the researcher analyzed the how the dependent variables used to predict bullying were modified by the sex of the student.

To address this question, the researcher included interaction terms between sex and the independent variable. The first step taken was to conduct multiple regression
analyses of the two dependent variables including interaction terms as predictors. Next, the researcher divided girls and boys into separate sets, and the researcher ran the multiple regression analyses again. Finally, the same process was repeated using models containing both school level and student level variables.

For the dependent variable bullying victimization, the interaction terms that were significant, according to multiple regression analysis were sex by relationship with teachers, sex by the dummy variable Grade2 (seventh grade compared to the baseline, eighth grade), and sex by ethnicity. These same variables were also the significant interaction terms for bullying aggression. The values for the significant interaction terms are on Table 16.

Table 16. Summary of the Significant Interaction Terms

<table>
<thead>
<tr>
<th>Significant Independent variables</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Sex*teachers</td>
<td>-.129</td>
<td>.035</td>
</tr>
<tr>
<td>Sex*ethnicity</td>
<td>-.197</td>
<td>.073</td>
</tr>
<tr>
<td>Sex*Grade2</td>
<td>-.209</td>
<td>.070</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Sex*teachers</td>
<td>.006</td>
<td>.002</td>
</tr>
<tr>
<td>Sex*ethnicity</td>
<td>.009</td>
<td>.003</td>
</tr>
<tr>
<td>Sex*Grade2</td>
<td>.009</td>
<td>.003</td>
</tr>
</tbody>
</table>

To further consider the nature of the effect modification, the researcher evaluated multiple regression analyses carried out separately for boys and girls. In terms of bullying victimization, for girls, interactions with teachers and other adults at school and the dummy variable Grade2 (seventh grade compared to the baseline, eighth grade) were significant. Girls that report more negative feelings regarding relationships with adults at the school are more likely to report being bullied. Also, girls in the seventh grade were more likely to report being bullied than girls in the eighth grade. For boys, ethnicity was
significant, more boys that reported being Non-White also reporting being less likely to be victims of bullying.

In examining effect modification in terms of bullying aggression, girls, interactions with adults at the school and the dummy variable Grade2 (seventh grade compared to the baseline, eighth grade) were significant. Girls that report more positive relationships with teachers and adults at the school are less likely to report bullying. Girls in grade seven are more likely to report engaging in bullying than girls in grade eight. Among boys, Non-White students are less likely to engage in bullying aggression than students that self-report being white. Table 17 summarizes the results of the multiple regression analyses run for the female and male student subsets. The same results were obtained using a multilevel approach. Results can be seen in Table 18.

### Table 17. Beta Coefficients of Models I and II

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unstandardized</td>
<td>Standardized</td>
</tr>
<tr>
<td></td>
<td>Coefficient</td>
<td>S.E.</td>
</tr>
<tr>
<td>Bullying Victimization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers</td>
<td>-.005</td>
<td>.026</td>
</tr>
<tr>
<td>Grade2</td>
<td>.003</td>
<td>.054</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-.166</td>
<td>.056</td>
</tr>
<tr>
<td>Bullying Aggression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers</td>
<td>.000</td>
<td>.001</td>
</tr>
<tr>
<td>Grade2</td>
<td>.000</td>
<td>.002</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>.007</td>
<td>.002</td>
</tr>
</tbody>
</table>
### Table 18. Estimates for Interaction Terms Obtained by Multilevel Approach

<table>
<thead>
<tr>
<th>Bullying Victimization</th>
<th>Estimate</th>
<th>S.E.</th>
<th>DF</th>
<th>F</th>
<th>Pr &gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lunch</td>
<td>0.003189</td>
<td>0.001190</td>
<td>13.9</td>
<td>7.17</td>
<td>0.0181</td>
</tr>
<tr>
<td>Sex</td>
<td>0.3057</td>
<td>0.05499</td>
<td>1520</td>
<td>30.90</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>0.02467</td>
<td>0.04864</td>
<td>776</td>
<td>0.26</td>
<td>0.6121</td>
</tr>
<tr>
<td>Teachers</td>
<td>0.1351</td>
<td>0.02271</td>
<td>105</td>
<td>35.40</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Worry</td>
<td>0.1833</td>
<td>0.01590</td>
<td>24.9</td>
<td>132.98</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Grd1</td>
<td>0.2028</td>
<td>0.05645</td>
<td>1621</td>
<td>12.91</td>
<td>0.0003</td>
</tr>
<tr>
<td>Grd2</td>
<td>0.1951</td>
<td>0.04742</td>
<td>1041</td>
<td>16.92</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Peers</td>
<td>-0.1763</td>
<td>0.01633</td>
<td>28.1</td>
<td>116.56</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Sex*Teachers</td>
<td>-0.1343</td>
<td>0.03121</td>
<td>324</td>
<td>18.52</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Sex*Grd1</td>
<td>-0.1089</td>
<td>0.08220</td>
<td>2271</td>
<td>1.75</td>
<td>0.1854</td>
</tr>
<tr>
<td>Sex*Grd2</td>
<td>-0.1916</td>
<td>0.06957</td>
<td>2117</td>
<td>7.59</td>
<td>0.0059</td>
</tr>
<tr>
<td>Sex*Ethnicity</td>
<td>-0.1730</td>
<td>0.06841</td>
<td>1391</td>
<td>6.39</td>
<td>0.0116</td>
</tr>
</tbody>
</table>

### Bullying Aggression

<table>
<thead>
<tr>
<th>Bullying Aggression</th>
<th>Estimate</th>
<th>S.E.</th>
<th>DF</th>
<th>F</th>
<th>Pr &gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lunch</td>
<td>-0.00014</td>
<td>0.000049</td>
<td>24.3</td>
<td>8.12</td>
<td>0.0088</td>
</tr>
<tr>
<td>Sex</td>
<td>-0.01380</td>
<td>0.002348</td>
<td>2707</td>
<td>34.55</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-0.00106</td>
<td>0.002070</td>
<td>2456</td>
<td>0.26</td>
<td>0.6076</td>
</tr>
<tr>
<td>Teachers</td>
<td>-0.00579</td>
<td>0.000962</td>
<td>1046</td>
<td>36.19</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Worry</td>
<td>-0.00802</td>
<td>0.000665</td>
<td>322</td>
<td>145.42</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Grd1</td>
<td>-0.00879</td>
<td>0.002411</td>
<td>2701</td>
<td>13.29</td>
<td>0.0033</td>
</tr>
<tr>
<td>Grd2</td>
<td>-0.00843</td>
<td>0.002023</td>
<td>2567</td>
<td>17.36</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Peers</td>
<td>0.007733</td>
<td>0.000685</td>
<td>338</td>
<td>127.48</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Sex*Teachers</td>
<td>0.005670</td>
<td>0.001328</td>
<td>1828</td>
<td>18.24</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Sex*Grd1</td>
<td>0.005058</td>
<td>0.003511</td>
<td>2803</td>
<td>2.08</td>
<td>0.1498</td>
</tr>
<tr>
<td>Sex*Grd2</td>
<td>0.008451</td>
<td>0.002973</td>
<td>2778</td>
<td>8.08</td>
<td>0.0045</td>
</tr>
<tr>
<td>Sex*Ethnicity</td>
<td>0.007605</td>
<td>0.002919</td>
<td>2562</td>
<td>6.79</td>
<td>0.0092</td>
</tr>
</tbody>
</table>

**Summary of Results**

The purpose of this study was to acquire information about bullying among students in six middle schools and to analyze how of student perceptions of school climate (for example, how they view their relationship with peers and faculty and how they feel about their role as students and adolescents) relates to the self-reported prevalence of peer bullying. The findings are based on a sample of 3178 students from grades six to eight.

The results indicated that bullying was a common occurrence in the schools, and its nature was comparable with published research literature on bullying. Approximately eight percent of students were bullied on a regular basis in school, with verbal bullying as
the most common type of bullying and relational bullying as the least common. Being a perpetrator of physical, verbal, and relational bullying was most common among boys. Girls reported higher levels of being victims of relational bullying. Bullying also varied according to school membership and grade membership. Bullying differed according to school climate perceptions, as well. Interestingly, the effect of some of these variables on bullying was modified by sex. Finally, school context was a significant predictor of bullying, in particular the percentage of students eligible for free or reduced-price lunch.
Chapter 5

Summary, Conclusions, and Recommendations

This study is concluded by offering a summary and discussion of the results in four sections. The first section is an overview of the study. The second section presents conclusions and a discussion of the results. The third section presents limitations and strengths of the study. The final section provides recommendations for future research.

Overview of the Study

The purpose of this study was to analyze the relationship of school climate with the prevalence of peer bullying among middle school students in Sarasota County, Florida. Aggressive behaviors in childhood and adolescence have been the focus of many empirical investigations in the last several decades (e.g., Craig & Pepler, 1997; Crick & Werner, 1998; Pellegrini & Bartini, 2000; Shakeshaft, et al., 1995; Smith & Sharp, 1994). As a result, peer victimization or bullying, a subset of aggression, has been identified as a significant problem that can affect the physical and psychosocial health of those who are frequently bullied (victims) and those students who bully their peers at an early age (aggressors) (Batsche & Knoff, 1994). Bullying can take the form of physical, verbal, or relational bullying (Olweus, 1993). Although consensus does not exist on the exact definition of bullying, most researchers agree that bullying involves a child being repeatedly victimized; that the abuse is unprovoked; and that there is a power imbalance that favors the aggressor in the bully and victim interaction (Olweus, 1999).
When applying Bronfenbrenner’s ecological theory of human development to the problem of school bullying, the theory dictates that the school setting would have an effect on students’ behaviors. However, the influence of the school setting is not exerted by the “objective” nature of the setting, but instead, the school setting influences student behaviors through the students’ perceptions of their school environment (Bronfenbrenner, 1979), what this study refers to as perceptions of school climate. Within the framework of Bronfenbrenner’s ecological theory of human development, this study analyzed the perceptions of school climate and bullying behaviors of middle school students in six Sarasota County, Florida public schools. The study was designed to address these eight research questions:

1. What is the prevalence of bullying in the sample?
2. What type of bullying occurs most frequently (physical, verbal, relational)?
3. Are there differences in types of bullying or victimization as a function of school, gender, ethnicity, or grade?
4. What are the perceptions of school climate among students in this sample?
5. Are there differences in school climate perception as a function of school, gender, ethnicity, or grade?
6. Do the independent variables – perception of school climate variables and school membership – have a significant relationship with students reporting being involved in bullying at all, as a bully or as a victim?
7. Does the combined effect of independent variables—perceptions of school climate variables and school level variables (enrollment, absences, staff, percent of students classified as disabled, and percent free or school lunch) – explain the
observed variation in students reporting being involved in bullying at all, as a bully or as a victim?

8. Does gender modify the observed effects of dependent variables on students reporting involvement in bullying at all, as a bully or as a victim? Effect modification occurs when the association between the independent variable and the dependent variable is affected by a third factor, in this case sex.

To collect data on the school climate variables and bullying behaviors, the researcher added questions regarding school climate perceptions and bullying to the YRBS-M, a survey tool developed to assess the prevalence of risk behaviors among middle school students (Centers for Disease Control and Prevention, 2003; Fetro, Coyle, & Pham, 2001). The data were analyzed using a variety of methods, including descriptive and exploratory procedures, multiple linear regression, and multilevel regression.

The findings are based on a sample of 3178 students from grades six to eight. The results indicated that bullying was a common occurrence in the schools, and its nature was comparable with the other research literature on bullying (Nansel et al., 2001). Approximately eight percent of students were bullied on a regular basis in school, with verbal bullying as the most common type of bullying and relational bullying as the least common. Boys were more likely than girls to be perpetrators of all three forms of bullying. Girls reported higher levels of being victims of relational bullying. Bullying also varied according to school membership and grade membership. Bullying differed according to school climate perceptions, as well. Interestingly, the effect of some of
these variables on bullying was modified by sex. Finally, school context was a significant predictor of bullying, in particular the percentage of students eligible for free or reduced-price lunch.

Conclusions and Discussion

Research questions 1, 2, and 3

1. What is the prevalence of bullying in the sample?

2. What type of bullying occurs most frequently (physical, verbal, relational)?

3. Are there differences in types of bullying or victimization as a function of school, gender, ethnicity, or grade?

Bullying is a significant problem in U.S. school. In a recent national study, Nansel, et al. (2001) found that about 30% of students in grades sixth through ten had been involved in bullying incidents at moderate or high frequencies. This current study has found similar rates, with 34% of students in the sample reporting being involved in moderate to high levels of bullying, either as a victim or as a bully. As in other bullying studies, the most prevalent type of bullying reported in verbal bullying, with 65.8% of students reporting having been involved as a bully at least once in the past 30 days, and with 66% of students reporting having been a victim of this type of bullying in the past month.

There were significant differences in types of bullying victimization and aggression with respect to the school students attended. Being a victim of verbal bullying differed depending on school membership, as did being an aggressor in verbal and physical bullying. Although not analyzed in quite the same way as this study, other published studies give researchers reason to believe that a student’s bullying behaviors
are affected by the school a student attends (Brand & Felner, 1996; Brand et al., 2003). Whereas school characteristics such as class size or school size have not been found to be related to bullying behaviors in students, how students interact with the school environment has (Dake, Price, & Telljohann, 2003; Whitney & Smith, 1993). For example, studies have found association between bullying and academic competence, school adjustment, and school engagement (Canadian Public Health Association, 2003; Mynard & Joseph, 1997; Natvig, Albrektsen, & Qvarnstrom, 2001).

There were also significant differences in the types of bullying victimization and aggression with respect to sex. Boys were more likely to report being both the victims and the aggressor in verbal bullying and physical bullying. Boys were also more likely to report being the aggressors in relational bullying. However, girls were more likely to report being the victims in relational bullying. In general, these finding are also reflected in the published literature. Studies have found that boys are more likely to be both the perpetrators and the victims of bullying (Banks 1997; Nansel, et al, 2001). Whereas both boys and girls use verbal bullying most frequently, boys are more likely to engage in physical bullying and girls are more likely to use indirect bullying (Ahmad & Smith, 1994; Olweus, 1999). Previous studies looking at relational bullying found that relational bullying seemed to be equally common across gender, though may be demonstrated in gender-specific ways and found that, although this type of bullying is exhibited earlier by girls, boys catch up as their verbal skills increase (Björkvist, Lagerspaetz, Kaukiainen, 1992; Björkvist, 1994).

Overall, a student’s reported ethnicity was not related to whether he or she reported engaging in bullying, as a victim or as an aggressor. The exception to this
finding was that students reporting being of an ethnicity other than White were more likely to report higher levels of verbal and physical bullying aggression. However, this effect appears to disappear in later multiple regression analyses, perhaps due to the fact that the school with the highest levels of reported bullying was also the school with the highest percentage of Non-White students. The finding that bullying does not differ according to ethnicity has been previously reported in the literature (Seals & Young, 2003).

There were significant differences in the types of bullying victimization and aggression with respect to grade membership. Seventh grade students reported the highest levels of physical and verbal victimization. Sixth grade students reported the highest levels of relational victimization, and eighth grade students reported the lowest levels of all types of bullying victimization. For bullying aggression, eighth grade students reported the highest levels of verbal aggression, seventh graders reported the highest levels of physical aggression, and sixth graders reported the lowest levels of verbal and physical aggression. There were no differences observed in the levels of relational aggression by grade membership. These differences in bullying behaviors with respect to grade membership are not always observed in the literature. Seals and Young (2003) reported that there were no significant grade-level difference in the prevalence of the various types of bullying. However, other research suggests that students in lower grades were more likely to be bullied than students in higher grades (National Center for Education Statistics, 2001).

The researcher expected to see a difference in the levels of bullying by grade membership, specifically more victimization and aggression in the sixth grade. This was
predicted on the basis of findings reported in the literature. A short-term investigation of over 500 middle school students found an increase in bullying behavior among sixth-graders over a 4-month period (Espelage, Bosworth, & Simon, 2001). The authors speculated that the sixth-graders were assimilating into the middle school, where bullying behavior was part of the school culture. This speculation was supported by the theory that bullying is a learned behavior, and that as they enter middle school, sixth-graders have not yet learned how to interact positively in the social milieu of the school. Many sixth-graders who wish to "fit in" may adopt the behaviors--including teasing--of those students who have been in the school longer and who have more power to dictate the social norm. Two recent studies further examined the hypothesis that middle school students opt to bully their peers to fit in (Pellegrini & Bartini, 2000; Rodkin, Farmer, Pearl, & Van Acker, 2000). Pellegrini and colleagues found that bullying enhanced within-group status and popularity among 138 fifth-graders making the transition through the first year of middle school. Rodkin and colleagues reported similar findings in a study of 452 fourth through sixth grade boys. Both the Pelligrini and Rodkin studies, although reporting interesting findings, had low sample sizes that disallowed the drawing of many inferences. This current study, with a larger sample size, saw the highest levels of reported victimization among seventh grade students and the lowest levels of aggression among the sixth grade students, when looking at the chi-square analyses, However, the results were different when looking at the multiple regression analyses conducted to answer research question six, where student in the sixth and seventh grade reported the highest levels of overall bullying aggression and victimization.
Research questions 4 and 5

Research Question 4. What are the perceptions of school climate among students in this sample?

Research Question 5. Are there differences in school climate perception as a function of school, gender, ethnicity, or grade?

Overall, students in this sample have a positive perception of the school climate, with more than half of the students feeling positive about all aspects of their school. This study found that perceptions of school climate varied by school membership. In looking at the relationship with teachers and adults at the school, school 1 had the most positive scores and school 6 had the lowest. In looking at the sense of ambiguity or predictability scores, the most positive scores were also at school 1, while school 3 had the lowest scores. In looking at the sense of worry scores, school 0 had the most positive perceptions and school 6 had the most negative. In looking at relationships with peers, school 3 had the most positive student perceptions and school 4 had the most negative. In looking at sense of belonging scores, the school with the most positive perceptions was school 6 and school 4 had the most negative. Finally, school 4 had the most positive “home involvement” scores, while school 3 had the most negative. Overall, no one school had an obviously negative or an obviously positive school climate. This finding is not surprising in light of previous social-ecological research that school climate perceptions vary as a function of goodness of fit between students’ social needs and their schools’ social environment (Brand & Felner, 1996; Eccles et al., 1993). Studies conducted to assess the variation in school climate perception between schools have found that the between school variances are small, ranging between three and ten percent.
(Brand et al., 2003; Griffith, 2000), however, both studies found that students within the schools had a wide range of perceptions regarding the school climate.

This current study found some statistically significant differences in school climate perception by student-reported ethnicity. Students reporting being Non-White, had a greater sense of ambiguity (less perceived control), a higher level of reported worrying, and a higher sense of belonging. This current study did not find a statistical significant difference in perceptions of school climate for boys and girls, as reflected by the analyses conducted using the factor scores. One pattern that emerged quite clearly, however, was that sixth graders had positive views of their school climate and eighth graders had quite negative views. This is borne out in the published literature (Morse, Anderson, Christenson, & Lehr, 2004; Whitlock, 2003). Only two factors appear to predict school connectedness: age and, to a lesser extent, the sex of the student. The relationship between school connectedness and sex is inconsistent across studies while the relationship between age and school connectedness is quite consistent and persistent: the older youth are, the less connected they feel to school (Whitlock).

**Research question 6**

Research Question 6: Do the independent variables – perception of school climate variables and school membership – have a significant relationship with students reporting being involved in bullying at all, as a bully or as a victim?

According to the multiple regression analysis in which being bullied was the outcome variable, being male, being in grades sixth and seventh, being in schools 0 and 3, reporting negative feelings about relationships with teachers and adults at the school,
reporting a greater sense of worry, and reporting negative feelings about relationships with peers were all significant predictors of being a victim of bullying. As discussed previously, being male and being in younger grades have been found to be predictors of bullying in published research. School membership also was important in the model. School 0 had the highest levels of bullying reported, and this school is the most different school on the list of schools: the highest number of minority students, the lowest school performance scores, and the highest percentage of students on a free or reduced price lunch program. School 3, however, does not stand out for any apparent reason. The school observations and the teacher focus group responses would have been helpful in perhaps elucidating possible reasons for this result. Alternatively, discussing the results with staff at school 3 may also elucidate possible reasons for the finding.

Students’ perceptions regarding school climate were correlated with self-reported bullying victimization. Students that reported being bullied also tended to report negative feelings about their relationships with teachers, more sense of worry, and negative feelings about their peer relationships. Because this study is cross sectional, it is not possible to say that the negative school climate perceptions caused bullying victimization or vice-versa. However, similar findings have been reported in the literature. Victims of bullies tend to be socially anxious (Juvonen, Graham, & Schuster, 2003). The victims also report lower levels of satisfaction with relationships with teachers and adults at the school and with peers, possibly as a result of being bullied (Espelage, Holt, & Henkel, 2003; Pellegrini, 2002; Rodkin et al., 2000).
For the multiple regression analysis in which bullying aggression was the outcome variable, being male, being in the sixth and eighth grade, being in schools 0 and 3, reporting negative feeling about relationships with teachers, reporting less sense of worry, and reporting positive feelings about relationships with peers were associated with increased reports of bullying aggression. Similar results have been found in previous studies. Students involved in bullying have a high level of social acceptance by other children (Mynard & Joseph, 1997). In one Canadian study, researchers found that reduced bullying behavior was linked to positive teacher relationships (Boyce, 2004). Psychological research has debunked several misconceptions associated with bullying, including one that states bullies are usually the most unpopular students in school. A study by Rodkin et al., (2000) involving fourth-through-sixth-grade boys found that highly aggressive boys may be among the most popular and socially connected children in elementary classrooms, as viewed by their fellow students and even their teachers.

Another misconception is that the tough and aggressive bullies are basically anxious and insecure individuals who use bullying as a means of compensating for poor self-esteem. Using a number of different methods including projective tests and stress hormones, Olweus and others have concluded that there is no support for such a view (Olweus, 1993). Most bullies had average or better than average self-esteem (Björkvist, 2001; Olweus, 1978; Olweus, 1993).

Research question 7

Research Question 7: Does the combined effect of the independent variables – school climate variables and school membership – explain the observed variation in students reporting being involved in bullying at all?
School membership does have an effect on student reported involvement in bullying. School 0 had the second highest enrolment number and the highest number of Non-White students. It is in this school the highest number of predictor variables are statistically significant. Grade level is not a significant predictor at school 6. Being in the sixth grade, however, is associated with bullying behaviors in schools 3 and 4. The one predictor variable that remains constant throughout the schools is the perceptions of peer relationships. Perceptions of peer relationships are positive for bullies and negative for victims. The results obtained from the multiple regression analyses are summarized in table 19.

Table 19. Summary of Predictors Associated with Bullying Victimization and Aggression Obtained from Multiple Regression Analyses Conducted by School

<table>
<thead>
<tr>
<th>School</th>
<th>Victim</th>
<th>Aggressor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Boy</td>
<td>Boy</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>Non-White</td>
</tr>
<tr>
<td></td>
<td>Negative perception of teacher relationships</td>
<td>Negative perception of teacher relationships</td>
</tr>
<tr>
<td></td>
<td>Negative perception of peer relationships</td>
<td>Positive perception of peer relationships</td>
</tr>
<tr>
<td></td>
<td>High worry</td>
<td>Low worry</td>
</tr>
<tr>
<td>1</td>
<td>High worry</td>
<td>Low worry</td>
</tr>
<tr>
<td></td>
<td>Negative perception of peer relationships</td>
<td>Positive perceptions of peer relationships</td>
</tr>
<tr>
<td>3</td>
<td>Sixth grade</td>
<td>Sixth grade</td>
</tr>
<tr>
<td></td>
<td>Negative perception of peer relationships</td>
<td>Positive perception of peer relationships</td>
</tr>
<tr>
<td></td>
<td>High worry</td>
<td>Low worry</td>
</tr>
<tr>
<td>4</td>
<td>Boy</td>
<td>Boy</td>
</tr>
<tr>
<td></td>
<td>Sixth grade</td>
<td>Sixth grade</td>
</tr>
<tr>
<td></td>
<td>Negative perception of peer relationships</td>
<td>Positive perception of peer relationships</td>
</tr>
<tr>
<td></td>
<td>High worry</td>
<td>Low worry</td>
</tr>
<tr>
<td>6</td>
<td>Boy</td>
<td>Boy</td>
</tr>
<tr>
<td></td>
<td>Negative perception of teacher relationships</td>
<td>Negative perception of teacher relationships</td>
</tr>
<tr>
<td></td>
<td>Negative perception of peer relationships</td>
<td>Positive perception of peer relationships</td>
</tr>
<tr>
<td></td>
<td>High worry</td>
<td>Low worry</td>
</tr>
<tr>
<td>7</td>
<td>High levels of ambiguity, unpredictability</td>
<td>Low levels of ambiguity, unpredictability</td>
</tr>
<tr>
<td></td>
<td>Negative perception of peer relationships</td>
<td>Positive perception of peer relationships</td>
</tr>
<tr>
<td></td>
<td>High worry</td>
<td>Low worry</td>
</tr>
</tbody>
</table>
To further analyze the differences observed between schools, the researcher conducted multilevel analyses using school level variables obtained from a Florida Department of Education’s School Accountability Report. Not surprisingly, the between school variation was not great. According Bronfenbrenner’s ecological theory, it is not the environment itself that affects behavior, but students perceptions of that environment. This is important, because it accounts for why two students in similar environments may exhibit radically different behaviors (Thomas, 1996). Furthermore, these schools were quite similar to each other, with the exception of school 0, reducing the researcher’s ability to observe effects of school level differences on student behaviors. The one school-level variable that was significant in the full multilevel model was the percentage of students eligible for free or reduced-price lunch. This variable is most likely a proxy of low-income status. Additionally, schools with a high percentage of students eligible for free or reduced-price lunch, are also schools where students are less homogeneous.

One characteristic that researchers have found affects bullying is perceived differences: “The perception of ‘difference’ is at the root of teasing and bullying among young children. Almost any perceived difference – gender, race, ethnicity, language, social class, disability, sex – can become fodder for hurtful words and actions” (Froschl and Gropper, 1999, p. 73).

Research question 8

Research question 8: Does gender modify the observed effects of independent variables on students reporting involvement in bullying at all, as a bully or as victim?
Sex was significantly associated with bullying behavior, with boys engaging in higher amounts of bullying behavior than girls. Because of the potential influence of gender on the associations tested, the researcher examined the extent to which gender modified these relationships. That is, regression models included the main effect of the predictor variable (e.g., relationship with teachers and adults) and sex and sex by relationship with teachers and adults (e.g., sex x anger) interaction term.

Sex was a significant modifier of perception of relationships with teachers, grade membership, and ethnicity. Girls that report more positive relationships with teachers and adults at the school are less likely to report bullying. Also, girls in seventh grade are more likely to report engaging in bullying than girls in eighth grade. Most research looking at the effects of sex or gender on bullying have focused on the prevalence of different types of bullying, with most studies pointing to girls using social forms of relational bullying. The findings of this current study suggest that girls are more likely to experience relational bullying, at least as victims, but also indicates that how girls interact with teachers and other adults at the school has an impact on their bullying aggression. Also, younger girls are more likely to engage in bullying than older girls. This indicates that there may be a critical grade level in which schools should address bullying among female students.

Among boys, Non-White students are less likely to engage in bullying aggression than students that self-report being white. Only a few studies have looked at the role of ethnicity or race on bullying, and this area of research warrants further investigation. Nansel and colleagues (2001) found that Hispanic students reported bullying others more than White or Black students, whereas Black students reported being bullied significantly
more that White or Hispanic students. In another study, Graham and Juvonen (2002) found that Black and Hispanic students were more likely to be named as aggressive. It appears that the prevalence of bullying with respect to ethnicity is less important than understanding how ethnic characteristic are part of the bullying harassment itself. This current study does not shed light on this particular issue, but suggests that this phenomenon is more predominant in male that female students.

**Limitations and Strengths**

Several limitations lend caution to interpretation of the findings. First, the data were from student self-reports. Corroborating data from other informants (e.g., teachers, parents, or other students) would have made the findings more robust. However, several studies have reported that bullying behaviors occur in locations (e.g., bathroom, school bus) and at times in which adult supervision is limited or nonexistent (Bosworth, Espelage, & Simon, 1999; Kikkawa, 1987). For example, Kikkawa found in a sample of secondary school teachers in Japan, that it was difficult for teachers to notice bullying in the classroom because bullying activities were often subtle and indirect. The researcher sought to mitigate this limitation by including a question regarding how carefully the questions had been read and a question regarding the veracity of the responses. The literature suggests that these types of questions are useful in reducing the problem of exaggerated or untruthful responses (Cornell & Loper, 1998; Furlong & Morrison, 1994).

Second, the data presented in this paper were cross-sectional, allowing for a snapshot of these behaviors and thus precluding any statement about the stability or instability of bullying behavior over time or the directionality or causality of the associations tested.
Third, bullying was measured in terms of behavior in the past thirty days. Thus, the systematic or chronic nature of bullying behaviors was not assessed. The researcher attempted to address this caveat by creating composite bullying victimization and bullying aggression scores. In this manner, the scores ranged from zero (never bullying or having been bullied) to 25 (having been bullied or bullying in all categories of bullying activities at a high frequency).

Fourth, although the researcher originally sought the participation of all students in the six schools, since the sixth and eighth grade students were scheduled to participate in another survey at the same time, only about half of the sixth and eighth grade students took the modified middle school YRBS. Also, students with learning or reading disabilities would have found understanding and completing the survey nearly impossible, and were excluded from the analysis. During the pretesting of the survey, the researcher had the opportunity to meet with students from some of the middle schools, and at this time, the researcher determined that there might be students that would be unable to complete the survey unassisted and would therefore most likely not be represented in the study. Thus, it is highly probable that some of the students at the greatest risk for bullying and particularly for being bullied may be under-represented in the sample.

Finally, the context in which these behaviors were exhibited was not explored. For example, teasing was included as bullying behavior; however, in certain contexts teasing might be a common part of socialization. Although the researcher used a definition of bullying to place the behaviors into context, nonetheless it is possible that students forgot the definition as they answered the questions or that, given a definition of
bullying, students may have felt uncomfortable describing their behaviors towards others as bullying.

Despite the limitations discussed, the current study extends the body of literature on bullying in several ways. First, the measurement of bullying in this study differed from previous conceptualizations of bullying behavior as a dichotomy (yes or no). Studies that dichotomize bullying behaviors focus on the ends of the continuum by excluding students who report low and moderate levels of bullying behavior or by collapsing participants into categories of students who are more or less extreme on a bullying scale. Categorizing students in that way results in reduced precision in the measurement of bullying behavior. Second, measures used to assess bullying required participants to report the frequency with which they did or said certain things (e.g., teasing, pushing) to other students rather than asking participants to report how much they “bullied” others. It was assumed that students were more truthful about their behavior toward others when they were not given the value-laden definition of bullying. Finally, in contrast to previous investigations of bullying and aggression, this study attempted to take an ecological approach that took into account how the individual perception of the school environment affected bullying victimization and aggression.

Recommendations for Future Research

After reviewing the results of this study, the following recommendations are made for future research:

1. Future studies should include a variety of different schools. This middle school sample is not representative of other middle school populations in Florida. The possibility exists that the levels of bullying differ among other middle school populations.
Sarasota County’s schools are fairly homogeneous, so replicating the study across middle schools in different counties may lead to greater variation in the schools and the school’s student composition, which would allow researchers to ascertain how student and school differences affect bullying behaviors.

2. Researchers should take into account other types of emerging bullying types, such as Internet and text messaging bullying (so-called high tech bullying) (Butterfield, 2006) as well as other non-verbal behaviors such as staring daggers or “death stares” (Owens, Shute, & Slee, 2004).

3. Future studies should follow a prospective research design, beginning in sixth grade and following students through their middle school experience. This type of longitudinal study may allow for establishing the stability or instability of bullying rates as well as the directionality of the associations tested.

4. Future studies should expand the school climate factors studies. Every attempt should be made to complete the school profile, expanded to include teacher ethnicity data, and to conduct teacher and staff focus groups. Obtaining this information would require a real buy-in from the school district and from the administration of every school involved.

5. Future studies should conduct additional analyses of the data to determine if other variables such as academic performance that have been found to be associated with school connectedness are associated with bullying.

6. Future studies should expand the parameters of the variables sought to include more information on the family environment. Little research has been conducted on the
familial characteristics of bullies and their victims. However, some investigations have
found significant associations between parenting types and bullying (Olweus, 1993).

7. Future studies should conduct school bullying studies seeking more
information on the surrounding community. If this study had been conducted in different
schools, in different school districts, differences among the communities and
neighborhoods may have come into play. The impact of the larger social milieu of the
community most likely affects both how students perceive school climate and their
bullying behaviors. These differences would have implications on how to best create and
deliver anti-bullying interventions.

*Implications for School Health*

The debate on bullying is currently very interesting for those involved with health
promotion in schools. There is still a degree of disagreement over the nature and
definition of the problem. Many psychologists for example, are attempting to define
bullying as a mental health issue, and thus are focusing on characteristics of the
individual student, such as depression and self esteem, to explain the behavior (Delfabro
et al., 2006; Mynard & Joseph, 1997). Although some aspects of bullying probably can
and should be addressed as mental health issues, for schools, taking an ecological
approach to the problem of bullying makes more sense. Schools can then focus on
drafting anti-bullying and safe school policies and creating supportive social
environments. From an ecological perspective, bullying is a school organization issue, a
teacher professional development issue, a resource and budget issue, and across the
school policy issue, a social/relationship issue, a home-school link issue, and even
possibly an architectural issue. Addressing the problem of bullying from an ecological
perspective thus allows for teachers, peers, parents, and members of the community to be part of the solution. Furthermore, a holistic approach to bullying will likely have other positive impacts such as improved school connectedness, improved academic performance, and increased graduation rates.

An additional implication for middle school health is that the problem of bullying is already present in the sixth grade. The problem of bullying is not as readily apparent at this grade level as demonstrated by the results of the teacher interviews, in which teachers expressed the belief that bullying was most prevalent among eighth grade students. Ideally, to alleviate the problem of bullying among sixth graders, the school system should be addressing bullying at the elementary school level. Additionally, middle schools could institute a middle school orientation session during which focus could be placed on building positive peer relationships among incoming students. Peer-led programs should be avoided, since the danger exists that the more popular bullies may end up in the positions of peer leaders. In spite of limited evaluations that indicate that these programs are ineffective, peer-led programs have become popular in schools (Department of Health and Human Services, 2001; Elliott, 1998). One peer-led program currently used in a Florida county is the Ophelia Project. This program currently has not been evaluated and relies on testimonials to demonstrate its effectiveness (Ophelia Project, 2006). Instead of selecting popular programs, schools should seek to implement programs that have been evaluated, and a good resource for finding some of these programs is the Substance Abuse and Mental Health Services Administration’s (SAMHSA) Model Programs Web site. An example of a program that has been evaluated and has been widely used is the Olweus Bullying Prevention Program, which
has three components: a school-wide component, a class-level element, and an individual-level section (SAMHSA, 2006).

Another implication for school health is the need to look at the bullying problem among girls. Most of the original bullying research focused on boys (Olweus, 1993). Girls in middle school experience bullying, and for them the problem appears to peak in the seventh grade. Programs designed to address specific issues facing adolescent girls, especially if implemented before these girls reach middle school, may help schools deal with the problem of middle school bullying proactively.

*Implications for Public Health*

Bullying has negative short-term and long-term consequences. Among victims, there is a three-fold increased likelihood of having missed whole days of school due to fear (Epidemiology, Planning, and Evaluation Unit of Seattle & King County Public Health, 2002). For victims, bullying is associated with frequent changing of school, increased likelihood of dropping out altogether, loneliness, social isolation, and has even been linked with increased suicidal thoughts and attempts (Cohn & Carter, 2003; Olweus, 1993). Finally, among victims, bullying has been linked with rage and, in rare cases with other contributing factors, homicide (Twemlow, 2003). For the bully, bullying also has negative consequences. Olweus (1993) reports a four-fold increase of future criminal behavior. Bullying is also associated with poor academic achievement and increased likelihood of drug-use and other self-endangering behavior (Nansel et al, 2001).

Not only can bullying have far-reaching effects on children, bullying behaviors have no single cause. In fact, studies show that the problem is generally triggered by something at home in the child’s environment (Bosch & DeFrain, 2003). Given that the
source of some of the problem is outside the school’s scope of influence, a more systemic approach is needed to help children affected by bullying.

Bullying prevention endeavors will benefit from collaborative policy development and school initiatives on bullying prevention. What these policies should be and who best to target with interventions, however, is not always clear. The prevalence and distribution of bullying in schools is often underestimated or misjudged. For example, in this study school staff believed that physical and verbal bullying were the most prevalent forms of bullying among sixth graders, and relational bullying was most common among eighth graders. However, analysis of the data revealed that seventh graders reported the highest levels of physical and verbal victimization and the highest levels of physical aggression. Devising policy with information from the children themselves may help ensure that the best outcomes for health are secured. Bullying is generally managed as an issue detracting from the core purpose of the school – learning; however schools and the health of children may benefit from viewing patterns of bullying and victimization as a threat to health status and future wellbeing. When looking at bullying in this wider context, schools cannot be expected to act alone, and the field of public health, with its reliance on a research-based epidemiologic approach, has the expertise to address the problem.
References


Freiberg, H. J. (1999). Three creative ways to measure school climate and next steps. In
H. J. Freiber (Ed.), *School climate: Measuring, improving, and sustaining healthy
learning environments* (pp. 208-218).

learning environments. In H. J. Freiberg (Ed.), *School climate: Measuring,
improving, and sustaining healthy learning environments* (pp. 11-29).

Leadership, 56*(8), 72-75.


Garbarino (Ed.), *Children and families in the social environment* (2nd ed., pp. 11-33).

stay in school among Mexican American students. *Journal of Research
Development in Education, 33*(1), 1-14.


Graham, S., & Juvonen, J. (2002). Ethnicity, peer harassment and adjustment in middle

Sage.


Tagiuri, R. (1968). The concept of organizational climate. In R. Tagiuri & G. H. Litwin (Eds.), *Organizational climate: Exploration of a concept* (pp. 11-32). Boston, MA: Harvard University, Division of Research, Graduate School of Business Administration.


Appendices
### Appendix A

#### School Profile

<table>
<thead>
<tr>
<th>Information Obtained from Principal or Administrator</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Name of Middle School</td>
<td></td>
</tr>
<tr>
<td>2. Enrollment</td>
<td></td>
</tr>
<tr>
<td>6(^\text{th}) Grade</td>
<td></td>
</tr>
<tr>
<td>7(^\text{th}) Grade</td>
<td></td>
</tr>
<tr>
<td>8(^\text{th}) Grade</td>
<td></td>
</tr>
<tr>
<td>3. Average Class Size</td>
<td></td>
</tr>
<tr>
<td>4. Number of Teaching Faculty</td>
<td></td>
</tr>
<tr>
<td>5. Numbers of Non-teaching Faculty</td>
<td></td>
</tr>
<tr>
<td>6. Organization for Instruction</td>
<td></td>
</tr>
<tr>
<td>Emphasis placed on a special subject</td>
<td>(yes or no)</td>
</tr>
<tr>
<td>If yes, name subject</td>
<td></td>
</tr>
<tr>
<td>Use of streaming (yes or no)</td>
<td></td>
</tr>
<tr>
<td>Number of special education classes</td>
<td></td>
</tr>
<tr>
<td>7. Facility</td>
<td></td>
</tr>
<tr>
<td>Number of buildings</td>
<td></td>
</tr>
<tr>
<td>Number of classrooms</td>
<td></td>
</tr>
<tr>
<td>Number of portable classrooms</td>
<td></td>
</tr>
<tr>
<td>8. Teacher Mix: Number of teaching faculty with 5 or fewer years of experience</td>
<td></td>
</tr>
<tr>
<td>9. Teacher Turnover: Number of teaching faculty with 5 or more years of experience in the same school setting. If school is less than 5 years old, then write not applicable.</td>
<td></td>
</tr>
<tr>
<td>10. Teacher Gender Ratio: Number of male teachers</td>
<td></td>
</tr>
<tr>
<td>Number of female teachers</td>
<td></td>
</tr>
<tr>
<td>11. Student Gender Ratio: Number of 6 graders that are female</td>
<td></td>
</tr>
<tr>
<td>Number of 7 graders that are female</td>
<td></td>
</tr>
<tr>
<td>Number of 8 graders that are female</td>
<td></td>
</tr>
<tr>
<td>12. Number of substitute days since the beginning of the year.</td>
<td></td>
</tr>
<tr>
<td>13. Bullying prevention: Have there been any bullying prevention programs, events, or activities in the following academic years:</td>
<td></td>
</tr>
<tr>
<td>2001-2002</td>
<td></td>
</tr>
<tr>
<td>2002-2003</td>
<td></td>
</tr>
<tr>
<td>2003-2004</td>
<td></td>
</tr>
<tr>
<td>14. Does your school have a formal policy regarding bullying? (yes or no)</td>
<td></td>
</tr>
<tr>
<td>15. If your school has a formal policy regarding bullying, is it in the parent/school handbook?</td>
<td></td>
</tr>
</tbody>
</table>

Please feel free to elaborate on previous questions or provide additional information that would be helpful in our study. Thank you!
Appendix B

Bronfenbrenner’s Ecological System Model

Applied to a Classroom System

Adapted from Bronfenbrenner’s Ecological Systems Theory (1995)
## Sarasota County Profile

<table>
<thead>
<tr>
<th>Population</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Population size</td>
<td>329,000</td>
</tr>
<tr>
<td>Percent of population that is female</td>
<td>53%</td>
</tr>
<tr>
<td>Median age</td>
<td>49.5 years</td>
</tr>
<tr>
<td>Percent of population under age 18</td>
<td>17%</td>
</tr>
<tr>
<td>Percent of population 65 years and older</td>
<td>30%</td>
</tr>
</tbody>
</table>

### Race/Ethnicity

| Percent reporting White alone                        | 93%      |
| Percent reporting African American or Black           | 5%       |
| Percent reporting American Indian and Alaskan Native  | 0.5%     |
| Percent reporting Native Hawaiian and other Pacific Islander | 0.5% |
| Percent reporting some other race                     | 2%       |
| Percent reporting two or more races                   | 1%       |
| Percent reporting Hispanic                            | 5%       |

<table>
<thead>
<tr>
<th>Household Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of households</td>
<td>150,000</td>
</tr>
<tr>
<td>Average household size</td>
<td>2.19</td>
</tr>
<tr>
<td>Percent of Households that are families</td>
<td>66%</td>
</tr>
<tr>
<td>Percent of households that are not families</td>
<td>34%</td>
</tr>
</tbody>
</table>

### Nationality

| Foreign born                                          | 11%      |
| Native                                                | 89%      |

### Languages

| Spoke a language other than English at home            | 10%      |
| Of those that spoke another language at home, reported speaking Spanish | 39%     |
| Of those that spoke another language at home, reported speaking other | 61%     |

### Leading industries in Sarasota County, employing population 16 years and older

| Educational, health, and social services              | 17%      |
| Retail                                               | 17%      |
| Professional and business services                   | 12%      |
| Leisure and hospitality                             | 11%      |
| Finance, insurance, and real estate                 | 10%      |

### Most common Occupations

| Sales and office                                      | 33%      |
| Management, professional, and related                | 29%      |
| Service                                              | 21%      |
| Production, transportation, and material moving      | 10%      |
| Construction, extraction, and maintenance            | 7%       |

### Income

| Median household income                              | 40,715   |
| Households receiving income from earnings             | 62%      |
| Households receiving retirement income other than Social Security | 32%   |
| Households receiving Social Security income           | 45%      |
Appendix D

Sarasota Public Middle School Grade Profiles 2003

<table>
<thead>
<tr>
<th>Middle School</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>School Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>48</td>
<td>46</td>
<td>80</td>
<td>58</td>
<td>63</td>
<td>59</td>
<td>99</td>
<td>C</td>
</tr>
<tr>
<td>1</td>
<td>67</td>
<td>69</td>
<td>86</td>
<td>66</td>
<td>72</td>
<td>65</td>
<td>98</td>
<td>A</td>
</tr>
<tr>
<td>3</td>
<td>67</td>
<td>65</td>
<td>93</td>
<td>67</td>
<td>69</td>
<td>70</td>
<td>99</td>
<td>A</td>
</tr>
<tr>
<td>4</td>
<td>51</td>
<td>58</td>
<td>86</td>
<td>57</td>
<td>69</td>
<td>57</td>
<td>97</td>
<td>N*</td>
</tr>
<tr>
<td>6</td>
<td>81</td>
<td>79</td>
<td>95</td>
<td>72</td>
<td>73</td>
<td>78</td>
<td>100</td>
<td>A</td>
</tr>
<tr>
<td>7</td>
<td>66</td>
<td>64</td>
<td>89</td>
<td>70</td>
<td>67</td>
<td>76</td>
<td>99</td>
<td>A</td>
</tr>
</tbody>
</table>

A – Percent meeting high standards in reading  
B – Percent meeting high standards in math  
C – Percent meeting high standards in writing  
D – Percent making gains in reading  
E – Percent making gains in math  
F – Percent of lowest 25% making learning gains in reading  
G – Percent tested  
N* - No grade  

## Appendix E

### School Profiles

<table>
<thead>
<tr>
<th>Middle School</th>
<th>Enrollment</th>
<th>Suspension Rate</th>
<th>% Absent 21+ days</th>
<th>% Eligible Lunch Program</th>
<th>% minority</th>
</tr>
</thead>
<tbody>
<tr>
<td>School 0</td>
<td>1289</td>
<td>18.2</td>
<td>10.5</td>
<td>64.9</td>
<td>63</td>
</tr>
<tr>
<td>School 1</td>
<td>1354</td>
<td>7.1</td>
<td>14.0</td>
<td>31.4</td>
<td>19</td>
</tr>
<tr>
<td>School 3</td>
<td>1110</td>
<td>4.7</td>
<td>12.6</td>
<td>34.10</td>
<td>19</td>
</tr>
<tr>
<td>School 4</td>
<td>1312</td>
<td>9.8</td>
<td>13.2</td>
<td>46</td>
<td>16</td>
</tr>
<tr>
<td>School 6</td>
<td>1327</td>
<td>3.7</td>
<td>8.5</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>School 7</td>
<td>705</td>
<td>15.5</td>
<td>11.1</td>
<td>11.1</td>
<td>7</td>
</tr>
</tbody>
</table>

## Appendix F

### Tagiuri’s Organizational Model

**Applied to School Climate**

<table>
<thead>
<tr>
<th>Categories (Climate Dimensions)</th>
<th>Related Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical and material environment</td>
<td>School building characteristics, school size, class size, use of portable classrooms</td>
</tr>
<tr>
<td>Social milieu (social aspects including individual and group characteristics)</td>
<td>Student and teacher morale, characteristics of the student body; characteristics of teaching faculty</td>
</tr>
<tr>
<td>Social system (patterns of relationships or interactions that exist between individuals or groups or both)</td>
<td>Formal and non-formal relations between principals, teachers and students. Principal-teacher relationship; teacher-teacher relationship; teacher-student relationship; parent-school relationship; teachers’ involvement in decision making.</td>
</tr>
<tr>
<td>Culture (values, belief system, trust cognitive structure and meanings)</td>
<td>Values, norms and trust, teacher’s commitment, group and team work, teacher expectation, academic achievement, discipline, reward-punishment system, school regulation.</td>
</tr>
</tbody>
</table>

Tagiuri, R. (1968). The concept of organizational climate. In R. Tagiuri & G. H. Litwin (Eds.), *Organizational climate: Exploration of a concept* (pp. 11-32). Boston, MA: Harvard University Press, Division of Research, Graduate School of Business Administration.
## Appendix G

### Research Questions

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>YRBS-M Questions</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.  What is the prevalence of bullying in the sample?</td>
<td>Questions 14-23</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>2.  What type of bullying occurs most frequently (physical, verbal, relational)?</td>
<td>Questions 14-23</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>3.  Are there differences in type of bullying or victimization as a function of school, gender, or grade?</td>
<td>Questions 14-23</td>
<td>Bi-variate Statistics – Chi-Square</td>
</tr>
<tr>
<td>4.  What are the perceptions of school climate among sixth and eighth graders?</td>
<td>Questions 70-94</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>5.  Are there differences in school climate perception as a function of school, gender, or grade?</td>
<td>Questions 70-94</td>
<td>Bi-variate Statistics – Chi-Square One-Way ANOVA</td>
</tr>
<tr>
<td>6.  Do the independent variables of school climate and school have a significant relationship with students reporting being involved in bullying at all, as a bully or as a victim?</td>
<td>Independent variables: Questions 70-94 OR What school do you go to? Questions 5 and 6 What is your sex? Question 2 In what grade are you? Question 3</td>
<td>Multiple regression analysis</td>
</tr>
<tr>
<td>7.  Does the combined effect of the independent variables – school climate by school – explain the observed variation in students reporting being involved in bullying at all, as a bully or as a victim?</td>
<td>Independent variables: Questions 70-94 AND What school do you go to? Questions 5 and 6 AND What grade are you in? Question 3</td>
<td>Multiple regression analysis by school Multilevel analysis</td>
</tr>
<tr>
<td>8.  Does gender modify the observed effects of independent variables on students reporting involvement in bullying at all, as a bully or as a victim?</td>
<td>Independent variables: Questions 70-94 AND What school do you go to? What is your sex?</td>
<td>Multiple regression analysis Multilevel analysis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent variables: Questions 14-23</th>
<th>Multiple regression analysis</th>
<th>Multilevel analysis</th>
</tr>
</thead>
</table>
## Appendix H

**School Board of Sarasota County Consent Forms**

### THE SCHOOL BOARD OF SARASOTA COUNTY

**STUDENT REGISTRATION FORM - PLEASE PRINT**

<table>
<thead>
<tr>
<th>TERMS ID #</th>
<th>SCHOOL NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ENTRY DATE</th>
<th>OCCE</th>
<th>TEACHER/TEAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APPLIED DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SPECIAL CONSIDERATIONS & HEALTH PROBLEMS

- **STUDENT LEGAL NAME:** Last, Jr., Sr., etc.
- **SEX:** M/F
- **DATE OF BIRTH:**
- **BIRTH PLACE:** State or Country

### EMERGENCY CONTACTS & TELEPHONE

- **NAME:**
- **RELATIONSHIP:**
- **HOME PHONE:**
- **WORK PHONE:**

- **ADDRESS:**
- **STATE / TERRITORY:**
- **ZIP CODE:**

### SPECIAL EDUCATION PROGRAMS PRIOR TO KINDERGARTEN ENROLLMENT?

- **PARTICIPATION PRIOR TO KINDERGARTEN**
- **Florida First Start Programs:**

### OTHER CHILDREN IN FAMILY

- **NAME:**
- **AGE:**
- **SEX:**
- **NAME OF SCHOOL:**
- **GRADE LEVEL:**

### Release Information

- **Directory Information** (for all grades)
- **Media Release** (for all grades)

### Appendix

**We look forward to working with You and Your Child!**

---

*An Equal Opportunity/Affirmative Action Agency*
DIRECTORY INFORMATION

Federal and state laws, and our Student Records policy, are in place to ensure the confidentiality of each student’s educational record. Most information on your child cannot be shared with others without your signed permission.

These laws and rules, however, do allow school districts to share certain “directory information” without parent consent. Sarasota School Board Policy defines directory information as:

- name, date of birth, place of birth, photograph, current school, current grade, major field of study, participation in sports and activities, weight and height of athletic teams, dates of attendance, degrees and awards received, and most recent school attended.

Our policy also indicates that such information may be published routinely by the school for athletic event programs, honor rolls, yearbooks, school newspapers, parent organization communications, and other school-related activities.

Sarasota Schools will not release student addresses, phone numbers, and electronic mail addresses without parent consent. It is also our policy that, without parent permission, directory information will be available only to persons with an educational interest.

Parents do have the right to block access to directory information, as defined above, to anyone except: (1) school system employees with a legitimate educational interest, and (2) the other parent. A block would apply to all such data.

If you circle “YES” on the front of this form, directory information may be shared.
If you circle “NO” on the front of this form, directory information will not be shared.

MEDIA RELEASE

From time to time during the school year, the district office or various newspapers and television stations interview, photograph, and video tape our schools, teachers, and students to visually explain the schools’ programs and events. These photographs and video tapes are then used in district publications and on the district TV station, and they are used in newspapers and on television. For your child to be included in such media events, the school must have your permission.

If you agree to have your child interviewed, photographed, or video taped for these purposes, please circle the “YES” box on the front of this form.

If you do not want your child interviewed, photographed, or video taped for these purposes, please circle the “NO” box on the front of this form.

ANONYMOUS SURVEYS [grade 6 - 12 ONLY]

Each year our middle and high schools administer various state and local surveys related to drug/alcohol use and other teen risk behaviors. School and district results are used by staff and by School Advisory Committees, and are shared with community agencies, to identify the services needed to assist families.

All surveys are completely anonymous and voluntary - individual students and classrooms are never identified.

If you circle “YES” on the front of this form, your child may be given an anonymous survey.
If you circle “NO” on the front of this form, your child will not be given a survey.
Appendix I

Teacher/Staff Focus Group Moderator’s Guide

Bullying & School Climate

Introduction

Hello. My name is Irene Pintado and I’m the moderator for today’s group discussion. ______ will be taking notes. We appreciate your taking the time to participate in this discussion that is part of a study being conducted as part of a research project. The goal of the study is to learn how school climate and peer bullying are related.

This discussion is one of a series being held with teachers in 5 middle schools in Sarasota County. We want to learn about peer bullying in your schools and the factors that either support or interfere with it.

Before we get started, here are some ground rules and points of information:

Disclosures

1. Confidentiality. Everything that you say here will be kept strictly confidential. Nothing said in this group will ever be associated with any individual by name. We would also ask that you similarly maintain the confidentiality of what is said in the group. Neither will schools be named in any reports.

2. Voluntary Participation. Your participation in this group is entirely voluntary. You may stop participating or withdraw from the group at any time. You do not have to answer any questions that you do not wish to answer. The consent forms provide more detailed information regarding confidentiality and the voluntary nature of participation. If you haven’t already done so, please sign the consent form and pass it to _________.

3. Audio-taping. This session is being taped so that we can write an accurate report about the issues that are raised during the discussion – not of who said what. If there are any objections we will not tape the session. We can also stop the tape during the discussion if necessary.

4. Thanks. Thank you for arranging your schedule to be here for this session today. We appreciate your time and your contributions to this study.

The following are ground rules about how the discussion should work:

Ground Rules

1. Please talk one at a time in a voice as loud as mine.

2. Avoid side conversations with your neighbors.

3. We would like to hear from everyone in the course of the discussion, but you don’t have to answer every question.
Appendix I (Continued)

4. Feel free to respond directly to someone who has made a point. You don’t have to address your comments to me.

5. Say what is true for you and your school. We are not looking for consensus opinions, but are expecting to hear diverse perspectives.

Group Introductions:

Please introduce yourself to the group and tell us:
• Your name and grade(s) you teach
• How long you have been a teacher
• How long you have been a teacher at this school

Part I. School Climate

A. General Characteristics of Schools with Positive School Climate

Let’s begin by talking about what a “positive school climate” means to you. What is the first thing that comes to mind when you hear the term “positive school climate?”

• In general, how important is the physical environment (school buildings, bulletin boards, lighting, etc.) in establishing a positive school climate?
• How important are teacher-student interactions in establishing a school climate?
• In general, how important are student-student interactions in establishing a school climate?
• How important is parental involvement to school climate?
• Having clearly states rules and clearly stated consequences to breaking those rules?

Now we will discuss school climate characteristics in your school.

B. School Climate Characteristics of Your School

What aspects of your school’s physical environment have a positive effect on how student’s feel about being school?
• In your opinion, are there any aspects of the school’s physical environment that have a negative effect

What kinds of activities or programs does the school engage in to create an inviting school climate for students?
• Schoolwide?
• In your own classrooms?

How would you rate the student-teacher relationship at this school? Give it a letter grade.
• What factors did you consider to come up with this grade?
• In what areas of the student-teacher relationship does the school excel?
• In what areas of the student-teacher relationship could the school improve?
• How do you think your students would rate the student-teacher relationship at this school?
  What in your experience leads you to say this?
• Do you think that students in different grade levels feel differently about the student-teacher relationship?
• 6th grade, 7th grade, 8th grade
Appendix I (Continued)

• If there is a difference, why?
• Do you think that girls and boy would feel differently about the student teacher relationship? Why?
• Would there be any cultural differences? Would students from different ethnic groups feel differently? Why?

How would you rate the student-student relationship at this school? Give it a letter grade.
• What factors did you consider to come up with this grade?
• Would you say that students at this school have a more cooperative or a more competitive/adversarial relationship?
• How do students from different grades interact with each other? Same grade students interact with each other?
• How do you think your students would rate the student-student relationship at this school? Why
• Do you think that students in different grade levels feel differently about the student-student relationship? Why?
• Do you think that boys and girls would feel differently about the student-student relationship? Why?
• Would there be cultural differences in how students rate peer relationships at this school? Why?

Do you feel that students worry about rules at school and not knowing what is expected?
• Do you think that grade level affects how students feel about rules and not knowing what is expected?
• Why?
• How would your students rate the clarity of the school’s rules and consequences? Give it a letter grade. Explain.

The next are questions about how your students feel about their role of students.

What aspects of schoolwork do you feel that your students worry most about?
• Is it tests, homework, giving presentations in class, reports, etc.?
• Do the worries change as students get promoted from one grade level to another?

How would you rate parent involvement at your school? Give it a letter grade.

• What factors did you consider to come up with this grade?
• Do you have specific goals for parent involvement in your schools?
• How close are your schools to meeting those goals?
• Can you provide some examples of specific activities or events that parents are typically involved in at your schools?
  • How involved are the parents? Do more than half the parents typically come to school-sponsored events?

Overall, how would you rate the school climate at your school? Please give it a letter grade.
Appendix I (Continued)

Part II. Bullying
Does your school have a stated policy on bullying among students?
• What are the rules regarding bullying?
• What happens if a student bullies another?
What has been your personal experience with students bullying other students at this school?

Is there a particular type of student that gets bullied?

Do you feel that bullying is an issue that students in this school are concerned about?

Do you think that bullying is an issue that parents of students at this school are concerned about?

Do you think that bullying is an issue at this school?
• Have there been any anti-bullying programs or other programs that have addressed bullying or peer victimization at this school?

Part III. Closing

Person writing the notes gives a recap.

Did we miss anything?

Is there anything you would like to add?

We really appreciate all the information you’ve shared with us today.

Thank you very much for your time.
Appendix I (Continued)

Demographic Survey

Perceptions of School Climate and Bullying in Middle Schools

Name of the school where you teach ________________________________
Grade level(s) you currently teach: ________________________________
Subject(s) you currently teach: ________________________________
How many years of teaching experience do you have (at any school)?
________________________________________________________________
How many years have you taught at the current school?
________________________________________________________________

What is your sex?
[ ] 1. male
[ ] 2. female

What age range would you say you best fall in?
[ ] 1. 15-20
[ ] 2. 21-30
[ ] 3. 31-40
[ ] 4. 41-50
[ ] 5. 51 and above

How would you describe your ethnicity?
[ ] 1. Hispanic or Latino
[ ] 2. Not Hispanic or Latino

How would you describe your race? Select one or more.
[ ] 1. American Indian or Alaska Native
[ ] 2. Asian
[ ] 3. Black or African American
[ ] 4. Native Hawaiian or Other Pacific Islander
[ ] 5. White
Appendix J

Physical Environmental School Checklist

Perceptions of School Climate and Bullying in Middle Schools

<table>
<thead>
<tr>
<th>Physical Characteristics</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrance area</td>
<td></td>
</tr>
<tr>
<td>Pathways and promenades</td>
<td></td>
</tr>
<tr>
<td>Centralized locations of administration</td>
<td></td>
</tr>
<tr>
<td>Circulation Patterns</td>
<td></td>
</tr>
<tr>
<td>Display of Student Work</td>
<td></td>
</tr>
<tr>
<td>Lighting</td>
<td></td>
</tr>
<tr>
<td>Window views</td>
<td></td>
</tr>
<tr>
<td>Green Areas</td>
<td></td>
</tr>
<tr>
<td>Interior Colors</td>
<td></td>
</tr>
<tr>
<td>Graffiti</td>
<td></td>
</tr>
<tr>
<td>Litter</td>
<td></td>
</tr>
<tr>
<td>Furniture Condition</td>
<td></td>
</tr>
<tr>
<td>Furniture Arrangement</td>
<td></td>
</tr>
</tbody>
</table>
### Appendix K

#### Student Perceptions of School Climate

<table>
<thead>
<tr>
<th>Concept</th>
<th>Questions in YRBS-M</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relationship with Teachers</strong></td>
<td>SC1 - My teachers expect that students treat each other with respect. (Question 70)</td>
</tr>
<tr>
<td></td>
<td>SC2 - Teachers at this school are not interested in people like me. (Question 71)</td>
</tr>
<tr>
<td></td>
<td>SC 3 - My teachers take the time to listen to me when I have a problem. (Question 72)</td>
</tr>
<tr>
<td></td>
<td>SC4 - My teachers treat students fairly. (Question 73)</td>
</tr>
<tr>
<td></td>
<td>SC5 - My teachers give help in class when I ask for it. (Question 74)</td>
</tr>
<tr>
<td></td>
<td>SC6 - There is at least one teacher or adult at this school I can talk with if I have a problem. (Question 75)</td>
</tr>
<tr>
<td></td>
<td>SC7 - My teachers talk to me in a friendly way. (Question 76)</td>
</tr>
<tr>
<td></td>
<td>SC8 - Teachers here respect me. (Question 77)</td>
</tr>
<tr>
<td></td>
<td>SC15 – There are clear rules at our school. (Question 84)</td>
</tr>
<tr>
<td></td>
<td>SC16 – I can count on the adults at this school to listen to me. (Question 85)</td>
</tr>
<tr>
<td><strong>Predictability – Sense of Ambiguity</strong></td>
<td>SC12 – I know most of the students in my classes. (Question 81)</td>
</tr>
<tr>
<td></td>
<td>SC14 – There are clear consequences for breaking the rules at school. (Question 83)</td>
</tr>
<tr>
<td><strong>Worries about student/adolescent roles</strong></td>
<td>SC9 – I worry about not making friends at school. (Question 78)</td>
</tr>
<tr>
<td></td>
<td>SC18 – I worry about failing at school. (Question 87)</td>
</tr>
<tr>
<td><strong>Relationships with Peers</strong></td>
<td>SC10 – Students in my classes help one another when they need it. (Question 79)</td>
</tr>
<tr>
<td></td>
<td>SC11 – Student in my classes get along with each other. (Question 80)</td>
</tr>
<tr>
<td></td>
<td>SC13 – I get along with other students at this school. (Question 82)</td>
</tr>
<tr>
<td><strong>Sense of Belonging</strong></td>
<td>SC21 – People here notice when I am good at something. (Question 90)</td>
</tr>
<tr>
<td></td>
<td>SC23 – I wish I were at a different school. (Question 92)</td>
</tr>
<tr>
<td></td>
<td>SC24 – I can really be myself at this school. (Question 93)</td>
</tr>
<tr>
<td></td>
<td>SC25 – I feel like a part of this school. (Question 94)</td>
</tr>
<tr>
<td><strong>Home/School (mesosystem)</strong></td>
<td>SC17 – I work hard on homework for my classes. (Question 86)</td>
</tr>
<tr>
<td></td>
<td>SC19 – My parents/guardians know what’s going on in my classes this year. (Question 88)</td>
</tr>
<tr>
<td></td>
<td>SC20 – My parents/guardians know they can take part in school-related events such as parent nights and field trips. (Question 89)</td>
</tr>
<tr>
<td></td>
<td>SC22 – I participate in after school activities at this school. (Question 91)</td>
</tr>
</tbody>
</table>
## Appendix L

### Bully/Victim Questions

**Survey respondent as the victim:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal</td>
<td>During the past 30 days, how many times did another student tease or call you names? (Question 14)</td>
</tr>
<tr>
<td></td>
<td>During the past 30 days, how many times did another student threaten to hit or hurt you? (Question 15)</td>
</tr>
<tr>
<td>Relational</td>
<td>During the past 30 days, how many times did another student spread rumors about you? (Question 16)</td>
</tr>
<tr>
<td></td>
<td>During the past 30 days, how many times did another student not let you join in what they were doing? (Question 17)</td>
</tr>
<tr>
<td>Physical</td>
<td>During the past 30 days, how many times did another student push, shove, slap, hit, or kick you on purpose? (Question 18)</td>
</tr>
</tbody>
</table>

**Survey respondent as the aggressor:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal</td>
<td>During the past 30 days, how many times did you tease or call another student names? (Question 19)</td>
</tr>
<tr>
<td></td>
<td>During the past 30 days, how many times did you threaten to hit or hurt another student? (Question 20)</td>
</tr>
<tr>
<td>Relational</td>
<td>During the past 30 days, how many times did you spread rumors about another student? (Question 21)</td>
</tr>
<tr>
<td></td>
<td>During the past 30 days, how many times did you keep another student from joining in what you were doing? (Question 22)</td>
</tr>
<tr>
<td>Physical</td>
<td>During the past 30 days, how many times did you push, shove, slap, hit, or kick another student on purpose? (Question 18)</td>
</tr>
</tbody>
</table>
MIDDLE SCHOOL QUESTIONNAIRE

This survey is about health behavior. It has been developed so you can tell us what you do that may affect your health. The information you give will be used to develop better health education for young people like yourself.

DO NOT write your name on this survey. The answers you give will be kept private. No one will know what you write. Answer the questions based on what you really do.

Completing the survey is voluntary. Whether or not you answer the questions will not affect your grade in this class. If you are not comfortable answering a question, just leave it blank.

The questions that ask about your background will be used only to describe the types of students completing this survey. The information will NOT be used to find out your name. No names will ever be reported.

Make sure to read every question.
Use a #2 pencil only.
Fill in the ovals completely.
When you are finished, follow the instructions of the person giving you the survey.

Thank you very much for your help.
Appendix M (Continued)

1. How old are you?
   A. 10 years old or younger
   B. 11 years old
   C. 12 years old
   D. 13 years old
   E. 14 years old
   F. 15 years old
   G. 16 years old or older

2. What is your sex?
   A. Female
   B. Male

3. In what grade are you?
   A. 6th grade
   B. 7th grade
   C. 8th grade

4. How do you describe yourself?
   A. American Indian or Alaska Native
   B. Asian
   C. Black or African American
   D. Hispanic or Latino
   E. Native Hawaiian or Other Pacific Islander
   F. White

5. What school do you go to?
   A. School 1
   B. School 2
   C. School 3
   D. School 4
   E. School 5
   F. School 6
   G. School 7
   H. School 8
   I. School 9
6. What school do you go to?
   A. School 10
   B. School 11
   C. School 12
   D. School 13
   E. School 14

The next 17 questions ask about personal safety and violence-related behaviors.

7. How often do you wear a seat belt when riding a car?
   A. Never
   B. Rarely
   C. Sometimes
   D. Most of the time
   E. Always

8. When you ride a bicycle, how often do you wear a helmet?
   A. I do not ride a bicycle
   B. Never wear a helmet
   C. Rarely wear a helmet
   D. Sometimes wear a helmet
   E. Most of the time wear a helmet
   F. Always wear a helmet

9. When you rollerblade or ride a skateboard, how often do you wear a helmet?
   A. I do not rollerblade or ride a skateboard
   B. Never wear a helmet
   C. Rarely wear a helmet
   D. Sometimes wear a helmet
   E. Most of the time wear a helmet
   F. Always wear a helmet

10. Have you ever ridden in a car driven by someone who had been drinking alcohol?
    A. Yes
    B. No
    C. Not sure
Appendix M (Continued)

11. Have you ever carried a weapon, such as a gun, knife, or club to school?
A. Yes
B. No

12. Have you ever been in a physical fight at school?
A. Yes
B. No

13. Have you ever been in a physical fight at school in which you were hurt and had to be treated by a doctor or nurse?
A. Yes
B. No

---

DID YOU KNOW?

**Definition of Bullying:** Bullying is anything from teasing, saying mean things, writing mean notes, or leaving someone out of the group, to physical attacks (hitting, pushing, kicking) where one person or a group of people picks on another person over and over again. Kids who are bullied have a hard time defending themselves.

The next 10 questions ask about bullying at school during the last 30 days.

14. During the 30 days, **how many times did another student tease or call you names?**
   (BULLIED1)

   A. never
   B. 1 or 2 times
   C. 3 to 5 times
   D. 6 to 9 times
   E. 10 or more times
15. During the 30 days, how many times did another student threaten to hit or hurt you? (BULLIED2)

A. 0 times  
B. 1 or 2 times  
C. 3 to 5 times  
D. 6 to 9 times  
E. 10 or more times

16. During the 30 days, how many times did another student spread rumors about you? (BULLIED3)

A. 0 times  
B. 1 or 2 times  
C. 3 to 5 times  
D. 6 to 9 times  
E. 10 or more times

17. During the 30 days, how many times did other students not let you join in what they were doing? (BULLIED4)

A. 0 times  
B. 1 or 2 times  
C. 3 to 5 times  
D. 6 to 9 times  
E. 10 or more times

18. During the 30 days, how many times did another student push, shove, slap, hit, or kick you on purpose? (BULLIED5)

A. 0 times  
B. 1 or 2 times  
C. 3 to 5 times  
D. 6 to 9 times  
E. 10 or more times

19. During the 30 days, how many times did you tease or call another student names? (BULLY1)

A. 0 times  
B. 1 or 2 times  
C. 3 to 5 times  
D. 6 to 9 times  
E. 10 or more times
20. During the 30 days, **how many times did you threaten to hit or hurt another student?** (BULLY2)

   A. 0 times  
   B. 1 or 2 times  
   C. 3 to 5 times  
   D. 6 to 9 times  
   E. 10 or more times

21. During the 30 days, **how many times did you spread rumors about another student?** (BULLY3)

   A. 0 times  
   B. 1 or 2 times  
   C. 3 to 5 times  
   D. 6 to 9 times  
   E. 10 or more times

22. During the 30 days, **how many times did you keep another student from joining in what you were doing?** (BULLY 4)

   A. 0 days  
   B. 1 or 2 days  
   C. 3 to 5 days  
   D. 6 to 9 days  
   E. 10 or more times

23. During the 30 days, **how many times did you push, shove, slap, hit, or kick another student on purpose?** (BULLY 5)

   A. 0 times  
   B. 1 or 2 times  
   C. 3 to 5 times  
   D. 6 to 9 times  
   E. 10 or more times

The next 3 questions ask about attempted suicide. Sometimes people feel so depressed about the future that they may consider attempting suicide or killing themselves.

24. **Have you ever seriously thought about killing yourself?**

   A. Yes  
   B. No
25. Have you ever made a **plan** about how you would kill yourself?
   A. Yes
   B. No

26. Have you ever **tried** to kill yourself?
   A. Yes
   B. No

**The next 10 questions ask about tobacco use.**

27. Have you ever tried cigarette smoking, even one or two puffs?
   A. Yes
   B. No

28. How old were you when you smoked a whole cigarette for the first time?
   A. I have never smoked a whole cigarette
   B. 8 years old or younger
   C. 9 years old
   D. 10 years old
   E. 11 years old
   F. 12 years old
   G. 13 years old
   H. 14 years old or older

29. **During the past 30 days,** have you smoked cigarettes, even one or two puffs?
   A. Yes
   B. No

30. **During the past 30 days,** on how many days did you smoke cigarettes?
   A. 0 days
   B. 1 or 2 days
   C. 3 to 5 days
   D. 6 to 9 days
   E. 10 to 19 days
   F. 20 to 29 days
   G. All 30 days
Appendix M (Continued)

31. **During the past 30 days**, on the days you smoked, how many cigarettes did you smoke per day?

A. I did not smoke cigarettes during the past 30 days  
B. Less than 1 cigarette per day  
C. 1 cigarette per day  
D. 2 to 5 cigarettes per day  
E. 6 to 10 cigarettes per day  
F. 11 to 20 cigarettes per day  
G. More than 20 cigarettes per day

32. **During the past 30 days**, how did you usually get your own cigarettes? (Select only one response)

A. I did not smoke cigarettes during the past 30 days  
B. I bought them in a store, such as a convenience store, super market, or gas station  
C. I bought them from a vending machine  
D. I gave someone else money to buy them for me  
E. I borrowed (or bummed) them from someone else  
F. A person 18 years or older gave them to me  
G. I took them from a store or family member  
H. I got them some other way

33. **When you bought or tried to buy cigarettes** in a store during the past 30 days, were you ever asked to show proof of age?

A. I did not try to buy cigarettes in a store during the past 30 days  
B. Yes, I was asked to show proof of age  
C. No, I was **not** asked to show proof of age

34. Have you ever smoked cigarettes daily, that is, at least one cigarette every day for 30 days?

A. Yes  
B. No

35. **During the past 30 days**, on how many days did you use **chewing tobacco or snuff**, such as Redman, Levi Garrett, Beechnut, Skoal Bandits, or Copenhagen?

A. 0 days  
B. 1 or 2 days  
C. 3 to 5 days  
D. 6 to 9 days  
E. 10 to 19 days  
F. 20 to 29 days  
G. All 30 days
36. **During the past 30 days,** on how many days did you smoke **cigars, cigarillos, or little cigars?**

A. 0 days  
B. 1 or 2 days  
C. 3 to 5 days  
D. 6 to 9 days  
E. 10 to 19 days  
F. 20 to 29 days  
G. All 30 days

The next 4 questions ask about drinking alcohol. This includes drinking beer, wine, wine coolers, and liquor such as rum, gin, vodka, or whiskey. For these questions, drinking alcohol does not include drinking a few sips of wine for religious purposes.

37. Have you ever had a drink of alcohol, other than a few sips?

A. Yes  
B. No

38. How old were you when you had your first drink of alcohol other than a few sips?

A. I have never had a drink of alcohol other than a few sips  
B. 8 years old or younger  
C. 9 years old  
D. 10 years old  
E. 11 years old  
F. 12 years old  
G. 13 years old  
H. 14 years old or older

39. **In the past 30 days,** have you had any alcohol to drink?

A. Yes  
B. No

40. In the last year, have you had **five or more drinks** of alcohol in one day?

A. Yes  
B. No
Appendix M (Continued)

The next 2 questions ask about marijuana use. Marijuana also is called grass or pot.

41. Have you ever used marijuana?
   A. Yes
   B. No

42. How old were you when you tried marijuana for the first time?
   A. I have never tried marijuana
   B. 8 years old or younger
   C. 9 years old
   D. 10 years old
   E. 11 years old
   F. 12 years old
   G. 13 years old
   H. 14 years old or older

The next 4 questions ask about other drug use.

43. Have you ever used any form of cocaine, including powder, crack, or freebase?
   A. Yes
   B. No

44. Have you ever sniffed glue, or breathed the contents of spray cans, or inhaled any paints or sprays to get high?
   A. Yes
   B. No

45. Have you ever used drugs or medicine to get high?
   A. Yes
   B. No

46. Have you ever used a needle to inject any illegal drug into your body?
   A. Yes
   B. No
Appendix M (Continued)

The next 7 questions ask about body weight.

47. How do you describe your weight?

A. Very underweight  
B. Slightly underweight  
C. About the right weight  
D. Slightly overweight  
E. Very overweight

48. Which of the following are you trying to do about your weight?

A. **Lose** weight  
B. **Gain** weight  
C. **Stay** the same weight  
D. I am **not trying to do anything** about my weight

49. Have you ever **exercised** to lose weight or to keep from gaining weight?

A. Yes  
B. No

50. Have you ever **eaten less food, fewer calories, or foods low in fat** to lose weight or to keep from gaining weight?

A. Yes  
B. No

51. Have you ever **gone without eating for 24 hours or more** (also called fasting) to lose weight or to keep from gaining weight?

A. Yes  
B. No

52. Have you ever **taken any diet pills, powders, or liquids** without a doctor’s advice to lose weight or to keep from gaining weight? (Do not include meal replacement products such as Slim Fast.)

A. Yes  
B. No

53. Have you ever **vomited** or **taken laxatives** to lose weight or to keep from gaining weight?

A. Yes  
B. No
Appendix M (Continued)

The next 5 questions ask about physical activity.

54. **On how many of the past 7 days** did you exercise or participate in physical activity for **at least 20 minutes** that made you sweat and breathe hard, such as basketball, soccer, running, swimming laps, fast bicycling, fast dancing, or similar aerobic activities?

   A. 0 days  
   B. 1 day  
   A. 2 days  
   D. 3 days  
   E. 4 days  
   F. 5 days  
   G. 6 days  
   H. 7 days

55. **On an average school day**, how many hours do you watch TV?

   A. I do not watch TV on an average school day  
   B. Less than 1 hour per day  
   C. 1 hour per day  
   D. 2 hours per day  
   E. 3 hours per day  
   F. 4 hours per day  
   G. 5 or more hours per day

56. **Do you play on any sports teams?** (Include any teams run by your school or community groups.)

   A. Yes  
   B. No

57. **Have you ever been injured while exercising, playing sports, or being physically active and had to be treated by a doctor or nurse?**

   A. Yes  
   B. No
The next question asks about AIDS education.

58. Have you ever been taught about AIDS or HIV infection in school?
   A. Yes
   B. No
   C. Not sure

The next 4 questions ask about sexual intercourse.

59. Have you ever had sexual intercourse?
   A. Yes
   B. No

60. How old were you when you had sexual intercourse for the first time?
   A. I have never had sexual intercourse
   B. 8 years old or younger
   C. 9 years old
   D. 10 years old
   E. 11 years old
   F. 12 years old
   G. 13 years old
   H. 14 years old or older

61. With how many people have you ever had sexual intercourse?
   A. I have never had sexual intercourse
   B. 1 person
   C. 2 people
   D. 3 or more people

62. The last time you had sexual intercourse, did you or your partner use a condom?
   A. I have never had sexual intercourse
   B. Yes
   C. No
Appendix M (Continued)

The next 2 questions are about health-related behaviors.

63. How often do you wear sunscreen or sun block when you are outside for more than an hour?
   A. Never
   B. Rarely
   C. Sometimes
   D. Most of the time
   A. Always

64. On an average school day, how many hours do you spend playing video games or using a computer for fun? (Include activities such as Nintendo, Game Boy, Play Station, and computer games.)
   A. I do not play video games or use a computer for fun
   B. Less than 1 hour
   C. 1 hour
   D. 2 hours
   E. 3 hours
   F. 4 hours
   G. 5 hours
   H. 6 or more hours

The next 5 questions are about delinquent behaviors.

65. Since school started this year how many times have you skipped school?
   A. Never
   B. 1 time
   C. 2 times
   D. 3 times
   E. More than 3 times

66. Since school started this year how many times have you received an in-school suspension?
   A. Never
   B. Once
   C. 1 time
   D. 2 times
   E. More than 3 times
Appendix M (Continued)

67. Since school started this year how many times have you received an out-of-school suspension?
   A. Never
   B. 1 time
   C. 2 times
   D. 3 times
   E. More than 3 times

68. During the past 12 months, how often have you shoplifted (stolen something from a store)?
   A. 0 time
   B. 1 time
   C. 2 or 3 times
   D. 4 or 5 times
   E. 6 or more times

69. During the past 12 months, have you been a member of a gang?
   A. Yes
   B. No

The next 27 questions are about your school.

70. My teachers expect that students treat each other with respect.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

71. Teachers at this school are not interested in people like me.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree
Appendix M (Continued)

72. My teachers take the time to listen to me when I have a problem.

A. Strongly Agree  
B. Agree  
C. Neither Agree nor Disagree  
D. Disagree  
E. Strongly Disagree

73. My teachers treat students fairly.

A. Strongly Agree  
B. Agree  
C. Neither Agree nor Disagree  
D. Disagree  
E. Strongly Disagree

74. My teachers give help in class when I ask for it.

A. Strongly Agree  
B. Agree  
C. Neither Agree nor Disagree  
D. Disagree  
E. Strongly Disagree

75. There is at least one teacher or adult at this school I can talk with if I have a problem.

A. Strongly Agree  
B. Agree  
C. Neither Agree nor Disagree  
D. Disagree  
E. Strongly Disagree

76. My teachers talk to me in a friendly way.

A. Strongly Agree  
B. Agree  
C. Neither Agree nor Disagree  
D. Disagree  
E. Strongly Disagree
77. Teachers here respect me.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

78. I worry about not making friends at school.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

79. Students in my classes help one another when they need it.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

80. Students in my classes get along with each other.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

81. I know most of the students in my classes.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree
Appendix M (Continued)

82. I get along with other students at this school.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

83. There are clear consequences for breaking the rules at school.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

84. There are clear rules at our school.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

85. I can count on the adults at this school to listen to me.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

86. I work hard on homework for in my classes
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree
Appendix M (Continued)

87. I worry about failing at school.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

88. My parents/guardians know what’s going on in my classes this year.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

89. My parents/guardians know they can take part in school-related events such as
   parent nights and field trips.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

90. People here notice when I am good at something.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

91. I participate in after-school activities at this school.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree
Appendix M (Continued)

92. I wish I were at a different school.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

93. I can really be myself at this school.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

94. I feel like a part of this school.
   A. Strongly Agree
   B. Agree
   C. Neither Agree nor Disagree
   D. Disagree
   E. Strongly Disagree

95. Have you been taught about not bullying at school?
   A. Yes
   B. No
   C. Not sure

96. During the past 30 days, how many days did you not go to school because you felt you would be unsafe at school or on your way home from school?
   A. Never
   B. 1 day
   C. 2 or 3 days
   D. 4 or 5 days
   E. 6 or more days
Appendix M (Continued)

The next 3 questions are about your grades in school.

97. How would you describe the grades you usually get on Math assignments or tests?

A. Mostly A’s  
B. Mostly A’s and B’s  
C. Mostly B’s  
D. Mostly B’s and C’s  
E. Mostly C’s  
F. Mostly C’s and D’s  
G. Mostly D’s  
H. Mostly D’s and F’s  
I. Mostly F’s

98. How would you describe the grades you usually get on English assignments or tests?

A. Mostly A’s  
B. Mostly A’s and B’s  
C. Mostly B’s  
D. Mostly B’s and C’s  
E. Mostly C’s  
F. Mostly C’s and D’s  
G. Mostly D’s  
H. Mostly D’s and F’s  
I. Mostly F’s

99. How would you describe the grades you usually get on Science assignments or tests?

A. Mostly A’s  
B. Mostly A’s and B’s  
C. Mostly B’s  
D. Mostly B’s and C’s  
E. Mostly C’s  
F. Mostly C’s and D’s  
G. Mostly D’s  
H. Mostly D’s and F’s  
I. Mostly F’s
Appendix M (Continued)

The next questions ask about your answers on this survey.

100. In general, how often did you tell the truth in answering the questions on this survey?

A. All of the time  
B. Most of the time  
C. About half of the time  
D. Less than half the time  
E. None of the time

101. I read this survey carefully

A. All of the time  
B. Most of the time  
C. About half of the time  
D. Less than half the time  
E. None of the time

Thank you very much for your help!
### Minimum Values of the Content Validity Ratio for Significance at p<.05

(one-tailed test)

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Taken from: Venziano & Hooper (1997)
Summary of School Climate Perceptions

Summary of School Climate perceptions of school climate among students in this sample. The table reflects the percent of students that responded strongly disagree or agree, neither agree nor disagree, or disagree or strongly disagree. Due to some incomplete surveys, the percentage values may not add to 100%.

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Appendix P

USF Institutional Review Board Approval Letter

October 31, 2003

Irene Pintado, BS
15161 Sonoma Dr., Apt 103
Fort Myers, FL 33908

Dear Ms. Pintado:

Your new protocol (IRB #101907) entitled, “Perceptions of School Climate and Bullying in Middle Schools” including the waiver of informed consent has been reviewed under expedited review category number five (5). Having made any required revisions, the approval period for your protocol is shown on the stamp below. This information shall be presented to the Institutional Review Board-02 at its next convened meeting on November 14, 2003.

You should take special note of the following:

• Approval is for up to a twelve-month period, after date of initial review. A Research Progress Report to request renewed approval must be submitted to this office by the submission deadline in the eleventh month of this approval period. A final report must be submitted if the study was never initiated, or you or the sponsor closed the study.

• This study involves data pertaining to children and falls under 45 CFR 46.404- research not involving greater than minimal risk.

• Waiver of Informed Consent is approved having met the following four criteria: the research will not involve greater than “minimal risk” to the subject; it is not practicable to conduct the research without the waiver; waiving will not adversely affect subjects’ rights; and if appropriate, information will be provided to subjects later.

• Any changes in the above referenced study may not be initiated without IRB approval except in the event of a life-threatening situation where there has not been sufficient time to obtain IRB approval.

• All changes in the protocol must be reported to the IRB.

• If there are any adverse events, the Chairperson of the IRB must be notified immediately in writing.

Please note: Based on the new HIPAA Privacy Rule, if you are generating, collecting, using, or disclosing private health information about subjects, they cannot be enrolled into your research study without signing an appropriately approved Authorization Form. Please forward a copy of the approved authorization form from the site’s privacy officer for the file.

If you have any questions regarding this matter, please do not hesitate to call Christy Stephens at (813) 974-3216 or myself at (813) 974-5638.

Sincerely,

[Signature]

Paul G. Stiles, J.D., Ph.D.
Chairperson, IRB-02

PGS: cas
pc: Dr. Brown
FAO

IRB Approval
FWA 00001669
IRB Number: 101907
From 10/28/03
Thru 10/26/04
Irene Pintado received an undergraduate degree in Biology from Barry University in 1990 and a master’s degree in molecular biology from the University of Utah in 1994. Ms. Pintado is currently working at the Lee County Health Department in Fort Myers, Florida.